



# Power Supplies

## Encapsulated Power Supplies

AC-DC 1W ~60W



DC-DC 1W ~ 25W



## LED Drivers 65W ~ 300W

IP65 + 3 In 1 dimming



## Industrial Power Supplies

72W ~ 350W



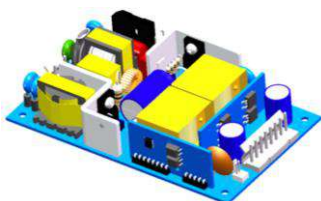
## Customised Solutions

100W~2000W



## DIN Rail Mounting Power Supplies

240W to 960W



[www.myrra.com](http://www.myrra.com)  
[www.myrra-powersupplies.com](http://www.myrra-powersupplies.com)  
Contact us: [contact@myrra.com](mailto:contact@myrra.com)

March-2025

## **Myrra company Profile**

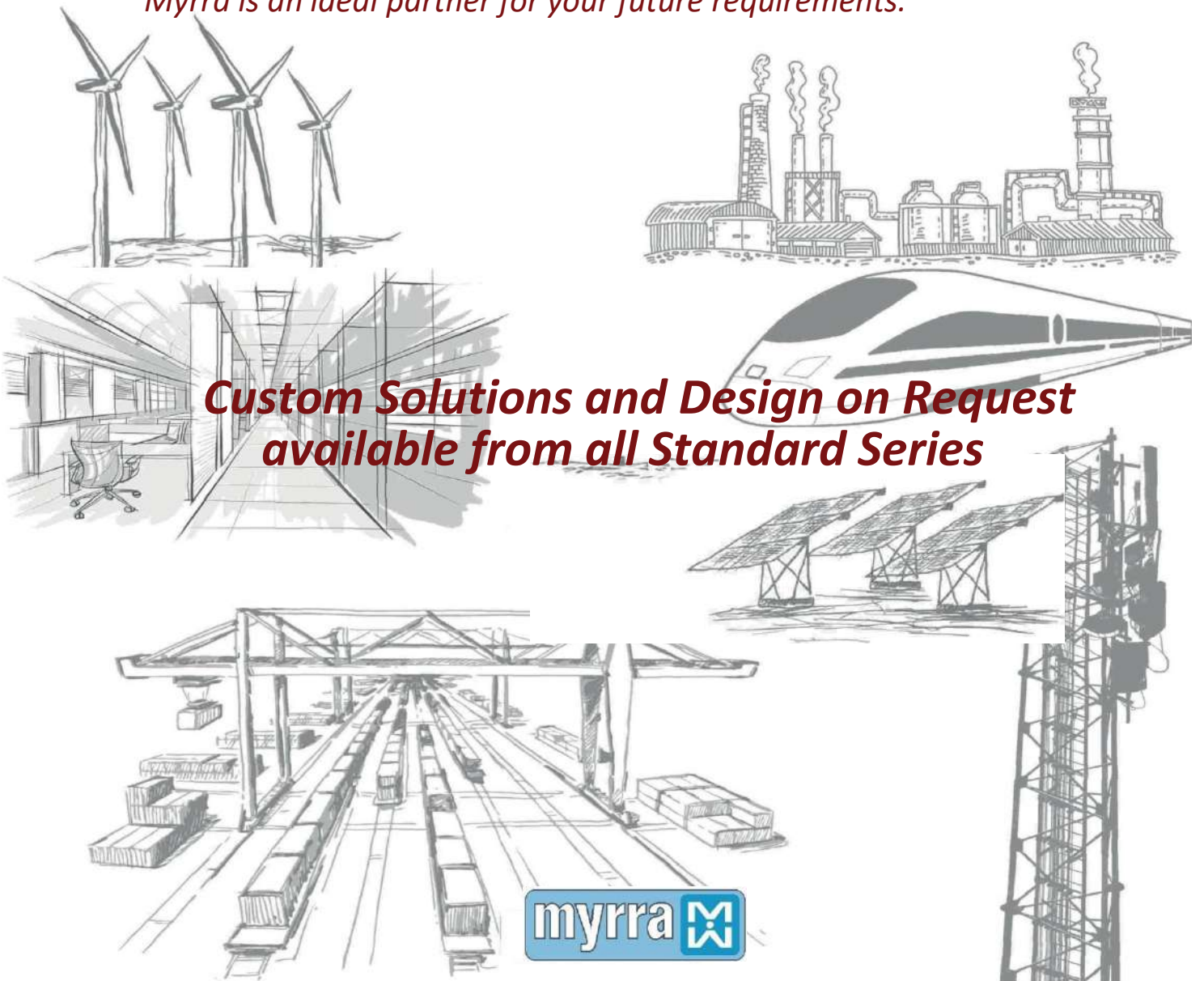
*Myrra Power Supplies, Transformers, Inductors and Choke are World renowned for their reliability and performance.*

*This is the result of constant technological development and continuous production process improvements, which has made Myrra Group a leading Company in both design (R&D) and manufacturing.*

*With their own range of products, including encapsulated Power Supplies, Transformers (50/60Hz), HF Transformers and Value-Added Services, Myrra has become a reliable and renowned Global Supplier.*

*Since incorporation in 1949, Myrra has become one of the largest Europe a sources for their products in the electrical market, and is striving to grow their position in a continuously evolving market.*

*As a Company certified by VDE, UL, CSA, ISO9001 and with a clear policy for conservation of the environment (RoHS, REACH, ISO14001), Myrra is an ideal partner for your future requirements.*



**Custom Solutions and Design on Request  
available from all Standard Series**

**myrra** 

# Power Supplies

*"We at Myrra, Design and Manufacture all our Power Products, ensuring our Customers experience consistent Quality and Reliability"*

## Catalogue Contents

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<b>Page</b>	<b>Details</b>
2-3	Products overview
<b>48000 Series</b>	
4	Single Output 1W ~3W
<b>47000 Series &amp; 49000 Series</b>	
6	Single Output 2.0W ~ 5W (49000C series)
8	Single Output 2.5W ~ 5W
10	Single Output 2.4W ~ 5W (relaxed regulation)
12	Dual Output 3W ~ 5W (common ground)
14	Dual Output 3W ~ 4W (isolated outputs)
16	Single Output 7.5W
18	Single Output 5W ~ 10W (49000E series)
20	Single Output 10W
22	Single Output 20W (49000G series)
24	Single Output 20W
26	Single Output 30W ~ 40W
28	Single Output 50W ~ 60W
30	Single Output 20W ~ 60W(49000J series)
<b>50000 Series DC-DC Converters</b>	
32	Products overview
33	Single Output 1W (3kv I/O isolation voltage)
35	Single Output 2W (3kv I/O isolation voltage)
37	Single Output 2.5W (non-isolated)
39	Single Output 1W (1.5kv I/O isolation voltage)
41	Single Output 15W (1.5kv I/O isolation voltage)
43	Single Output 25W (1.5kv I/O isolation voltage)

### ***51000 Series Industrial Power Supplies***

45	Products overview
46	Single Output 72W
48	Single Output 100W (built-in active PFC function)
50	Single Output 150W (built-in active PFC function)
52	Single Output 200W (built-in active PFC function)
54	Single Output 250W (built-in active PFC function)
56	Single Output 350W (built-in active PFC function)

### ***53000 Series DIN RAIL Mounting Power Supplies***

58	Products overview
59	Single Phase AC input 240W (built-in active PFC function)
61	Three Phase AC input 240W
63	Three Phase AC input 480W (built-in active PFC function)
65	Three Phase AC input 960W (built-in active PFC function)

### ***54000 Series LED Drivers***

67	Products overview
68	LED Driver 65W (built-in active PFC function)
70	LED Driver 100W (built-in active PFC function)
72	LED Driver 200W (built-in active PFC function)
74	LED Driver 300W (built-in active PFC function)

### ***Customised Solutions***

76	Open Frame Type AC-DC Power Supplies 100W ~ 2000W Grow Lights - LED Drivers 100W ~ 2000W LED Drivers& Industrial Power Supplies 100W ~ 2000W
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### ***Support and Service***

77	Application notes 47000,48000 and 49000 series
78	Modified and Customised Solutions

Note:



- Indicates that this family is recommended for new design in projects



Power Supplies

### 1 W to 3 W



3 Certified Power Ratings  
In 1 Power Supply  
48000 Series

### 2W to 5W



3 Certified Power Ratings  
In 1 Power Supply  
49000C Series

### 5W to 10W



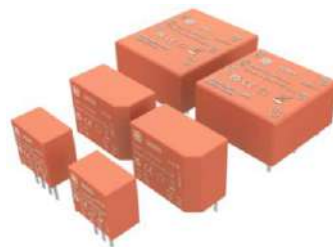
3 Certified Power Ratings  
In 1 Power Supply  
49000E Series

### 20W to 60W

3 Power Ratings  
In 1 Power Supply  
49000G/49000J Series



### DC-DC Converters 1W to 25W



### Industrial Power Supplies

72W to 350W  
Built-in Active PFC Function

### LED Drivers

65W to 300W  
IP65 Rating, 3 In 1 Dimming  
Built-in Active PFC Function



### DIN Rail Mounting Power Supplies

240W to 960W  
Built-in Active PFC Function



### Customised Solutions

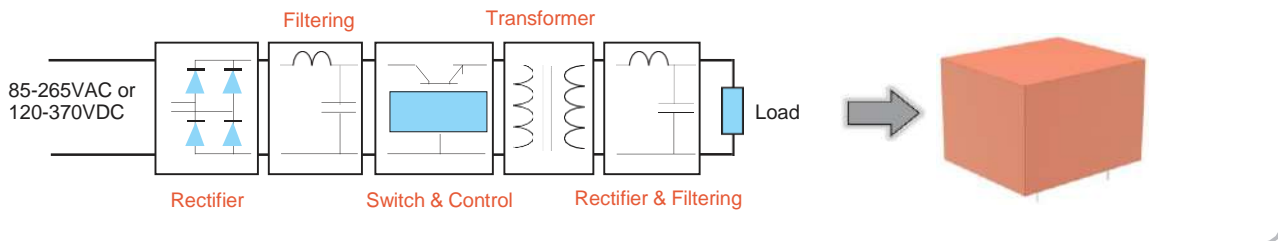
100W to 2000W  
Open Frame Type AC-DC Power Supplies  
LED Drivers & Industrial Power Supplies



# ENCAPSULATED POWER SUPPLIES AC-DC 1W to 60W



## Series 47/48/49



MYRRA encapsulated Switched Mode Power supplies is based on Flyback topology.

They constitute an interesting alternative to the traditional supply in the most common applications of power from 1W to 60W.

**ENERGY SAVING** due to high efficiency and low standby power.

### Application for our Power Supplies:

- Alternative to the linear transformers in all AC-DC applications of power up to 60W
- Alternative to DC-DC converters for application in D.C. current (Telecom supplies, electric substations etc.)
- Industrial, medical, domestic and consumer electronics applications
- Stand by devices and others DC or AC auxiliary supplies

With the same footprint as an EE20-EI30-EI38-EI48 transformer, they will replace:

- 50 Hz Transformer
- Fuse
- Output Rectifier
- Filtering Capacitor
- Linear Regulator/DC to DC Circuit
- Heatsink

### MAIN FEATURES

- **Wide input voltage range**
- **Increased power: 3 x compared to standard EE20-EI30-EI38-EI48 transformers**
- **Better energetic efficiency: 70% typical compared to 40% for the conventional supply**
- **Very low Standby Power consumption: meets requirements of Energy Star or EC Code of Conduct**
- **Same footprint as EE20-EI30-EI38-EI48 transformer: (1W~10W)  
Upgrade your application without redesign of PCB**
- **Operating Altitude Up To 5000m**

### SAFETY STANDARDS

Meets all requirements of:

- IEC/EN62368-1
- IEC/EN60950-1
- IEC/EN60335-1
- IEC/EN61558-2-16
- IEC/EN61558-1
- UL62368-1
- CSA 22.2 N°62368-1
- UL60950-1
- CSA 22.2 N°60950-1
- UL 94-V0

### EMC STANDARDS

Conducted and radiated emissions conform to

- EN 55014-1, EN55032, FCC Part15 Class B
- IEC/EN 61000-3-x

Immunity conform to

- EN 55014-2
- EN 61000-4-x

# ONE OUTPUT 1W to 3W - Small Compact Size



## MAIN FEATURES

- Small Compact Size - PCB Mount
- Single Output
- Output Range: 3.3VDC - 24VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.15W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EE20 Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Compliance With All Requirements of IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, UL60950-1, CAN/CSA22.2No.60950-1-07, CSA22.2No.62368-1-14, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emissions Conform To EN55014, EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient(°C)	Min. Part Efficiency(%)
48021	1	3.3	300	± 6	80	60
	2.5		750		60	63
	2.75		830		50	
48022	1	5	200	± 5	80	60
	2.5		500		60	65
	3		600		50	
48023	1	9	110		80	67
	2.5		280		70	70
	3		330		60	
48024	1	12	84		80	67
	2.5		210		70	72
	3		250		60	
48025	1	15	67		80	67
	2.5		170	70	72	
	3		200	60		
48026	1	18	56	80	67	
	2.5		140	70	72	
	3		170	60		
48027	1	24	42	80	70	
	2.5		105	70	74	
	3		125	60		

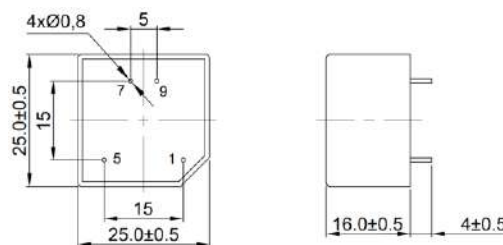
## DIMENSIONS and PINOUT

4 Pins

Pins 1 - 5 : AC or DC Input

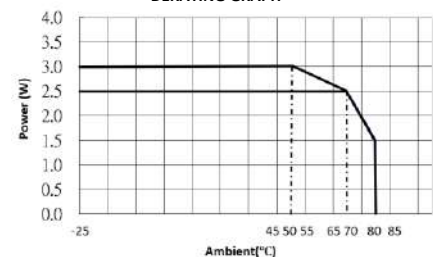
Pin 7: DC output +V

Pin9: DC output 0V

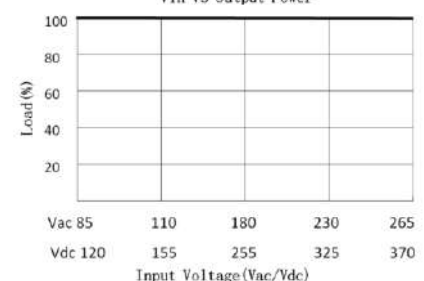


View From Pins Side

DERATING GRAPH



Vin VS Output Power



Model: 1 to 3 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.15A Max@85Vac~265Vac, at full load
	Standby Power	0.15W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	3.3V type: $\pm 6\%$ ,Other types(5V,9V,12V,15V,18V and 24V): $\pm 5\%$
	Output Voltage Line Regulation	3.3V type: $\pm 5\%$ , Other types(5V,9V,12V,15V,18V and 24V): $\pm 3\%$
	Output Voltage Load Regulation	3.3V type: $\pm 6\%$ ,Other types(5V,9V,12V,15V,18V and 24V): $\pm 5\%$
	Ripple & Noise	Max 200mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed $\pm 10\%$ rated output voltage @ 50% $\leftarrow$ 100% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~240Vac, DC output with full load
	Turn On Delay	35 max @ 85Vac~265Vac input and DC output with full load
	Rise Time	50ms max @ 85Vac~265Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~265Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~265Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Over temperature protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C $\pm 10^\circ\text{C}$
Environmental	Operation Temperature	-25°C ~+80°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 secs.
	Radiation	Meeting EN55032,EN55014,FCC part 15, Class B
	Conduction	Meeting EN55032,EN55014, FCC part 15,Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class A
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge $\pm 4\text{KV}$ ,Air Discharge $\pm 8\text{KV}$
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, $\pm 1\text{KV}$
	Lightning Surge	Meeting EN61000-4-5:2014, $\pm 1\text{KV}$ (surge level can be extended to 6KV with an external circuit - please refer to MYRRA's website and catalogue for MYRRA SMPS application notes).
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
	Safety Standards	Compliance with all requirements of : UL60950-1, UL62368-1, CAN/CSA22.2No.60950-1-07, CSA22.2No.62368-1-14, IEC/EN60950-1, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1, CE, VDE, ENEC Marks, UL certificate NO.E345767 VDE certificate NO. 40046353
	Reliability Requirement	MTBF
Burn-In Test		The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 16 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

Myrra reserve the right to change specifications in this document without notice



# ONE OUTPUT 2W to 5W (49000C series)



## MAIN FEATURES

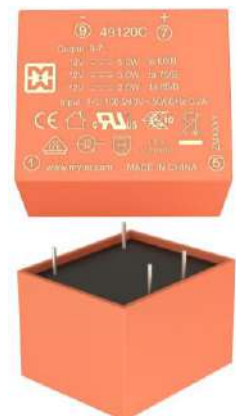
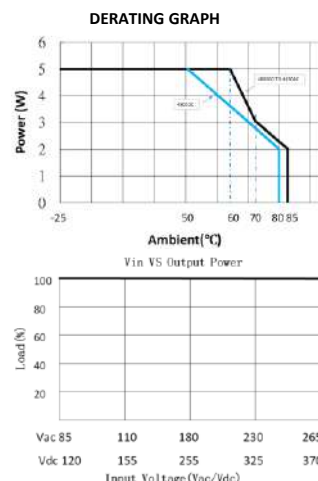
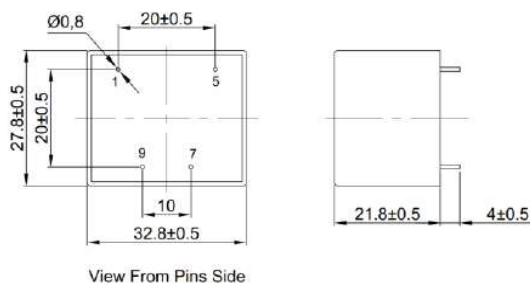
- 2.0 To 5W Small Compact Size - PCB Mount
- Single Output - Secondary Side Regulated
- Output Range : 3.3VDC - 30VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC -370VDC
- Very Low Standby Power Consumption < 0.1W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EI30 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety : Compliance With All Requirements of IEC/EN61558-2-16, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, CSA C22.2NO.62368-1-14,CE,VDE,ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B ,IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
49033C	2	3.3	610	± 2	80	71
	2.75		830		70	
	5		1500		50	
49050C	2	5	400		85	70
	3		600		70	
	5		1000		60	
49090C	2	9	220		85	73
	3		330		70	
	5		560		60	
49120C	2	12	170		85	74
	3		250		70	
	5		420		60	
49150C	2	15	130	85	74	
	3		200	70		
	5		330	60		
49180C	2	18	110	85	76	
	3		170	70		
	5		280	60		
49240C	2	24	84	85	76	
	3		125	70		
	5		210	60		
49300C	2	30	67	85	76	
	3		100	70		
	5		167	60		

## DIMENSIONS and PINOUT

4pins  
 pins 1 & 5: AC or DC Input  
 pin 7: DC output +V  
 pin 9: DC output 0V



Model: 2.0 To 5 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2%
	Output Voltage Line Regulation	± 0.5%
	Output Voltage Load Regulation	± 2%
	Ripple & Noise	Max180mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatically protect against over current. The power supply shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault.
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage; The short may be applied before power on, or after power on. The power supply shall resume normal operation after the short is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault.
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
Environmental	Operation Temperature	-25°C ~+85°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meets EN55032,FCC part 15, Class B. under 3dB margin
	Conduction	Meets EN55032,FCC part 15,Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of : Meet all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1 CE, VDE,UKCA, ENEC Mark UL certificate NO.E345767 VDE certificate NO. 40053361
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with 5W load >550K Hours @ 230VAC input at 25deg.C and DC output with 5W load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The power supply is subject to a burn in test for 2~5hours under 230VAC input and DC full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 2.5W to 5W

## MAIN FEATURES

- 2.5 To 5W Small Compact Size - PCB Mount
- Single Output
- Output Range : 3.3VDC - 24VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EI30 Transformer : Upgrade Your Application Without Redesign Of PCB

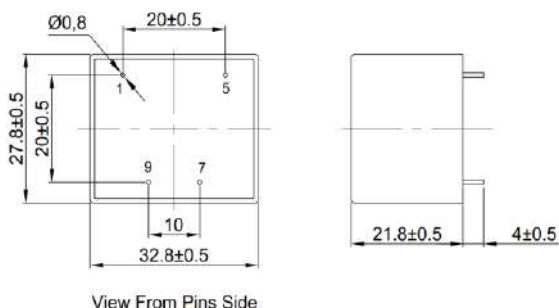
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, IEC/EN62368-1, UL60950-1, CSA22.2No.60950-1, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC Conducted And Radiated Emissions Conform To EN55014, EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy(%)	Max. Operating Ambient (°C)	Min. Part Efficiency(%)
47121	2.5	3.3	750	± 2	70	65
47122	2.75	5	550			65
47123	2.5	9	270			68
47124		12	210			70
47125		15	170			73
47126		24	110			74
47151		4.5	3.3			1350
47152	5	5	900		68	
47153	5	9	550		70	
47154		12	420		73	
47155		15	320		75	
47156		24	220		76	
47157	4.5	3.8	1180		66	

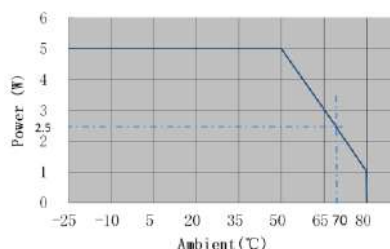
Special Version : 4712xSLI and 4715xSLI = 19.2mm case height (x=1, 2, 3, 4, 5, 6 or 7)

## DIMENSIONS and PINOUT

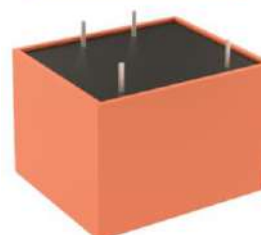
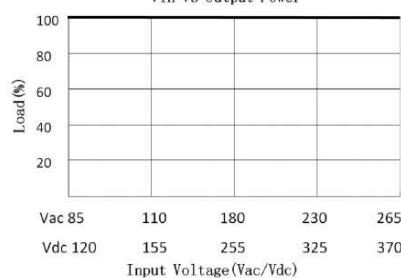
- 4 pins
- pins 1 & 5: AC or DC Input
- pin 7 : DC output +V
- pin 9 : DC output 0V



## DERATING GRAPH



## Vin VS Output Power



Model: 2.5 To 5 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@ DC output at full load
	Standby Power	0.3W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2%
	Output Voltage Line Regulation	± 0.5%
	Output Voltage Load Regulation	± 2%
	Ripple & Noise	Max200mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
Environmental	Operation Temperature	-25°C ~+70°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014 , Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014, Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of UL60950-1, CSA22.2No.60950-1-07JEC/EN60950-1, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1,CE,VDE, ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with full load >550K Hours @ 230VAC input at 25deg.C and DC output with full load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 2.4W to 5W

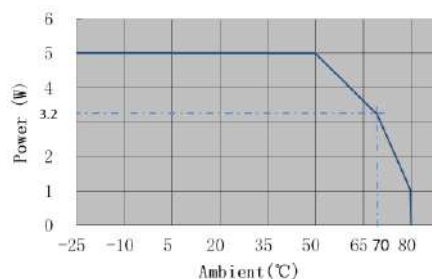


## MAIN FEATURES

- 2.4W to 5W Small Compact Size - PCB Mount
- Single Output
- Output Range : 5.5VDC - 24VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.3W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EI30 Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC Conducted And Radiated Emissions Conform To EN55014, EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

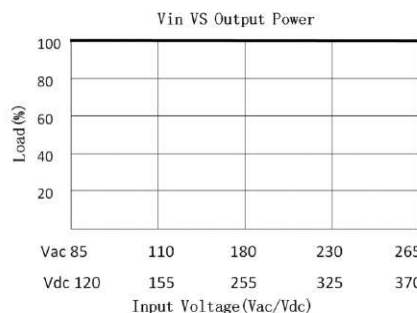
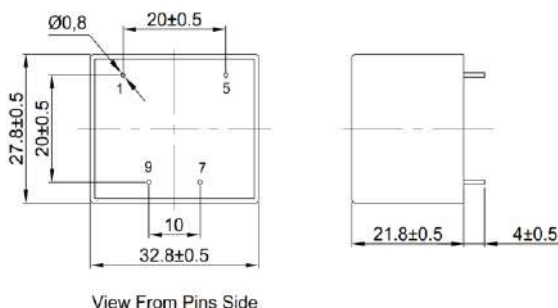
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency (%)
47114	2.4	12	200	± 5	70	70
47132	2.5	5	500			65
47133	3.2	9	360			68
47134		12	270			70
47135		18	180			72
47136		24	130			74
47162	5	5	900		50	68
47163		9	560			70
47164		12	420			74
47165		18	280			74
47166		24	210			76

DERATING GRAPH



## DIMENSIONS and PINOUT

4 pins  
 pins 1 & 5: AC or DC Input  
 pin 7 : DC output +V  
 pin 9 : DC output 0V



Model: 2.4 To 5 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.3W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 5%
	Output Voltage Line Regulation	± 2%
	Output Voltage Load Regulation	± 5%
	Ripple & Noise	Max 200mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformationshall occur, no safety hazard
	Over temperature protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
Environmental	Operation Temperature	-25°C ~+70°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014 , Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014, Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of UL60950-1,CSA22.2No.60950-1-07,IEC/EN60950-1,IEC/EN60335-1,IEC/EN61558-2-16,IEC/EN62368-1 CE,VDE, ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with full load >550K Hours @ 230VAC input at 25deg.C and DC output with full load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# TWO OUTPUTS - COMMON 3W to 5W



## MAIN FEATURES

- 3W To 5W Small Compact Size - PCB Mount
- Two Common Output
- Output Voltage Accuracy : See Table For 15 to 100% Rated Load Of Each Output (includes line and load variations)
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

- Encapsulated Design And Same Footprint As EI30Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Compliance With All Requirements of:IEC/EN61558-2- 16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CSA22.2No.60950-1-07, CE,VDE, ENEC Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC: Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

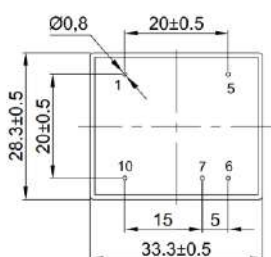
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47243	4.7	(+)10.5 (+) 7.0	380 100	±2 ± 5	50	72
47244	5	(+) 15 (+) 7.0	300 70	±2 ± 5		73
47245	3.2	(+) 12 (+) 5.5	130 300	±3 ± 5	70	65
47246	4	(+) 5.0 (+) 12	400 (600max) 170	±3 ± 5	60	
47247		(+) 15 (-) 15	130 130	±3 ±3		

Notes : The dual DC voltage outputs share a common 0V reference.  
Power deration must be considered at higher operating ambient temperatures.

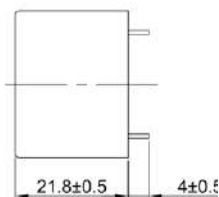
## DIMENSIONS and PINOUT

5 pins

pins 1 & 5: AC or DC Input  
pin 6: Common output 0V  
pin 7: DC output I  
pin 10: DC output II



View From Pins Side



Model: Two Common Outputs 3 TO 5W		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.2W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	See Table
	Cross-Load Regulation	Refer to P/N specification
	Efficiency	See Table(Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWMcontroller exceeds the thermal shutdown temperature, typically 140°C±10°C.
Environmental	Operation Temperature	-25°C ~ +70°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014,Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of UL60950-1,CSA22.2No.60950-1-07,IEC/EN60950-1, IEC/EN60335-1,IEC/EN61558-2-16,IEC/EN62368-1 CE,VDE, ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with full load >550K Hours @ 230VAC input at 25deg.C and DC output with full load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# TWO OUTPUTS - ISOLATED 3.5W to 4W



## MAIN FEATURES

- Small Compact Size - P C B Mount
- Two Isolated Output
- Output Voltage Accuracy :  
See Table For 15 to 100% Rated Load Of Each Output (includes line and load variations)
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct

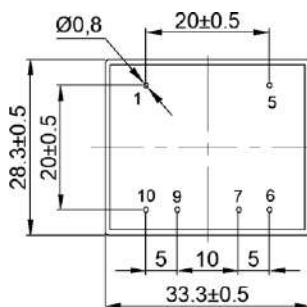
- Encapsulated Design And Same Footprint As EI30Transformer : Upgrade Your Application Without Redesign Of PCB
- Safety: Compliance With All Requirements of: IEC/EN61558-2- 16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CSA22.2No.60950-1-07, CE, VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency (%)				
47252	3.5	5	350 (600 max)	± 3	60	66				
		5	350	± 5						
47254	4	12	165 (300max)	± 2		60	72			
		12	165	± 5						
47255		15	135 (200 max)	± 2			60	73		
		15	135	± 5						
47257		5	400 (600 max)	± 2				60	68	
		12	170	± 5						
47258		18	150 (200 max)	± 4					60	72
		8	150	± 5						

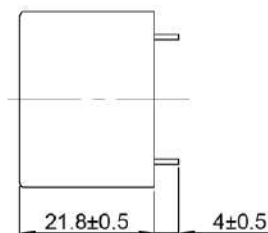
## DIMENSIONS and PINOUT

6 pins

pins 1 & 5: AC or DC Input  
pin 6: DC output 1 0V  
pin 7: DC output 1 +V  
pin 9: DC output 2 0V  
pin 10: DC output 2 +V



View From Pins Side



Model : Two Common Outputs 3.5 TO 4W		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.2A Max@85Vac~265Vac@ DC output with full load
	Standby Power	0.2W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	See Table
	Cross-Load Regulation	Refer to P/N specification
	Efficiency	See Table(Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on ; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWMcontroller exceeds the thermal shutdown temperature, typically140°C±10°C.
Environmental	Operation Temperature	-25°C ~ +60°C (see table)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014,Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of UL60950-1, CSA22.2No.60950-1-07, IEC/EN60950-1, IEC/EN60335-1,IEC/EN61558-2-16,IEC/EN62368-1 CE,VDE, ENEC Mark VDE Approval No. 40034334 UL Approval No.E345767
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with full load >550K Hours @ 230VAC input at 25deg.C and DC output with full load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 30 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 7.5W



## MAIN FEATURES

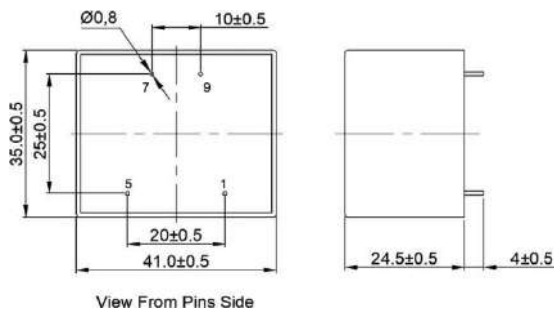
- 7.5W Small Compact Size - PCB Mount
- Single Output
- Output Range : 3.3VDC - 24VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or120VDC - 370VDC
- Very Low Standby Power Consumption < 0.15W
- Better Energetic Efficiency : Meet RequirementsOf Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EI38 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety : Compliance With All Requirements of: IEC/EN61558-2- 16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CAN/CSA22.2No.60950-1-07, CE,VDE, ENEC Mark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

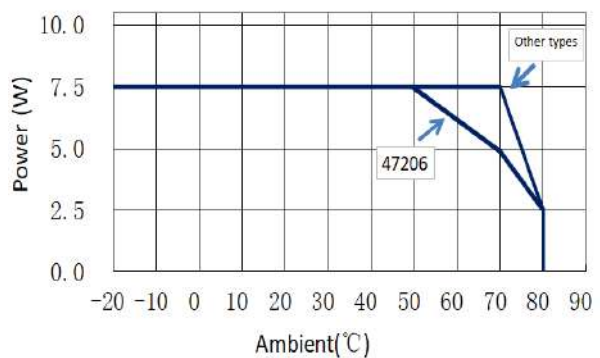
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)
47200	7.5	5	1500	± 2	70	75
47201		9	830			80
47202		12	625			80
47203		15	500			80
47204		18	420			81
47205		24	310			82
47206	7.5	3.3	2270	± 3	50	74

## DIMENSIONS and PINOUT

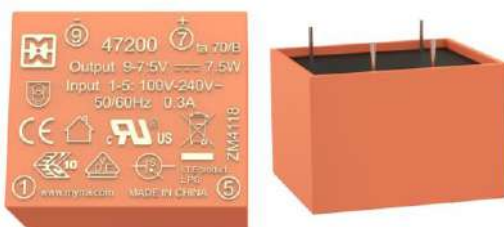
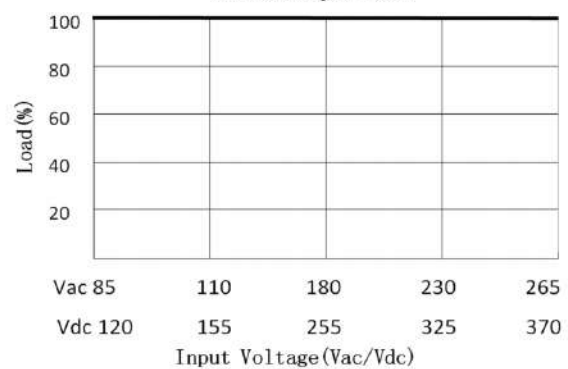
4 pins  
 pins 1 & 5: AC or DC Input  
 pin 7 : DC output +V  
 pin 9 : DC output 0V



## DERATING GRAPH



## Vin VS Output Power



Model: 7.5 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.3A Max@85Vac~265Vac@DC with full load
	Standby Power	0.15W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2% (5V,9V,12V,15V,18V,24V Types) - ± 3%(3.3V Type)
	Output Voltage Line Regulation	± 0.5%
	Output Voltage Load Regulation	± 1%(5V,9V,12V,15V,18V,24V Types) ± 3%(3.3V Type)
	Ripple & Noise	Max 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meet Requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-20°C ~ +70°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meet EN55032,EN55014,FCC part 15, Class B. under 3dB margin
	Conduction	Meet EN55032,EN55014, FCC part 15,Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of UL60950-1,CAN/CSA2.2.No.60950-1-07,IEC/EN60950-1,IEC/EN60335-1,IEC/EN61558-2-16,IEC/EN62368-1  CE,VDE,ENEC Mark VDE Approval No. 40041563 UL Approval No.E345767
Reliability Requirement	MTBF	>200K Hours @ 230VAC input at max operation temperature and DC output with full load >550K Hours @ 230VAC input at 25deg.C and DC output with full load. <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5 hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 56 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 5W to 10W (49000E series)



## MAIN FEATURES

- 5 To 10W Small Compact Size - PCB Mount
- Single Output - Secondary Side Regulated
- Output Range : 3.3VDC - 30VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC -370VDC
- Very Low Standby Power Consumption < 0.1W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

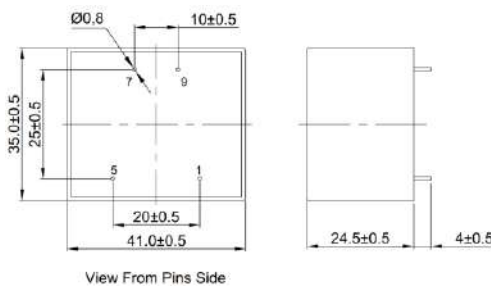
Encapsulated Design And Same Footprint As EI38 Transformer : Upgrade Your Application Without Redesign Of PCB

- Safety : Compliance With All Requirements of IEC/EN61558-2-16, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, CSA C22.2NO.62368-1-14,CE,VDE,ENEC,UKCA Mark.
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

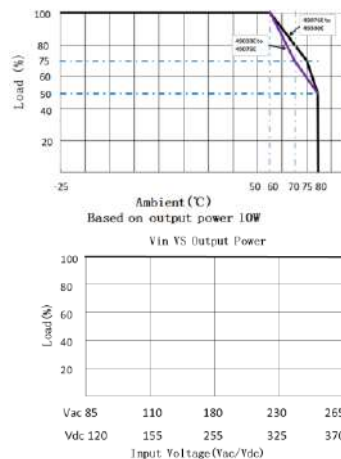
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency(%)
49033E	10	3.3	2700	± 2	60	68
	7.5		2270		70	
	5.0		1500		80	
49050E	10	5	2000		60	73
	7.5		1500		70	
	5.0		1000		80	
49090E	10	9	1100		60	79
	7.5		830		75	
	5.0		550		80	
49120E	10	12	830		60	80
	7.5		625		75	
	5.0		420		80	
49150E	10	15	670		60	81
	7.5		500		75	
	5.0		330		80	
49180E	10	18	560		60	81
	7.5		420		75	
	5.0		280		80	
49240E	10	24	420		60	81
	7.5		310		75	
	5.0		210		80	
49300E	10	30	333		60	81
	7.5		250		75	
	5.0		167		80	

## DIMENSIONS and PINOUT

- 4pins  
 pins 1 & 5: AC or DC Input  
 pin 7: DC output +V  
 pin 9: DC output 0V



## DERATING GRAPH



Model: 5W To 10Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240Vac Or 140VDC-340VDC
	AC Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.35A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2%
	Output Voltage Line Regulation	± 0.5%
	Output Voltage Load Regulation	± 2%
	Ripple & Noise	Max 180mVp-p@ Rated AC input(The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See Table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operations after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Over Temperature Protection	The power supply shall shut down when the junction temperature of PWM controller exceeds the thermal shutdown temperature, typically 140°C ±10°C
Environmental	Operation Temperature	-25°C ~+80°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec.
	Radiation	Meets EN55032,FCC part 15, Class B. under 3dB margin
	Conduction	Meets EN55032,FCC part 15,Class B. under 3dB margin
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1, CE, VDE,UKCA, ENEC Mark UL certificate NO.E345767 VDE certificate NO.40056578
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The power supply is subject to a burn in test for 2~5hours under 230VAC input and DC full load at an ambient temperature of 30~45 degrees C
Net Weight	About 56 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

Myrra reserve the right to change specifications in this document without notice

# ONE OUTPUT 10W



## MAIN FEATURES

- 10W Small Compact Size - PCB Mount
- Single Output
- Output Range : 3.3VDC - 24VDC
- Input Range : 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption < 0.10W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design And Same Footprint As EI48 Transformer : Upgrade Your Application Without Redesign Of PCB

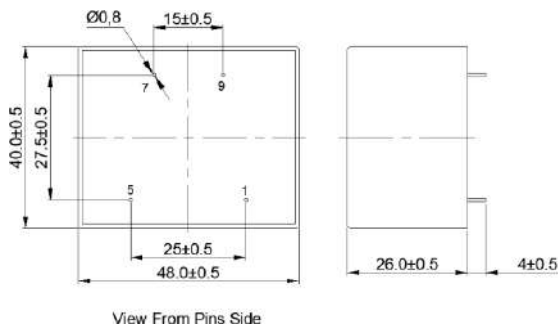
- Safety : Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN60950-1, IEC/EN60335-1, UL60950-1, IEC/EN62368-1, CAN/CSA22.2No.60950-1-07, CE, VDE, ENECMark
- Materials : Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency(%)
47210	10	5	2000	±3	60	73
47211		9	1100	±2		79
47212		12	830			80
47213		15	670			81
47214		18	560			
47215		24	420			
47216		3.3	3000	±4	50	68

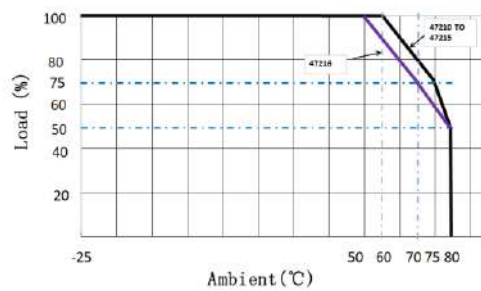
## DIMENSIONS and PINOUT

4 pins

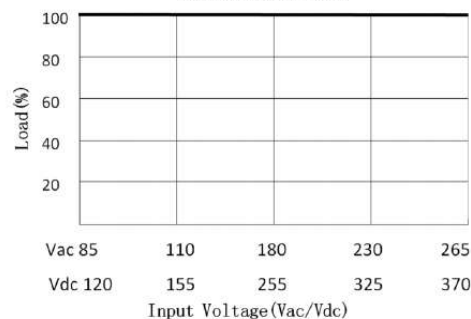
- pins 1 & 5: AC or DC Input
- pin 7 : DC output +V
- pin 9 : DC output 0V



## DERATING GRAPH



## Vin VS Output Power



Model: 10 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.4A Max@85Vac~265Vac@ DC output with full load
	Standby Power	0.1W Max(Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2% (9V,12V,15V,18V,24V Types), ± 3% (5V Type), ± 4%(3.3V Type)
	Output Voltage Line Regulation	± 0.5%(9V,12V,15V,18V,24V Types), ± 1%(3.3V and 5V Types )
	Output Voltage Load Regulation	± 1%(9V,12V,15V,18V,24V Types) ± 3% (5V Type), ± 4%(3.3V Type)
	Ripple & Noise	Max180mVp-p@RatedACinput (Themeasuringwillbeterminatedwitha47uFALE-Capanda 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meets Requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operations after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~ +60°C (see Derating Graph)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-10°C to +35°C
	Storage Humidity	< 75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .
	Radiation	Meeting EN55032,EN55014,FCC part 15, Class B.
	Conduction	Meeting EN55032,EN55014, FCC part 15,Class B.
	Safety Standards	Compliance with all requirements of : UL60950-1, CAN/CSA22.2No.60950-1-07, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1 CE, VDE, ENEC Mark UL certificate NO.E345767 VDE certificate No.40044416
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambienttemperature of 30~45 degrees C
Net Weight	About 80.2 grams per product unit.	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 20W (49000G series)

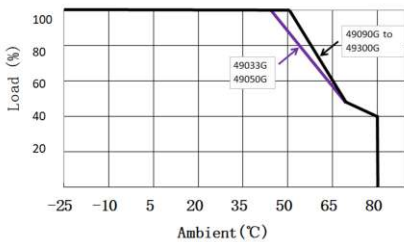


## MAIN FEATURES

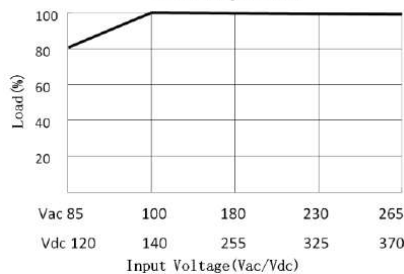
- 20W Small Compact Size - PCB Mount
- Single Output
- Output Range : 3.3VDC - 30VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption  $\leq 0.15W$
- High Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design  
PCB Total Power Solution
- Safety: Compliance With All Requirements of:  
IEC/EN61558-2-16, IEC/EN60335-1,  
UL62368-1, IEC/EN62368-1, CSA C22.2NO.62368-1-14, CE, VDE, ENEC,  
UKCA Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform  
To EN55032, FCC Part 15, CLASS B,  
IEC/EN61000-3-2 CLASS A, EN61000-3-3  
without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3,  
EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8,  
EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency (%)
49033G	13.5	3.3	4100	$\pm 3$	45	75
	5.8		1750	$\pm 3$	80	
49050G	19	5	3800	$\pm 3$	45	78
	8		1600	$\pm 3$	80	
49090G	20	9	2200	$\pm 2$	50	81
	8		890	$\pm 2$	80	
49120G	20	12	1667(1800max.)	$\pm 2$	50	82
	8		670	$\pm 2$	80	
49150G	20	15	1333(1400max.)	$\pm 2$	50	83
	8		530	$\pm 2$	80	
49180G	20	18	1111(1140max.)	$\pm 2$	50	83
	8		450	$\pm 2$	80	
49240G	20	24	833(900max.)	$\pm 2$	50	83
	8		330	$\pm 2$	80	
49300G	20	30	667(720max.)	$\pm 2$	50	83
	8		270	$\pm 2$	80	

DERATING GRAPH

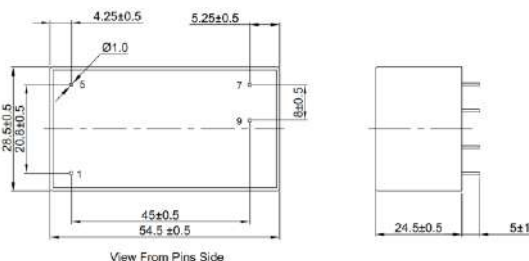


Vin VS Output Power



## DIMENSIONS and PINOUT

- 4 pins
- pins 1 & 5: AC or DC Input
- Pin 7: DC output 0V
- Pin 9: DC output +V



Model: 20 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.5A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meets requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2% (9V, 12V, 15V, 18V, 24V Types) ± 3% (3.3V Type, 5V Type)
	Output Voltage Line Regulation	± 1%
	Output Voltage Load Regulation	± 2% (9V, 12V, 15V, 18V, 24V Types) ± 3% (3.3V Type, 5V Type)
	Ripple & Noise	Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meets requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operations after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~+80°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .
	Radiation	Meeting EN55032, EN55014, FCC part 15, Class B.
	Conduction	Meeting EN55032, EN55014, FCC part 15, Class B.
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1, CE,VDE,ENEC,UKCA Mark UL certificate NO.E345767 VDE certificate NO. 400xxxx
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load; >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Mechanical	Physical Size	The units do not including PINs of input and output , and dimension is : (L)54.5*(W)28.5*(H)24.5± 0.5mm (see appearance drawing)
	Net Weight	Approximately 65 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

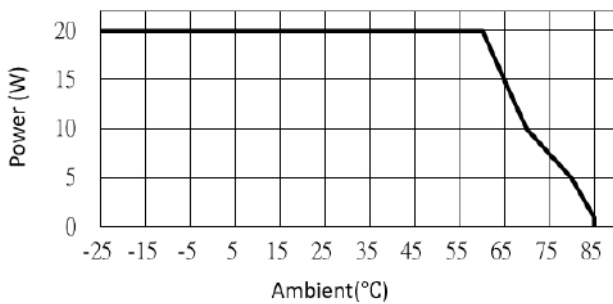
# ONE OUTPUT 20W

## MAIN FEATURES

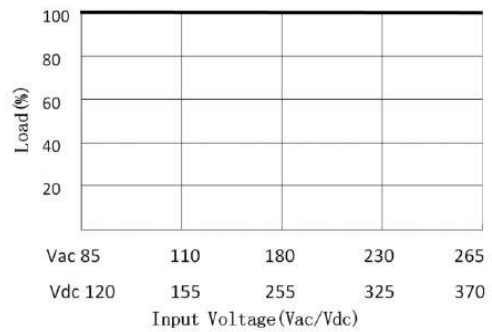
- 20W Small Compact Size - PCB Mount
- Single Output
- Output Range : 3.3VDC - 24VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption  $\leq 0.15W$
- Better Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design  
PCB Total Power Solution
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN62368-1, IEC/EN60335-1, UL62368-1, CSA C22.2NO.62368-1-14, CE,VDE,ENEC Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3,EN61000-4-4,EN61000-4-5, EN61000-4-6,EN61000-4-8,EN61000-4-11

Part Number	Output Power(W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max.Operating Ambient (°C)	Min. Part Efficiency (%)
47220	15	3.3	4500	±4	50	82
47221	20	5	4000			
47222		9	2200			
47223		12	1700			
47224		15	1400			
47225		18	1100			
47226		24	840	±3	60	85

DERATING GRAPH 47223 Typ.

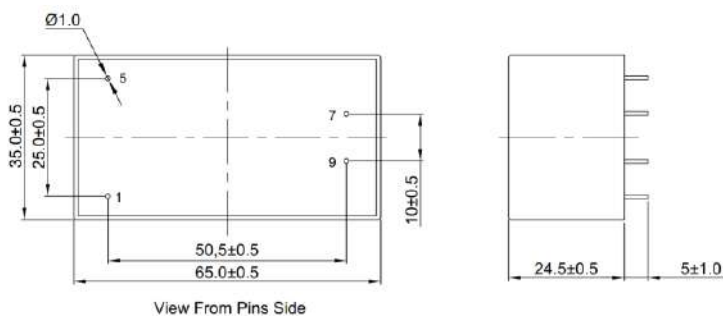


Vin VS Output Power



## DIMENSIONS and PINOUT

4 pins  
pins 1 & 5: AC or DC Input  
pin 7 : DC output +V  
pin 9 : DC output OV



@ pending certification

Model: 20 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.6A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meets requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 4% (3.3V Type, 5V Type)
	Output Voltage Line Regulation	± 2% (9V, 12V, 15V, 18V, 24VTypes) ± 3% (3.3V and 5V Types )
	Output Voltage Load Regulation	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 4% (3.3V Type, 5V Type)
	Ripple & Noise	Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meets requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatically protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~+50°C (operation temp. can be extended more than +50°C ,Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .
	Radiation	Meeting EN55032, FCC part 15, Class B
	Conduction	Meeting EN55032, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1,CE,VDE,ENEC MARK
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load; >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Mechanical	Physical Size	The units do not including PINs of input and output , and dimension is : (L)65*(W)35*(H)24.5± 0.5mm (see appearance drawing)
	Net Weight	Approximately 92 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

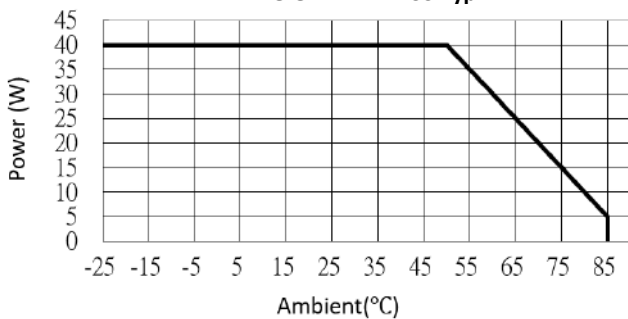
# ONE OUTPUT 40W

## MAIN FEATURES

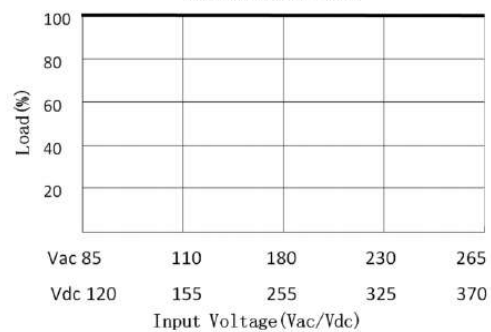
- Small Compact Size - PCB Mount
- Single Output
- Output Range : 5VDC - 24VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption  $\leq 0.15W$
- Better Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design PCB Total Power Solution
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN62368-1, IEC/EN60335-1, UL62368-1, CSA C22.2NO.62368-1-14, CE, VDE, ENEC Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (mA)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency (%)
47231	30	5	6000	±5	50	82
47232	36	9	4000	±3		83
47233	40	12	3300			84
47234		15	2700			
47235		18	2200			
47236		24	1700			

DERATING GRAPH 47233 Typ.



Vin VS Output Power



## DIMENSIONS and PINOUT

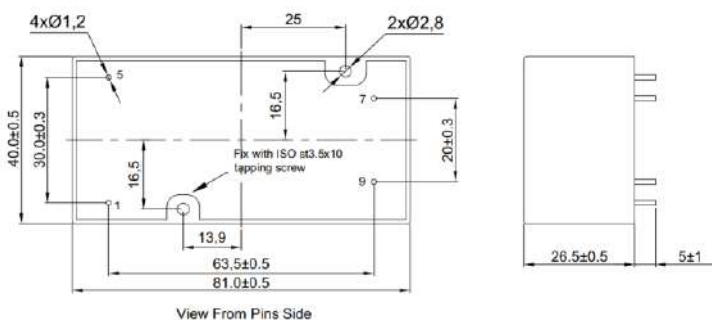
4 pins

Pins 1 & 5: AC or DC Input

Pin 7 : DC output +V

pin 9 : DC output 0V

Plastic fixture for screw fixing(optional)



Model: 40 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.0A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 5% (5V Type)
	Output Voltage Line Regulation	± 1% (9V, 12V, 15V, 18V, 24V Types) ± 2% ( 5V Types )
	Output Voltage Load Regulation	± 3%(9V,12V,15V,18V,24V Types) ± 5% (5V Type)
	Ripple & Noise	Max 200mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Protection Characteristics	Over Current Protection
Output Short Circuit Protection		The power supply shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~ + 50°C (operation temp. can be extended more than +50°C ,Refer to “Derating Graph”)
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 4000Vac 5mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, Class B
	Conduction	Meeting EN55032, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1,CE,VDE,ENEC MARK
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 150 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

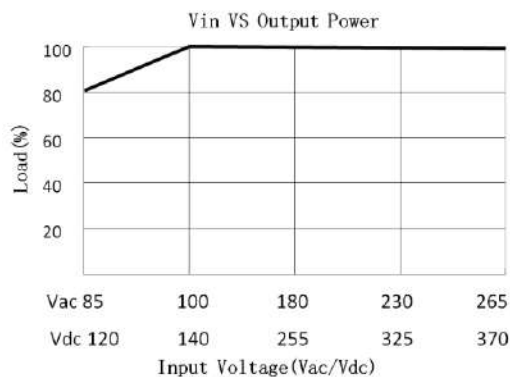
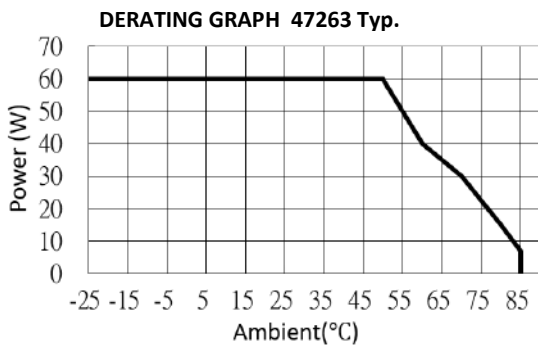
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# ONE OUTPUT 60W

## MAIN FEATURES

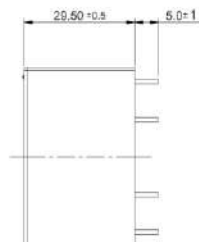
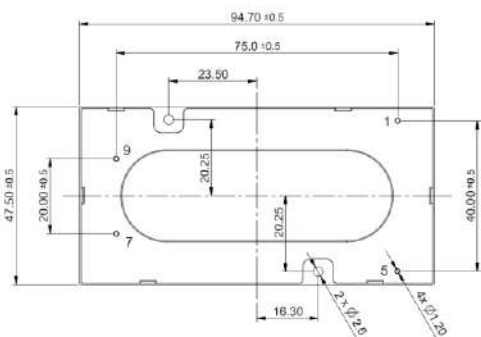
- Small Compact Size - PCB Mount
- Single Output
- Output Range : 5VDC - 24VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption  $\leq 0.15W$
- Better Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design PCB Total Power Solution
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN62368-1, IEC/EN60335-1, UL62368-1, CSA C22.2NO.62368-1-14, CE,VDE,ENEC Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (A)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency (%)
47261	50	5	10	$\pm 5$	50	80
47262	60	9	6.6	$\pm 3$		85
47263		12	5.0			
47264		15	4.0			
47265		18	3.3			
47266		24	2.5			



## DIMENSIONS and PINOUT

4 pins  
 pins 1 & 5: AC or DC Input  
 pin 7 : DC output +V  
 pin 9 : DC output OV



Model: 60 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.5A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meet Requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 5% (5V Type)
	Output Voltage Line Regulation	± 3% (9V, 12V, 15V, 18V, 24V Types) ± 5% ( 5V Types )
	Output Voltage Load Regulation	± 3%(9V,12V,15V,18V,24V Types) ± 5% (5V Type)
	Ripple & Noise	Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operation after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~ + 50°C (operation temp. can be extended more than +50°C ,Refer to “Derating Graph”)
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 4000Vac 5mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, Class B
	Conduction	Meeting EN55032, FCC part 15, Class B
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1, IEC/EN61558-2-16, IEC/EN62368-1,CE,VDE,ENEC Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 245 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

Myrra reserve the right to change specifications in this document without notice



# ONE OUTPUT 20 to 60W (49000J series)



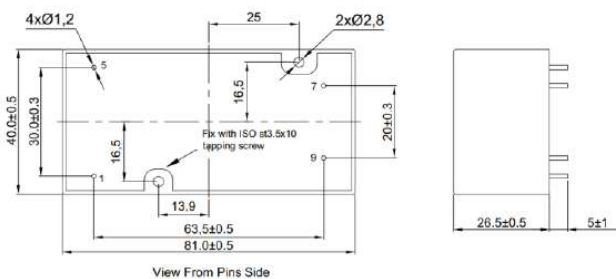
## MAIN FEATURES

- 20 to 60W Small Compact Size - PCB Mount
- Single Output
- Output Range : 5.0VDC - 30VDC
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 370VDC
- Very Low Standby Power Consumption  $\leq 0.15W$
- High Energetic Efficiency: Meet Requirements Of Energy Star And EC Code Of Conduct
- Encapsulated Design  
PCB Total Power Solution
- Safety: Compliance With All Requirements of: IEC/EN61558-2-16, IEC/EN60335-1, UL62368-1, IEC/EN62368-1, CSA C22.2NO.62368-1-14, CE, VDE, ENEC, UKCA Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

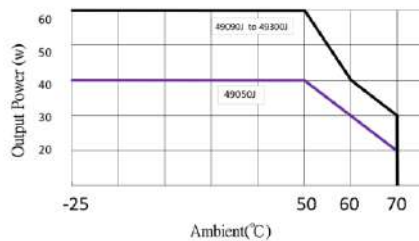
Part Number	Output Power (W)	Output Voltage (Vdc)	Output Current (A)	Output Voltage Accuracy (%)	Max. Operating Ambient (°C)	Min. Part Efficiency(%)
49050J	40	5	8.0	±3	50	82
	30		6.0		60	
	20		4.0		70	
49090J	60	9	6.6	±2	50	84
	40		4.4		60	
	30		3.3		70	
49120J	60	12	5.0		50	85
	40		3.3		60	
	30		2.5		70	
49150J	60	15	4.0		50	85
	40		2.7		60	
	30		2.0		70	
49180J	60	18	3.3		50	85
	40		2.2		60	
	30		1.7		70	
49240J	60	24	2.5		50	85
	40		1.7		60	
	30		1.25		70	
49300J	60	30	2.0	50	85	
	40		1.3	60		
	30		1.0	70		

## DIMENSIONS and PINOUT

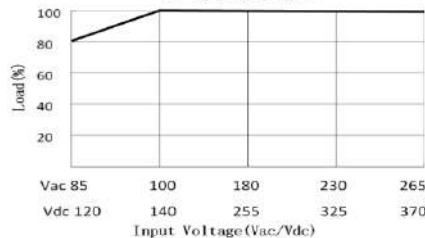
pins 1 & 5: AC or DC Input  
pin 7: DC output +V  
pin 9: DC output 0V



Power Derating Graph<sup>①</sup>



Vin VS Output Power



Model: 20 to 60 Watt		Specification
AC Input Characteristics	Rated input Voltage	100~240Vac Or 140VDC-340VDC
	Input Voltage Range	85~265Vac Or 120VDC-370VDC
	AC Input Frequency	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.5A Max@85Vac~265Vac@DC output with full load
	Standby Power	0.15W Max (Meets requirements Of Energy Star And EC Code Of Conduct)
DC Output Characteristics	Output Voltage Accuracy	± 2% (9V, 12V, 15V, 18V, 24V Types) ± 3% (5V Type)
	Output Voltage Line Regulation	± 0.5%
	Output Voltage Load Regulation	± 1% (9V, 12V, 15V, 18V, 24V Types) ± 2% 5V Type)
	Ripple & Noise	Max 180mVp-p @Rated AC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Efficiency	Meets requirements Of Energy Star And EC Code Of Conduct
Protection Characteristics	Over Current Protection	The power supply shall automatic protection. The power supply shall auto-recovery normal operations after the deformation is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur, no safety hazard
Environmental	Operation Temperature	-25°C ~+70°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary: 4000Vac 5mA, 3 sec .
	Radiation	Meeting EN55032, EN55014, FCC part 15, Class B.
	Conduction	Meeting EN55032, EN55014, FCC part 15, Class B.
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA C22.2NO.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN62368-1, CE,VDE,ENEC,UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at max operation temperature and DC output with full load; >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Mechanical	Physical Size	The units do not including PINs of input and output , and dimension is : (L)81*(W)40*(H)26.5± 0.5mm (see appearance drawing)
	Net Weight	Approximately 150 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

# ENCAPSULATED DC-DC CONVERTER 1W to 25W

## 50000 Series



MYRRA 50000 series are 1W to 25W encapsulated type DC-DC converter with international standard pins, a high efficiency up to 90%, wide working temperature range -40°C ~ +105°C, 1.5KV~ 3.0KVdc I/O isolation voltage; Compliance to EN55032 radiated Class A/B, continuous-mode short circuit protection, etc. This series converters account for different input voltage 4.5~5.5V, 10.8~13.2V, 21.6~26.4V, 6.0V~36V and 18~75V and various output voltage 3.3V/5V/9V/12V/15V and 24V for single output, which are suitable for all kinds of systems, such as industrial control, telecommunication field, distributed power architecture, and so on.

### Applications :

- Instrument
- Industrial control facility
- Wireless network
- Telecom/datacom system
- Analyzer
- Detector
- Data switch

### MAIN FEATURES

- Wide input voltage range
- Operating Altitude Up To 5000m
- Low cost/High Reliability
- 1500V To 3000Vdc I/O isolation voltage
- Operating Temperature Range -40°C To +105°C
- Industry Standard Pinout - PCB Mount
- Protections: Short circuit/Over load
- Remote ON/OFF control and Trimming Output

### SAFETY STANDARDS

Meets all requirements of:

- IEC/EN62368-1
- UL62368-1
- CSA 22.2 N°62368-1-14
- IEC60601-1
- UL 94-V0

### EMC STANDARDS

Conducted and radiated emissions conform to

- EN55032, FCC Part15 Class A/B
- IEC/EN 61000-3-x

Immunity conform to

- EN 61000-4-x

# ONE OUTPUT 1W



## MAIN FEATURES

- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- 3000Vdc I/O Isolation voltage
- Operating Temperature -40°C To +105°C
- Industry Standard Pinout
- Low Cost/High Reliability

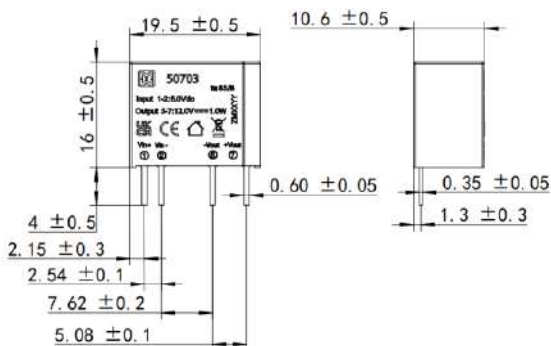
- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, IEC60601-1, CSA C22.2NO.62368-1-14, CE, UKCA Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power(W)	Output Voltage (VDC)	Output Current (mA)max/min	Input Current Typ.(Full load/No load) (mA)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50700	1	3.3	303/30	270/8	105	72	4.5-5.5
50701	1	5	200/20	244/8	105	80	
50702	1	9	111/12	241/8	105	80	
50703	1	12	84/9	241/12	105	80	
50704	1	15	67/7	241/18	105	80	
50705	1	24	42/4	241/18	105	83	
50706	1	5	200/20	208/8	105	72	10.8 –13.2
50707	1	12	84/9	201/8	105	81	10.8–13.2
50708	1	5	200/20	104/8	105	72	21.6 –26.4

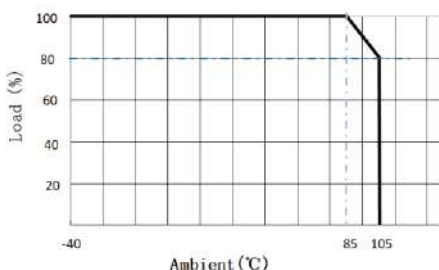
## DIMENSIONS and PINOUT

4 pins

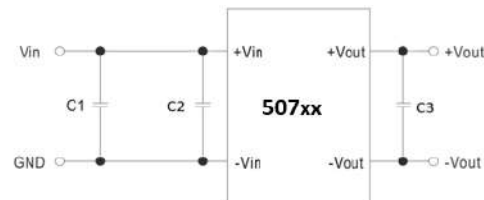
- Pin 1: DC Input +Vin
- Pin 2: DC Input -Vin
- Pin 5 : DC Output -Vout
- Pin 7 : DC Output +Vout



## DERATING GRAPH



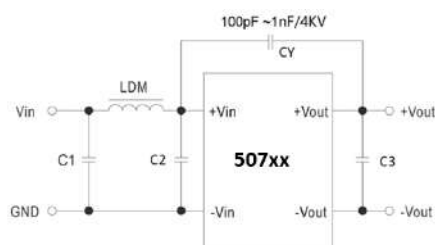
## TYPICAL APPLICATION



- C1: 4.7uF/16V@5Vdc Vin;
- : 2.2uF/25V@12Vdc Vin;
- : 1.0uF/25V@24Vdc Vin;
- C2: No component
- C3:
- 3.3Vdc, 5.0Vdc output types: 10uF/16V;
- 9.0Vdc,12Vdc output types: 2.2uF/25V;
- 15Vdc,24Vdc output types: 1uF/50V;



## EMC SUGGESTION



- C1,C2: 4.7uF/25V
- CY: 100pF ~ 1nF/4kv
- LDM: 4.7 to 10uH
- C3: 1uF to 10uF/16V

Model: 1 Watt		Specification
DC Input Characteristics	Rated input Voltage	5.0VDC :PN50700 to 50705; 12VDC :PN50706 to 50707; 24VDC: PN50708
	Input Voltage Range	4.5 - 5.5VDC:P/N50700 to 50705; 10.8 -13.2VDC :PN50706 to 50707; 21.6 - 26.4VDC: PN50708
	Input Current	See table
	Protection (Fuse recommended)	500mA
	Input Filter	Capacitor type
DC Output Characteristics	Output Voltage Accuracy	Refer to datasheet document
	Output Voltage Line Regulation	Refer to datasheet document
	Output Voltage Load Regulation	Refer to datasheet document
	Ripple & Noise	Max 100mVp-p @Rated DC input (The measuring will be terminated with a 22uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	300KHz typ.@5VDC input type 280KHz typ.@ 12V/24VDC input type
Protection Characteristics	Over Current Protection	The DC converter shall automatically protect against over current. The DC converter shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Environmental	Operation Temperature	-40°C ~ + 105°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 3000Vdc 1mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, IEC60601-1, CE,UKCA Mark
	Isolation Capacitance	20pF Max. @100KHz/0.1V,
Reliability Requirement	MTBF	>200K Hours @ at 85deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~ 5 hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 2.5 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

# ONE OUTPUT 2W



## MAIN FEATURES

- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- 3000Vdc I/O Isolation voltage
- Operating Temperature -40°C To +105°C
- Industry Standard Pinout
- Low Cost/High Reliability

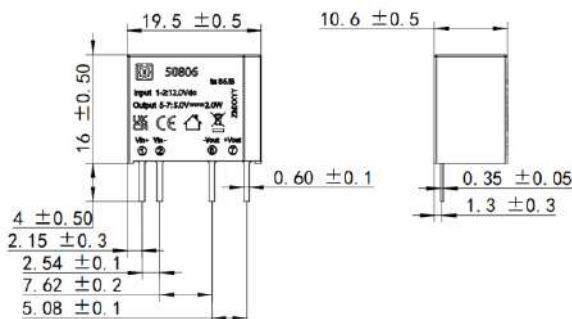
- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, IEC60601-1, CSA C22.2NO.62368-1-14, CE, UKCA Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power(W)	Output Voltage (VDC)	Output Current (mA)max/min	Input Current Typ.(Full load/No load) (mA)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50800	1.32	3.3	400/40	534/8	105	75	4.5-5.5
50801	2	5	400/40	477/8	105	82	
50802	2	9	222/22	471/8	105	83	
50803	2	12	167/17	471/8	105	83	
50804	2	15	133/13	466/8	105	83	
50805	2	24	83/8	466/8	105	84	
50806	2	5	400/40	208/8	105	80	10.8 –13.2
50807	2	12	167/17	201/8	105	82	10.8 –13.2
50808	2	5	400/40	104/8	105	80	21.6 –26.4

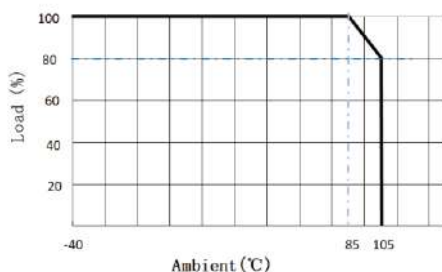
## DIMENSIONS and PINOUT

4 pins

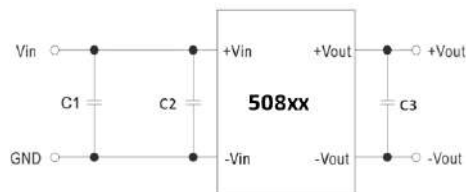
- Pin 1: DC Input +Vin
- Pin 2: DC Input -Vin
- Pin 5: DC Output -Vout
- Pin 7: DC Output +Vout



## DERATING GRAPH



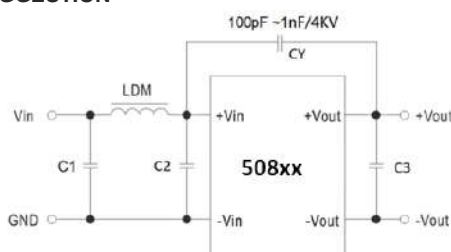
## TYPICAL APPLICATION



- C1: 10uF/16V@5Vdc Vin;  
2.2uF/25V@12Vdc Vin;  
1.0uF/25V@24Vdc Vin;
- C2: No component
- C3:  
3.3Vdc, 5.0Vdc output types: 10uF/16V;  
9.0Vdc, 12Vdc output types: 2.2uF/25V;  
15Vdc, 24Vdc output types: 1uF/50V;



## EMC SUGGESTION



- C1, C2: 4.7uF/25V
- CY: 100pF ~ 1nF/4kV
- LDM: 4.7 to 10uH
- C3: 1uF to 10uF/16V

Model: 2 Watt		Specification
DC Input Characteristics	Rated input Voltage	5.0VDC :PN50800 to 50805; 12VDC :PN50806 to 50807; 24VDC: PN50808
	Input Voltage Range	4.5 - 5.5VDC:P/N50800 to 50805; 10.8 -13.2VDC :PN50806 to 50807; 21.6 - 26.4VDC: PN50808
	Input Current	See table
	Protection (Fuse recommended)	500mA
	Input Filter	Capacitor type
DC Output Characteristics	Output Voltage Accuracy	Refer to datasheet document
	Output Voltage Line Regulation	Refer to datasheet document
	Output Voltage Load Regulation	Refer to datasheet document
	Ripple & Noise	Max 200mVp-p @Rated DC input (The measuring will be terminated with a 22uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	220KHz typ.@5VDC input type 260KHz typ.@ 12V/24VDC input type
Protection Characteristics	Over Current Protection	The DC converter shall automatically protect against over current. The DC converter shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Environmental	Operation Temperature	-40°C ~ + 105°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 3000Vdc 1mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, IEC60601-1, CE,UKCA Mark
	Isolation Capacitance	20pF Max. @100KHz/0.1V,
Reliability Requirement	MTBF	>200K Hours @ at 85deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~ 5hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 2.5 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

# ONE OUTPUT 2.5W NON-ISOLATED



## MAIN FEATURES

- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- Pin-out compatible with LM78xx/LM79xx Linear regulators
- Operating Temperature -40°C To +85°C
- Industry Standard Pinout
- Low Cost/High Reliability

- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, CSA C22.2NO.62368-1-14, CE,UKCA Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)	Capacitor Load Max.(uF)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50200	1.65	3.3	500	680	85	84	6.0 ~36 (12V typ.)
50201	2.5	5	500	680	85	89	8.0 ~36 (12V typ.)
50202	2.5	9	277	680	85	92	13 ~36 (24V typ.)
50203	2.5	12	210	680	85	92	16 ~36 (24V typ.)
50204	2.5	15	166	680	85	94	20 ~36 (24V typ.)
50205	2.5	24	104	680	85	95	28 ~36 (32V typ.)
50206	2.5	-5	680	85	85	8.0 ~36 (12V typ.)	
50207	2.5	-12	210	680	85	88	8.0 ~36 (12V typ.)

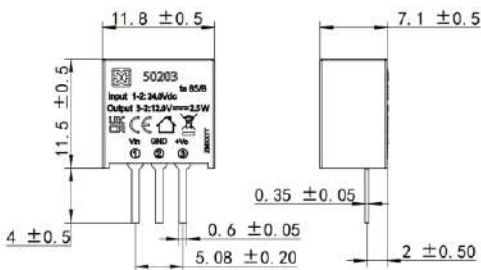
## DIMENSIONS and PINOUT

50200 to 50205:

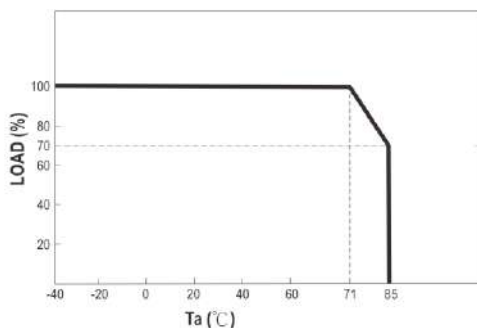
- Pin 1: DC Input +Vin
- Pin 2: DC Input GND
- Pin 3 : DC Output +Vout

50206 to 50207:

- Pin 1: DC Input +Vin
- Pin 2: DC Input -Vout
- Pin 3 : DC Output GND

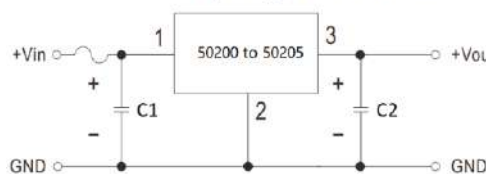


## Derating Graph

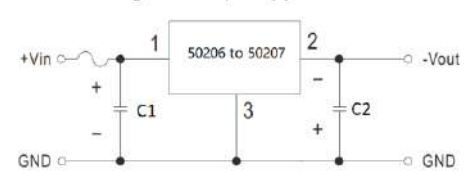


## TYPICAL APPLICATION

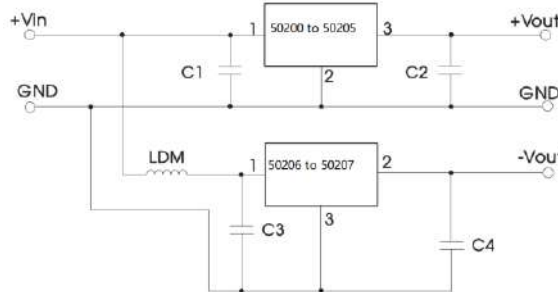
### Positive output application circuit



### Negative output application circuit



### Positive and negative output paralleling application circuit

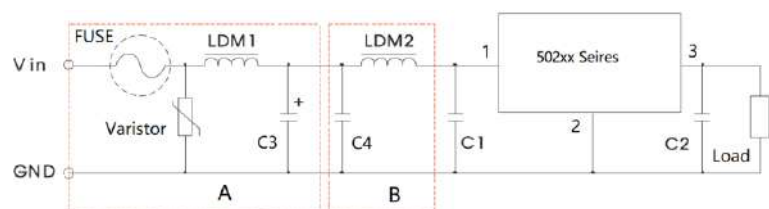


### External capacitor:

- C1,C3: 10uF/50V
- C2,C4: 3.3Vdc, 5.0Vdc output types: 22uF/10V; 9.0Vdc,15Vdc output types: 22uF/25V; 24Vdc output types: 22uF/50V;

- In using parallel application circuit, input voltage range should be taken notice of and a 10uH LDM component is recommended to reduce the interference.

## EMC SUGGESTION



LDM1,LDM2: 10uH to 100uH; C1: 10uF/50V; C2: 22uF/10V to 50V; C3:680uF/50V; C4: 4.7uF/50V; Varistor: 10D470K to 20D470K; FUSE:1A slow-blow type; Circuit A part: used for EMS tests, circuit B part: used for EMI tests.

@ pending certification



Model: 2.5 Watt		Specification
DC Input Characteristics	Rated input Voltage	See table
	Input Voltage Range	36VDC max. (see table)
	Input Current	See table
	Protection (Fuse recommended)	1000mA slow-blow type for all models
	Input Filter	Capacitor type
DC Output Characteristics	Output Voltage Accuracy	Refer to datasheet document
	Output Voltage Line Regulation	Refer to datasheet document
	Output Voltage Load Regulation	Refer to datasheet document
	Ripple & Noise	Max 100mVp-p @Rated DC input (The measuring will be terminated with a 22uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	1MHz typ.
Protection Characteristics	Over Current Protection	The DC converter shall automatically protect against over current. The DC converter shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Environmental	Operation Temperature	-40°C ~ +85°C (Refer to "Derating Graph")
	Operation Humidity	10~90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Non-isolation
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, CE,UKCA Mark
Reliability Requirement	MTBF	>200K Hours @ at 85deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~5 hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 1.5 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

Myrra reserve the right to change specifications in this document without notice

# ONE OUTPUT 1W



## MAIN FEATURES

- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- 1500Vdc I/O Isolation voltage
- Operating Temperature -40°C To +105°C
- Industry Standard Pinout
- Low Cost/High Reliability

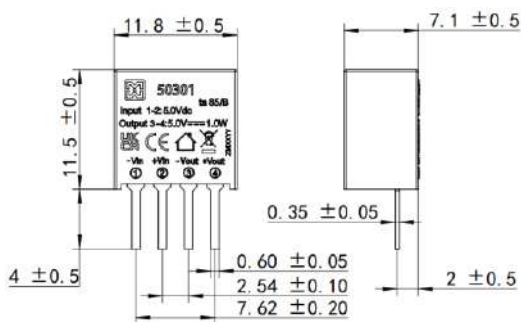
- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, IEC60601-1, CSA C22.2NO.62368-1-14, CE, UKCA Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)max/min	Input Current Typ.(Full load/No load) (mA)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50300	1	3.3	303/30	271/8	105	79	4.5-5.5
50301	1	5	200/2	244/8	105	82	
50302	1	9	111/11	241/12	105	85	
50303	1	12	83/8	241/12	105	82	
50304	1	15	67/7	241/12	105	82	
50305	1	24	42/4	241/18	105	84	

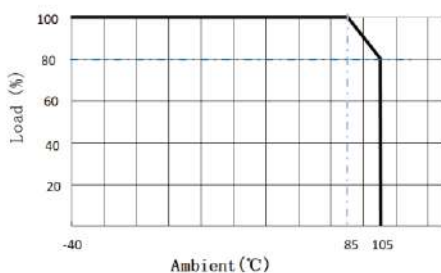
## DIMENSIONS and PINOUT

4 pins

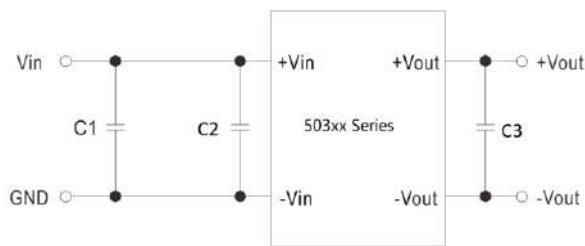
- Pin 1: DC Input -Vin
- Pin 2: DC Input +Vin
- Pin 3 : DC Output -Vout
- Pin 4 : DC Output +Vout



## DERATING GRAPH



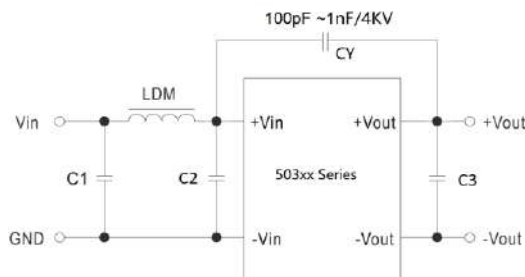
## TYPICAL APPLICATION



C1,C2: 4.7uF/25V  
C3:

3.3Vdc, 5.0Vdc output types: 10uF/16V;  
9.0Vdc,12Vdc output types: 2.2uF/25V;  
15Vdc,24Vdc output types: 1uF/50V;

## EMC SUGGESTION



C1,C2: 4.7uF/25V  
CY: 100pF ~ 1nF/4kv  
LDM: 6.8uH  
C3: 1uF to 10uF/16V



Model: 1 Watt		Specification
DC Input Characteristics	Rated input Voltage	5.0VDC
	Input Voltage Range	4.5 - 5.5VDC
	Input Current	See table
	Protection (Fuse recommended)	500mA
	Input Filter	Capacitor type
DC Output Characteristics	Output Voltage Accuracy	Refer to datasheet document
	Output Voltage Line Regulation	Refer to datasheet document
	Output Voltage Load Regulation	Refer to datasheet document
	Ripple & Noise	Max 100mVp-p @Rated DC input (The measuring will be terminated with a 22uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	270KHz Typ.
Protection Characteristics	Over Current Protection	The DC converter shall automatically protect against over current. The DC converter shall auto-recover normal operation after the fault condition is removed. No excessive heat, odour, or plastic deformation shall occur with no safety hazard during the fault
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Environmental	Operation Temperature	-40°C ~ + 105°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 1500Vdc 1mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, IEC60601-1, CE,UKCA Mark
	Isolation Capacitance	20pF Max. @100KHz/0.1V,
Reliability Requirement	MTBF	>200K Hours @ at 85deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~ 5hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 1.5 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 15W



## MAIN FEATURES

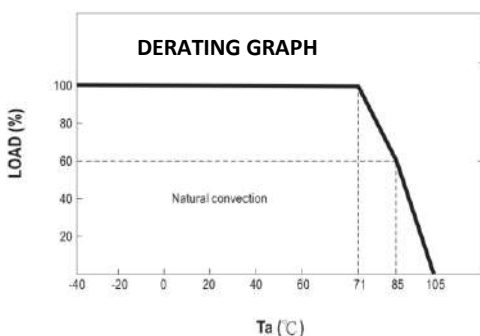
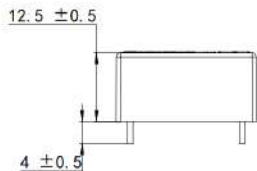
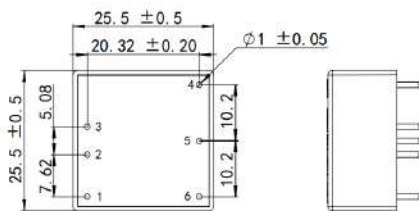
- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- 1500Vdc I/O Isolation voltage
- Operating Temperature -40°C To +85°C
- DIP 1"x 1" Package With Industry Standard Pinout
- Low Cost/High Reliability
- Remote ON/OFF Control and Trimming Output

- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, IEC60601-1, CSA C22.2NO.62368-1-14, CE, UKCA Mark.
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

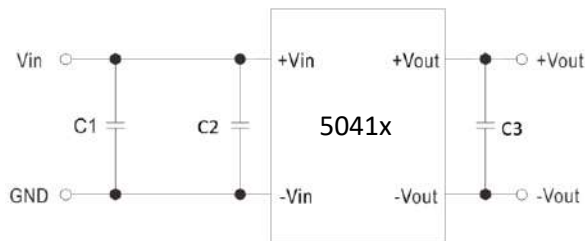
Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)max/min	Input Current Typ.(Full load/No load) (mA)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50410	10	3.3	3000	280/70	85	81	Normal 48 (18 to 75)
50411	15	5	3000	380/80	85	85	
50412	15	9	1670	380/30	85	89	
50413	15	12	1250	380/25	85	89	
50414	15	15	1000	380/25	85	88	
50415	15	24	625	380/25	85	88	

## DIMENSIONS and PINOUT

- Pin 1: Ctrl
- Pin 2: DC Input -Vin
- Pin 3: DC Input +Vin
- Pin 4 : DC Output +Vout
- Pin 5: Trim
- Pin 6: DC Output -Vout



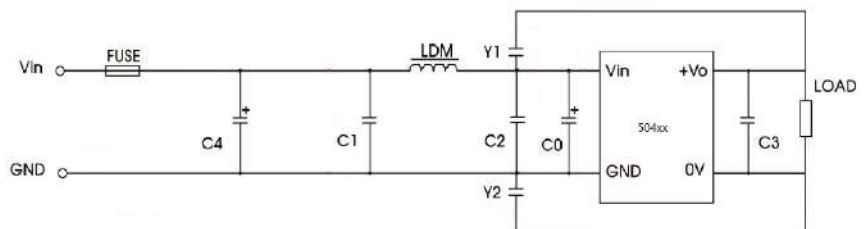
## TYPICAL APPLICATION



- C1: 100uF/50V  
 C3:  
 3.3Vdc, 5.0Vdc output types: 680uF/10V;  
 9.0Vdc, 12Vdc output types: 470uF/25V;  
 15Vdc, 24Vdc output types: 220uF/35V;



## EMC SUGGESTION (Required external component to meet EN55032 radiated Class B emission)



- C4, C0: 330uF/100V  
 C1, C2: 4.7uF/100V (MLCC)  
 Y1, Y2: 100pF ~ 1nF/3kv (MLCC)  
 LDM: 2.2 to 10uH  
 C3:  
 3.3Vdc, 5.0Vdc output types: 680uF/10V;  
 9.0Vdc, 12Vdc output types: 470uF/25V;  
 15Vdc, 24Vdc output types: 220uF/35V;

Model: 15 Watt		Specification
DC Input Characteristics	Rated input Voltage	48VDC
	Input Voltage Range	18- 75VDC
	Input Current	See table
	Protection (Fuse recommended)	Fuse recommended: 1.5A delay time type
	Input Filter	Pi type
	Input U.V.P.	12Vdc min. / 15.5Vdc max.
DC Output Characteristics	Output Voltage Accuracy	±2%
	Output Voltage Line Regulation	±0.5%
	Output Voltage Load Regulation	±1%
	Ripple & Noise	Max 100mVp-p @Rated DC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	250KHz Typ.
Protection Characteristics	Over Current Protection	110% to 180% rated output power Protection type: Recovers automatically after fault condition is removed.
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Remote Control	Ctrl Pin to -Vin Pin	DC/DC convertor ON: Ctrl Pin to -Vin Pin >5.5-75Vdc or open circuit DC/DC convertor OFF: Ctrl Pin to -Vin Pin <1.2Vdc or short
Environmental	Operation Temperature	-40°C ~ + 85°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 1500Vdc 1mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, IEC60601-1, CE,UKCA Mark
	Isolation Capacitance	20pF Max. @100KHz/0.1V,
Reliability Requirement	MTBF	>200K Hours @ at 71deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~ 5hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 20 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 25W



## MAIN FEATURES

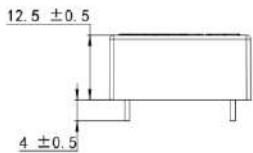
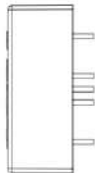
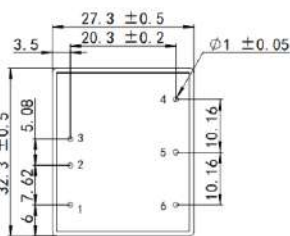
- Small Compact Size - PCB Mount
- Output Range : 3.3VDC - 24VDC
- 1500Vdc I/O Isolation voltage
- Operating Temperature -40°C To +85°C
- Industry Standard Pinout
- Low Cost/High Reliability
- Remote ON/OFF Control and Trimming Output

- Safety: Compliance With All Requirements of IEC/EN62368-1, UL62368-1, IEC60601-1, CSA C22.2NO.62368-1-14, CE, UKCA Mark
- Materials: Uses UL 94-V0 Plastic And Resin
- EMC : Conducted And Radiated Emission conform To EN55032, FCC Part 15, CLASS A, IEC/EN61000-3-2 CLASS A, EN61000-3-3
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

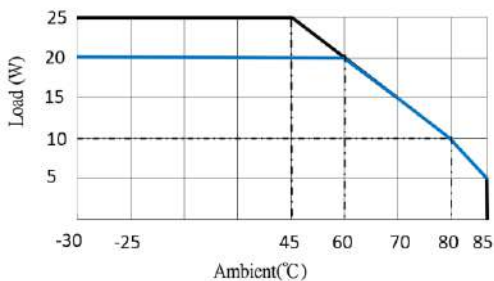
Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)max/min	Input Current Typ.(Full load/No load) (mA)	Max.Operating Ambient (°C)	Efficiency Typical (%)	Input Range (Vdc)
50430	15	3.3	4500	480/10	85	81	Normal 48 (18 to 75)
50431	25	5	5000	580/10	85	85	
50432	25	9	2770	580/10	85	89	
50433	25	12	2100	580/10	85	89	
50434	25	15	1670	580/10	85	88	
50435	25	24	1040	580/10	85	88	

## DIMENSIONS and PINOUT

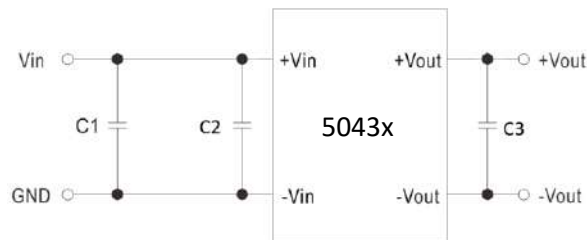
- Pin 1: Ctrl
- Pin 2: DC Input -Vin
- Pin 3: DC Input +Vin
- Pin 4 : DC Output +Vout
- Pin 5: Trim
- Pin 6: DC Output -Vout



Power Derating Graph

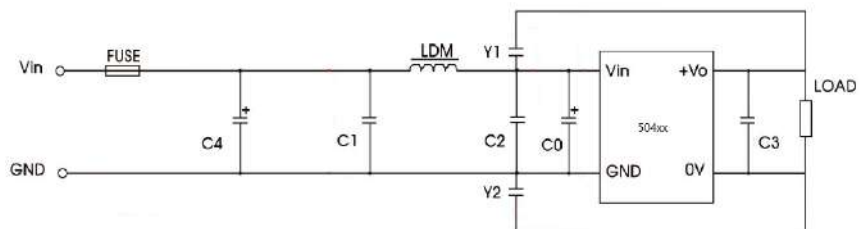


## TYPICAL APPLICATION

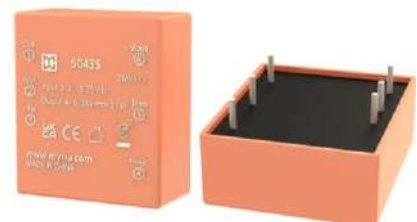


- C1: 100uF/50V
- C3: 3.3Vdc, 5.0Vdc output types: 680uF/10V; 9.0Vdc, 12Vdc output types: 470uF/25V; 15Vdc, 24Vdc output types: 220uF/35V;

**EMC SUGGESTION** (Required external component to meet EN55032 radiated Class B emission)



- C4, C0: 330uF/100V
- C1, C2: 4.7uF/100V (MLCC)
- Y1, Y2: 100pF ~ 1nF/3kv (MLCC)
- LDM: 2.2 to 10uH
- C3: 3.3Vdc, 5.0Vdc output types: 680uF/10V; 9.0Vdc, 12Vdc output types: 470uF/25V; 15Vdc, 24Vdc output types: 220uF/35V;



@ pending certification

Model: 25 Watt		Specification
DC Input Characteristics	Rated input Voltage	48VDC
	Input Voltage Range	18- 75VDC
	Input Current	See table
	Protection (Fuse recommended)	Fuse recommended: 1.5A delay time type
	Input Filter	Pi type
	Input U.V.P.	12Vdc min. / 15.5Vdc max.
DC Output Characteristics	Output Voltage Accuracy	±2%
	Output Voltage Line Regulation	±0.5%
	Output Voltage Load Regulation	±1%
	Ripple & Noise	Max 150mVp-p @Rated DC input (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth)
	Switching Frequency	250KHz Typ.
Protection Characteristics	Over Current Protection	110% to 180% rated output power Protection type: Recovers automatically after fault condition is removed.
	Output Short Circuit Protection	The DC converter shall withstand a continuous output short without damage; The DC converter shall resume normal operation after the short is removed, no excessive heat, odour, or plastic deformation shall occur with no safety hazard
Remote Control	Ctrl Pin to -Vin Pin	DC/DC convertor ON: Ctrl Pin to -Vin Pin >5.5-75Vdc or open circuit DC/DC convertor OFF: Ctrl Pin to -Vin Pin <1.2Vdc or short
Environmental	Operation Temperature	-40°C ~ + 85°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Primary to Secondary : 1500Vdc 1mA, 3 sec.
	Radiation	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Conduction	Meeting EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ).
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA C22.2NO.62368-1-14 , IEC/EN62368-1, IEC60601-1, CE,UKCA Mark
	Isolation Capacitance	20pF Max. @100KHz/0.1V,
Reliability Requirement	MTBF	>200K Hours @ at 65deg.C and DC output with full load >700K Hours @ at 25deg.C and DC output with full load <i>Calculated in accordance with MIL-HDBK-217-F2</i>
	Burn-In Test	The unit shall be burned in for 2~ 5hours under rated input voltage and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 23 grams per product unit.
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# INDUSTRIAL POWER SUPPLIES AC-DC 72W to 350W



Power Supplies

## 51000 Series



MYRRA 51000 series are 72W to 350W single output enclosed type AC/DC power supply. This series operates for 85~305VAC input voltage and offers the models with the DC output mostly demanded from the industry. 72W to 250W models are cooled by free air convection, 350W model is cooled by Fan, working temperature up to 70°C

### Applications for 51000 Series Power

- **Supplies:** Factory control or automation apparatus
- Test and measurement instrument
- Laser related machine
- Burn-in facility
- RF application
- ....



### MAIN FEATURES

- Wide input voltage range 85-305Vac
- Built-in active PFC > 0.95
- Regulated output range 3.3Vdc-48Vdc
- Very low standby power consumption: meets requirements of Energy Star or EC Code of Conduct
- Operating altitude up to 5000m

### SAFETY STANDARDS

Meets all requirements of:

- IEC/EN62368-1
- IEC/EN60335-1
- IEC/EN61558-2-16, IEC/EN61558-1
- UL62368-1
- CSA 22.2 N°62368-1-14
- CE UKCA Mark

### EMC STANDARDS

Conducted and radiated emissions conform to

- EN55032, FCC Part15 Class B
- IEC/EN 61000-3-x

Immunity conform to

- EN 61000-4-x



# ONE OUTPUT 72W

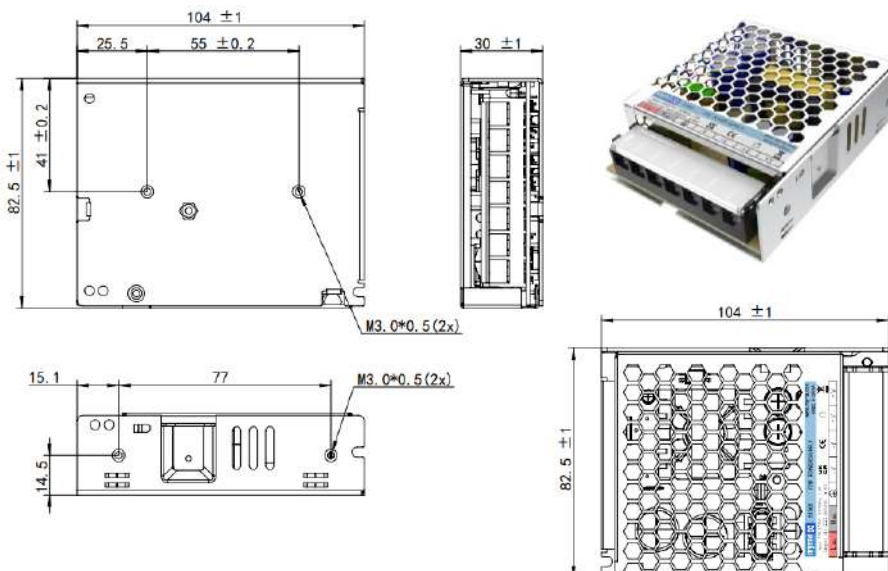


## MAIN FEATURES

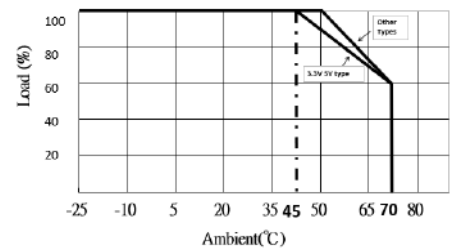
- Small Compact Size
- Single Output
- Regulated Output Range: 3.3VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Safety: Compliance With All Requirements of IEC/EN61558-2-16 ,IEC/EN61558-1, IEC/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51000	45	3.3	13.5	70	80	85 ~ 305VAC (120-430VDC)
51001	72	5	14.4	70	82	
51002	72	9	8.0	70	82	
51003	72	12	6.0	70	85	
51004	72	15	4.8	70	85	
51005	72	18	4.0	70	85	
51006	72	24	3.0	70	86	
51007	72	36	2.0	70	86	
51008	72	48	1.5	70	90	

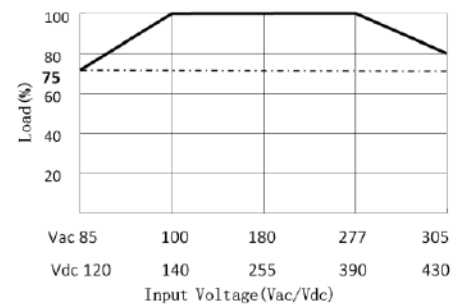
## DIMENSIONS



Power Derating Graph



Vin VS Output Power



Model: 72 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.5A Max.
	Standby Power	0.2W Max.(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 %
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS, 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	3S max. @ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class A
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load; >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 190 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

# ONE OUTPUT 100W



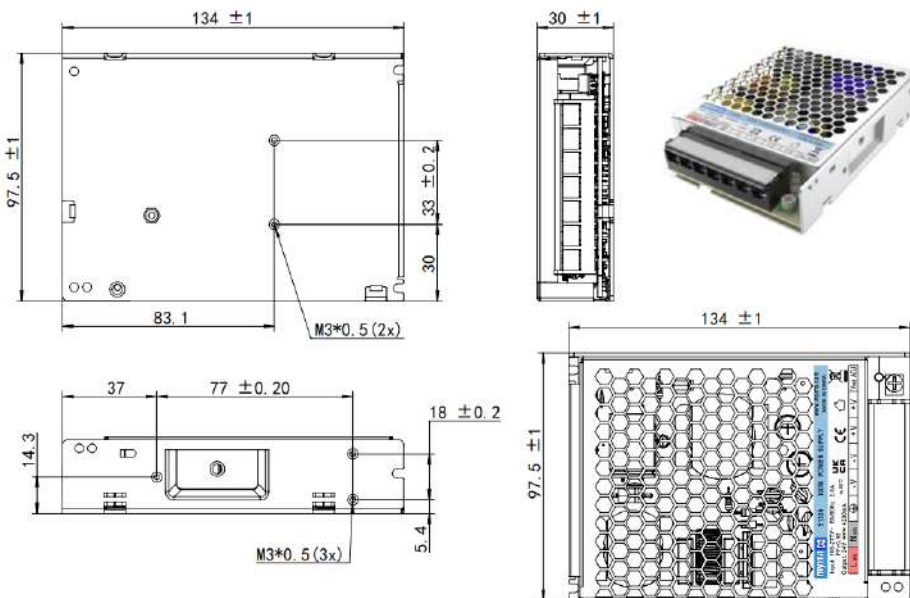
## MAIN FEATURES

- Small Compact Size
- Built-in Active PFC >0.95
- Regulated Output Range: 5.0VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption  $\leq 0.2W$
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

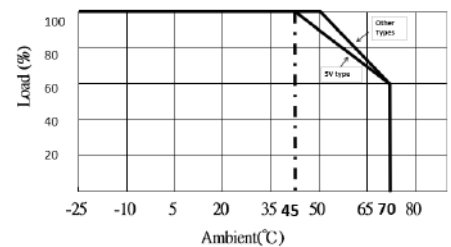
- Safety: Compliance With All Requirements of IEC/EN61558-2-16 , IEC/EN61558-1 IEC/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51301	75	5	15.0	4.75 ~ 5.75	70	85	85 ~ 305VAC (120-430VDC)
51302	90	9	10.0	8.55 ~ 10.30	70	86	
51303	100(102max.)	12	8.4 (8.5max.)	11.40 ~ 13.80	70	86	
51304	100(105max.)	15	6.7 (7.0max.)	14.25 ~ 18.50	70	86	
51305	100(105max.)	18	5.6 (5.8max.)	17.50 ~ 20.50	70	88	
51306	100(108max.)	24	4.2 (4.5max.)	22.80 ~ 28.80	70	88	
51307	100(110max.)	36	2.8(3.05max.)	34.20 ~ 39.60	70	89	
51308	100(110max.)	48	2.1 (2.3max.)	43.20 ~ 52.80	70	89	

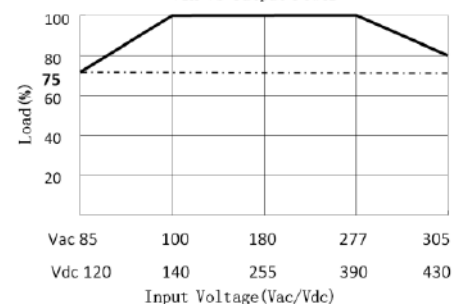
## DIMENSIONS



Power Derating Graph



Vin VS Output Power



Model:100 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	2.0A Max.
	Standby Power	0.2W Max.(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 % (Output Voltage ADJ Range See table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	3S max. @ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shutdown(hiccup mode) when NTC thermistor's body temperature reach approx.110°C; The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark	
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 260 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 150W



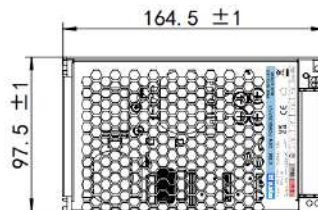
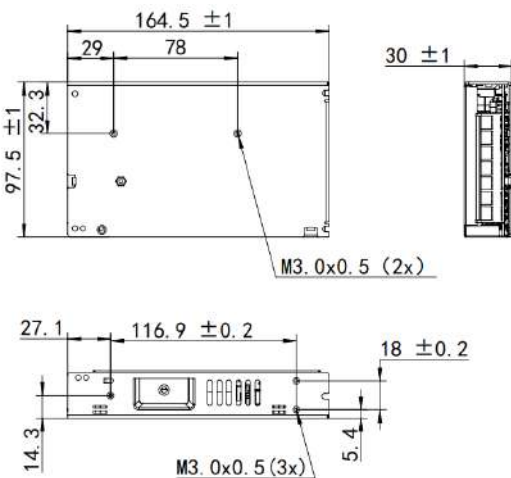
## MAIN FEATURES

- Small Compact Size
- Built-in Active PFC >0.95
- Regulated Output Range: 5.0VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption  $\leq 0.2W$
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

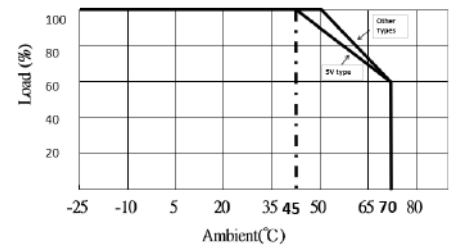
- Safety: Compliance With All Requirements of- IEC/EN61558-2-16 ,IEC/EN61558-1 C/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51401	100	5	20.0	4.75 ~ 5.75	70	85	85 ~ 305VAC (120-430VDC)
51402	150	9	16.7	8.55 ~ 10.30	70	86	
51403	150	12	12.5	11.40 ~ 13.80	70	86	
51404	150	15	10.0	14.25 ~ 18.50	70	86	
51405	150	18	8.3	17.50 ~ 20.50	70	88	
51406	150	24	6.25	22.80 ~ 28.80	70	88	
51407	150	36	4.2	34.20 ~ 39.60	70	89	
51408	150	48	3.1	43.20 ~ 52.80	70	89	

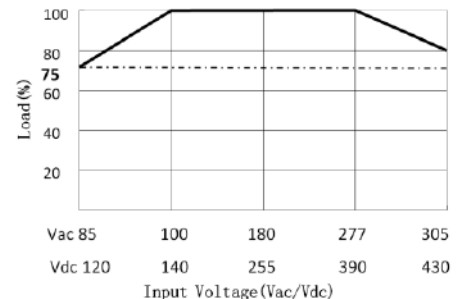
## DIMENSIONS



Power Derating Graph



Vin VS Output Power



Model:150 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	2.0A Max.
	Standby Power	0.2W Max.(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 % (Output Voltage ADJ Range See table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS, 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	3S max .@ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max .@ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shutdown(hiccup mode) when NTC thermistor's body temperature reach approx.110°C; The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 265 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 200W



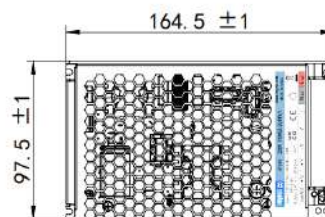
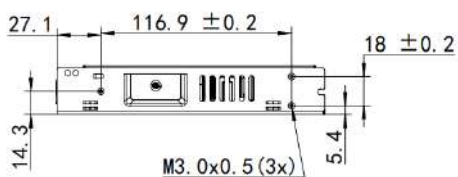
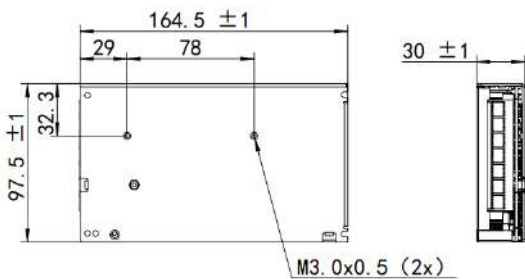
## MAIN FEATURES

- Small Compact Size
- Built-in Active PFC >0.95
- Regulated Output Range: 9.0VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption  $\leq 0.2W$
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

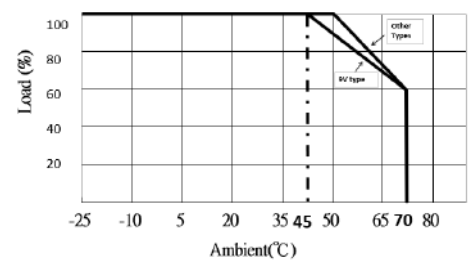
- Safety: Compliance With All Requirements of IEC/EN61558-2-16 ,IEC/EN61558-1 IEC/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51502	150	9	16.7	8.55 ~ 10.30	70	89	85 ~ 305VAC (120-430VDC)
51503	200	12	16.7	11.40 ~ 13.80	70	91	
51504	200	15	13.3	14.25 ~ 18.50	70	91	
51505	200	18	11.0	17.50 ~ 20.50	70	91	
51506	200	24	8.4	22.80 ~ 28.80	70	92	
51507	200	36	5.6	34.20 ~ 39.60	70	92	
51508	200	48	4.2	43.20 ~ 52.80	70	92	

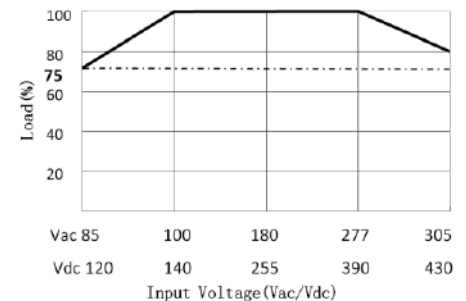
## DIMENSIONS



Power Derating Graph



Vin VS Output Power



Model: 200 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	2.8A Max.
	Standby Power	0.2W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 % (Output Voltage ADJ Range See table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	3S max. @ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load	
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shutdown(hiccup mode) when NTC thermistor's body temperature reach approx.110°C; The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shut down O/P voltage and re-power on to recover.
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark	
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 265 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 250W



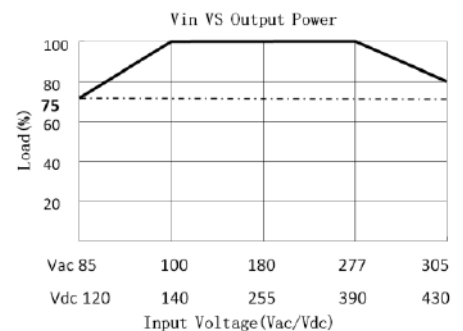
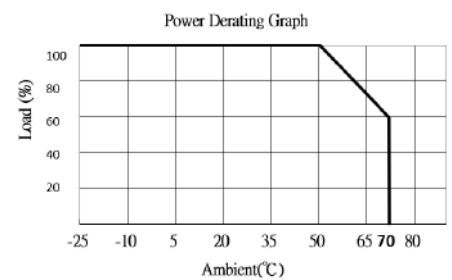
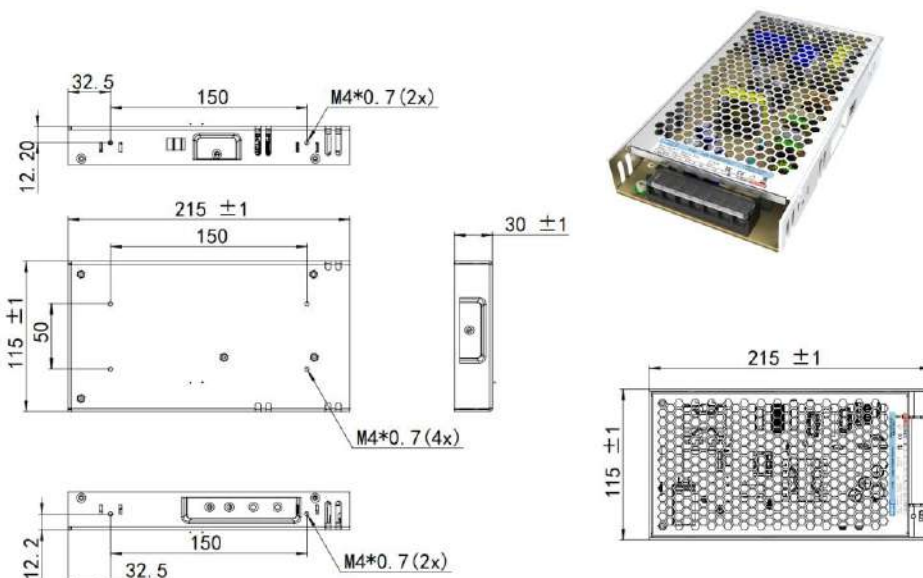
## MAIN FEATURES

- Small Compact Size
- Built-in Active PFC >0.95
- Regulated Output Range: 12VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption  $\leq 0.3W$
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

- Safety: Compliance With All Requirements of IEC/EN61558-2-16 ,IEC/EN61558-1 IEC/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51603	250	12	20.8	11.40 ~ 13.80	70	91	85 ~ 305VAC (120-430VDC)
51604	250	15	16.7	14.25 ~ 18.50	70	91	
51605	250	18	13.9	17.50 ~ 20.50	70	91	
51606	250	24	10.4	22.80 ~ 28.80	70	92	
51607	250	36	6.9	34.20 ~ 39.60	70	92	
51608	250	48	5.2	43.20 ~ 52.80	70	92	

## DIMENSIONS



Model: 250 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	3.0A Max.
	Standby Power	0.3W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 % (Output Voltage ADJ Range See table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS, 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	3S max. @ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shutdown(hiccup mode) when NTC thermistor's body temperature reach approx.110°C; The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shut down O/P voltage and re-power on to recover.
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
	Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 295 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# ONE OUTPUT 350W



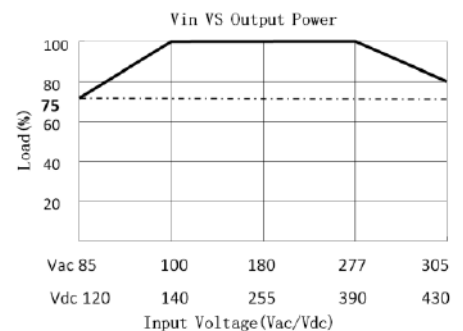
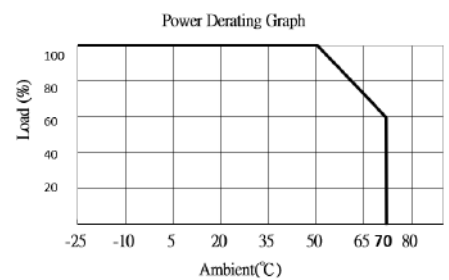
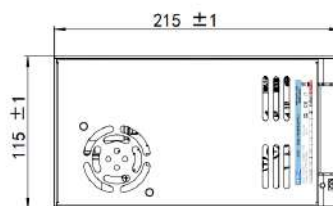
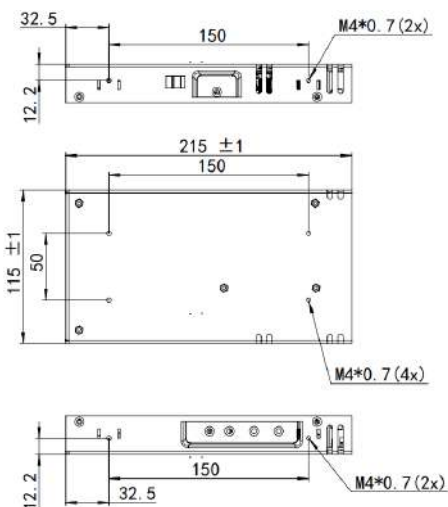
## MAIN FEATURES

- Small Compact Size
- Built-in Active PFC >0.95
- Regulated Output Range: 12VDC - 48VDC
- Input Range: 85VAC - 305VAC/47 - 63Hz Or 120VDC - 430VDC
- Very Low Standby Power Consumption  $\leq 0.3W$
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

- Safety: Compliance with All Requirements of IEC/EN61558-2-16 ,IEC/EN61558-1 IEC/EN60335-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 CE,UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
51703	350	12	29.1	11.40 ~ 13.80	70	91	85 ~ 305VAC (120-430VDC)
51704	350	15	23.3	14.25 ~ 18.50	70	91	
51705	350	18	19.4	17.50 ~ 20.50	70	91	
51706	350	24	14.6	22.80 ~ 28.80	70	92	
51707	350	36	9.7	34.20 ~ 39.60	70	92	
51708	350	48	7.3	43.20 ~ 52.80	70	92	

## DIMENSIONS



Model: 350 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~277 VAC or 140VDC-390VDC
	AC Input Voltage Range	85~ 305Vac or 120VDC-430VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	3.5A Max.
	Standby Power	0.3W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/305VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 % (Output Voltage ADJ Range See table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS, 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~277Vac, DC output with full load
	Turn On Delay	35 max. @ 85Vac~305Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~305Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~305Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~305Vac input and DC output with full load
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shutdown(hiccup mode) when NTC thermistor's body temperature reach approx.110°C; The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shut down O/P voltage and re-power on to recover.
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	With Fan
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec. Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
	Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004
Safety Standards	Compliance With all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16, IEC/EN61558-1,IEC/EN62368-1, CE, UKCA Mark	
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 300 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# DIN RAIL MOUNTING POWER SUPPLIES AC-DC



Power Supplies



## 53000 Series



53000 series is designed with metal housing that enhances the unit's power dissipation. With working efficiency up to 93%, the entire series can operate at the ambient temperature between -20°C and 70°C under air convection. It is equipped with constant current mode for over-load protection, fitting various inductive or capacitive applications. The complete protection functions for industrial control apparatus make 53000 series a very competitive power supply solution for industrial applications.

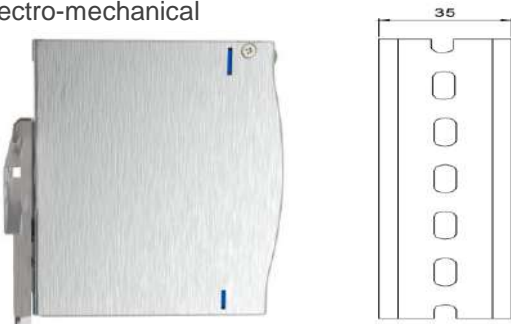
The 53000 series consists of two families: the 531xx single-phase AC input and 533xx three-phase AC input families.

\*531xx family is an economical slim type 240W Din rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The body is designed 40mm in width, which allows space saving inside the cabinets. The entire series adopts the full range AC input from 85VAC to 265VAC and conforms to EN61000-3-2, the norm the European Union regulates for harmonic current.

\*533xx family is one economical slim type 240W to 960W DIN rail power supply series, adapt to be installed on TS-35/7.5 or TS-35/15 mounting rails. The entire series adopts the full range AC input from Three phase 340VAC to 550VAC (Dual Phase operation possible) and conforms to BS EN/EN61000-3-2, the norm the European Union regulates for harmonic current.

### Applications for 53000 Series Power Supplies:

- Factory control or automation apparatus
- Semi-conductor fabrication equipment
- Laser related machine
- Industrial control system
- Electro-mechanical



Admissible Din-Rail: TS35/7.5 or TS35/15, For reference only, not included with unit.

## MAIN FEATURES

- **531xx family:**  
Universal input voltage range 85-265Vac
- **533xx family:**  
Full range AC input from three phase 340VAC to 550VAC (Dual Phase operation possible).
- **Built-in DC OK relay contact**
- **Very low standby power consumption:** meets requirements of Energy Star or EECODE of Conduct
- **Can be installed on DIN rail TS-35/7.5 or 15**

## SAFETY STANDARDS

Meets all requirements of:

- IEC/EN62368-1
- IEC/EN60335-1
- IEC/EN61558-1, IEC/EN61558-2-16
- UL62368-1;
- CSA 22.2 N°62368-1-14
- UL61010-1, UL61010-2-201
- CE UKCA Mark
- Over Voltage Category :OVC III@IEC/EN61558-1

## EMC STANDARDS

Conducted and radiated emissions conform to

- EN55032, FCC Part15 Class B
- IEC/EN 61000-3-x

Immunity conform to

- EN 61000-4-x

# SINGLE PHASE AC INPUT - 240W



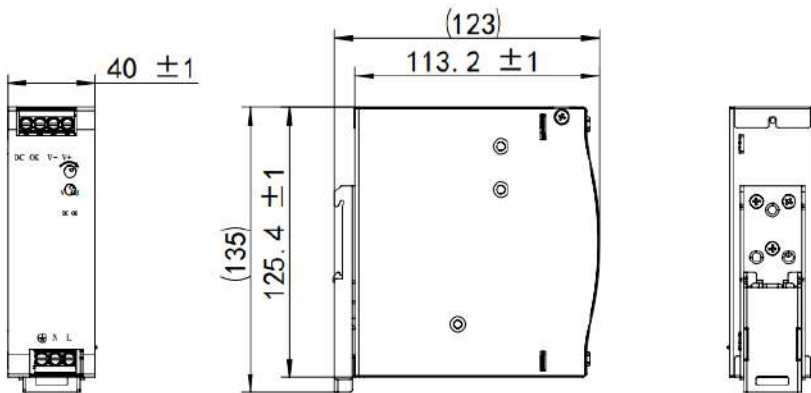
## MAIN FEATURES

- 40mm Slim width
- Single Output
- Regulated Output Range: 12VDC - 48VDC
- Built-in active PFC >0.95
- Input Range: 85VAC - 265VAC/47 - 63Hz Or 120VDC - 375VDC
- Very Low Standby Power Consumption < 0.2W
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct

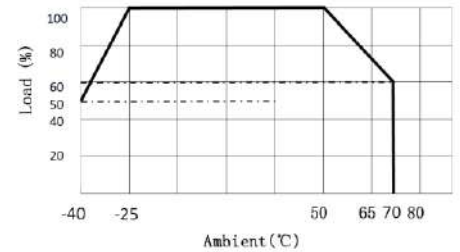
- Safety: Compliance with all requirements of IEC/EN61558-2-16, IEC/EN61558-1, IEC/EN60335-1, IEC/EN62368-1, UL62368-1, CSA22.2No.62368-1-14 CE, UKCA Mark
- EMC : Conducted And Radiated Emissions Conform To EN55032, FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
53103	240	12	20	11.40 ~ 13.80	70	91	85 ~ 265VAC (120-375VDC)
53104	240	15	16	14.25 ~ 18.50	70	91	
53105	240	18	13.3	17.50 ~ 20.50	70	91	
53106	240	24	10	22.80 ~ 28.80	70	92	
53107	240	36	6.7	34.20 ~ 39.60	70	92	
53108	240	48	5.0	43.20 ~ 52.80	70	92	

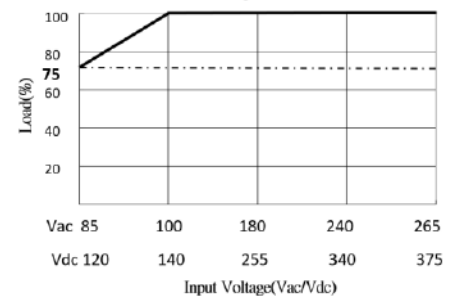
## DIMENSIONS



Power Derating Graph



Vin VS Output Power



Model: 240 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	100~240 VAC or 140VDC-340VDC
	AC Input Voltage Range	85~265VAC or 120VDC-375VDC
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	3.0A Max.
	Standby Power	0.2W Max.(Meet Requirements Of Energy Star And EC Code Of Conduct)
	Leakage Current	< 0.75mA/265VAC
DC Output Characteristics	Output Voltage Accuracy	± 2 %
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 180mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→100% Load change, 1A/uS, 1KHz 50% duty cycle
	Hold Up Time	5mS min@ 100Vac ~240Vac, DC output with full load
	Turn On Delay	3S max. @ 85Vac~265Vac input and DC output with full load
	Rise Time	50ms max. @ 85Vac~265Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 85Vac~265Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 85Vac~265Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protect. The power supply shall auto-recover normal operation after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over voltage protection	Production type: shutdown O/P voltage and re-power on to recover.
DC OK Relay	DC OK Relay Contact Ratings	60Vdc/0.3A,30Vdc/1A,30Vac/0.5A resistive load
Environmental	Operation Temperature	-25°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	10~ 90% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3750VAC 5mA, 3 sec.
		Input to GND: 2000VAC 10mA, 3 sec.
		Output to GND: 1250VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc
	Radiation/ Conduction	Meeting EN55032,FCC part 15, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class A
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±6KV,Air Discharge ±8KV
	RF Field Strength Susceptibility	Meeting IEC/EN61000-4-3:2019
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±6KV common mode,±4KV diff.mode
	Conducted Susceptibility	Meeting EN61000-4-6 : 2014
Voltage Dips And Interruptions	Meeting EN61000-4-11 : 2004	
Safety Standards	Compliance with all requirements of : UL62368-1, CSA22.2No.62368-1-14, IEC/EN60335-1,IEC/EN61558-2-16,IEC/EN61558-1, IEC/EN62368-1, CE, UKCA Mark	
Reliability Requirement	MTBF	>200K Hours @230VAC input at 50deg.C and DC output with full load >450K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230vac input and DC with full load at an ambient temperature of 30~45 degrees C
Net Weight	About 480 grams per product unit	
Guarantee	This product is in accordance with the European RoHS & REACH directives	

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# THREE PHASE AC INPUT - 240W

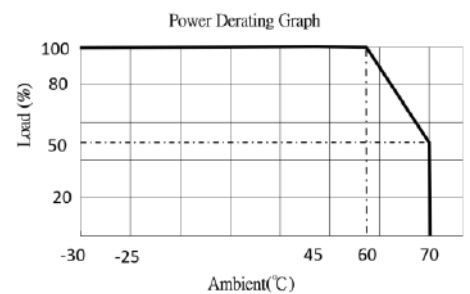
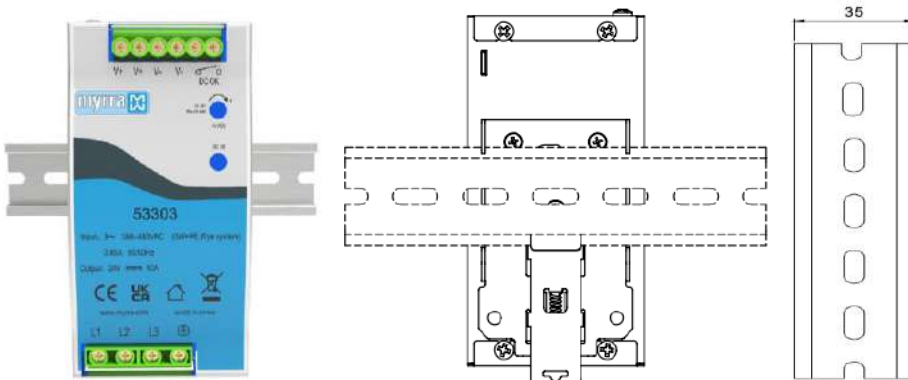
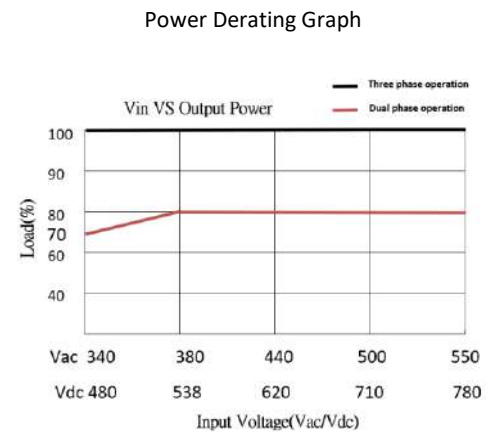
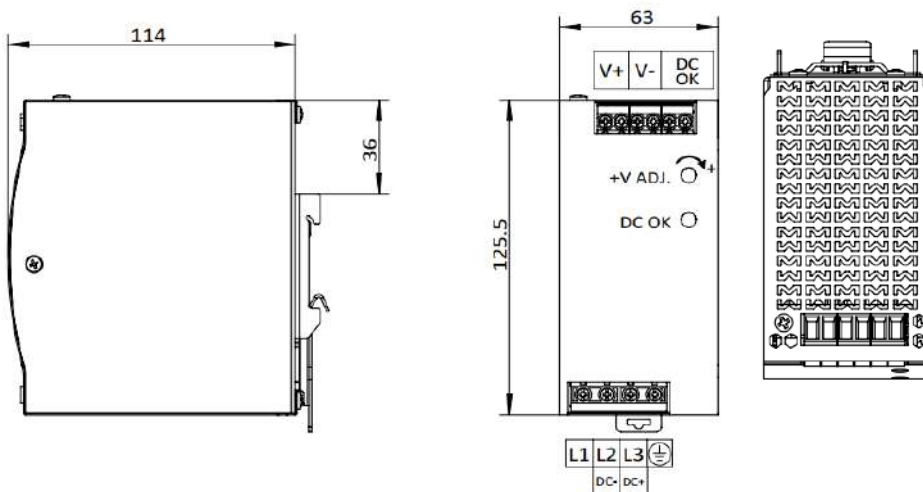
## MAIN FEATURES

- 63mm Slim width
- Single Output
- Regulated Output Range: 24VDC - 48VDC
- Input Range: Three-phase 340VAC - 550VAC / 47-63Hz Or 480VDC - 780VDC  
(Dual phase operation possible in connecting L1, L3,FG or L2,L3,FG)
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Operation Altitude: 5000 Meters

- Safety: Compliance with all requirements of IEC/EN61558-2-16 , IEC/EN61558-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 UL61010-1, UL61010-2-201 CE,UKCA Mark  
Over Voltage Category :OVC III@IEC/EN61558-1
- EMC : Conducted And Radiated Emissions Conform To EN55032, EN/IEC61204-3, CLASS B, IEC/EN61000-3-2 CLASS A, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	TYP. Efficiency(%)	Input Range
53303	240	24	10	24.0 ~ 28.0	70	92	Three-Phase 340 ~ 550VAC (480-780VDC)
53304	240	36	6.6	36.0 ~ 42.0	70	92	
53305	240	48	5.0	48.0 ~ 55.0	70	92	

## DIMENSIONS





Model: 240 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	Three-phase 380~480VAC or 540VDC-680VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Voltage Range	Three-phase 340~550VAC or 480VDC-780VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	0.85A Max.
	Leakage Current	< 2mA/530VAC
DC Output Characteristics	Output Voltage Accuracy	± 1 % (output voltage ADJ range see table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 150mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→90% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	20mS typ. @ 400Vac, 40mS typ.@500Vac at DC output with full load
	Turn On Delay	3S max. @ 340Vac~550Vac input and DC output with full load
	Rise Time	60ms max. @ 400Vac-500Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 340vac~550vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 340vac~550vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection (hiccup mode) @ 105% ~140% rated output power. The power supply shall auto-recovery normal operations after the deformation is removed. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shut down(hiccup mode) when NTC thermistor's body temperature reach approx.110°C@ power supply operating ambient temperature approx.+80°C ±10°C @ at the DC output with full load. The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shut down output voltage and recovers automatically after fault condition is removed.
DC OK Relay	DC OK Relay Contact Rantings	60Vdc/0.3A,30Vdc/1A,30Vac/0.5A resistive load
Environmental	Operation Temperature	-30°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	20~ 95% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 4870VAC 5mA, 3 sec; Input to GND: 2400VAC 10mA, 3 sec. Output to GND: 500VAC 10mA, 3 sec ; Output to DC OK: 500VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc/25°C/70% RH
	Radiation/ Conduction	Meeting EN55032,EN/IEC61204-3, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class A
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±8KV,Air Discharge ±15KV
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±4KV common mode,±2KV diff.mode
Safety Standards	Compliance with all requirements of : UL62368-1, CSA22.2No.62368-1-14, UL61010-1, UL61010-2-201, IEC/EN61558-1,IEC/EN61558-2-16,IEC/EN62368-1, CE, UKCA Mark	
Reliability Requirement	MTBF	>210K Hours @400VAC input at 25deg.C and DC output with full load (Calculated in accordance with MIL-HDBK-217-F2)
	Burn-In Test	The unit shall be burned in for 2~ 5hour @DC with full load at an ambienttemperature of 30~45 degrees C

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# THREE PHASE AC INPUT - 480W



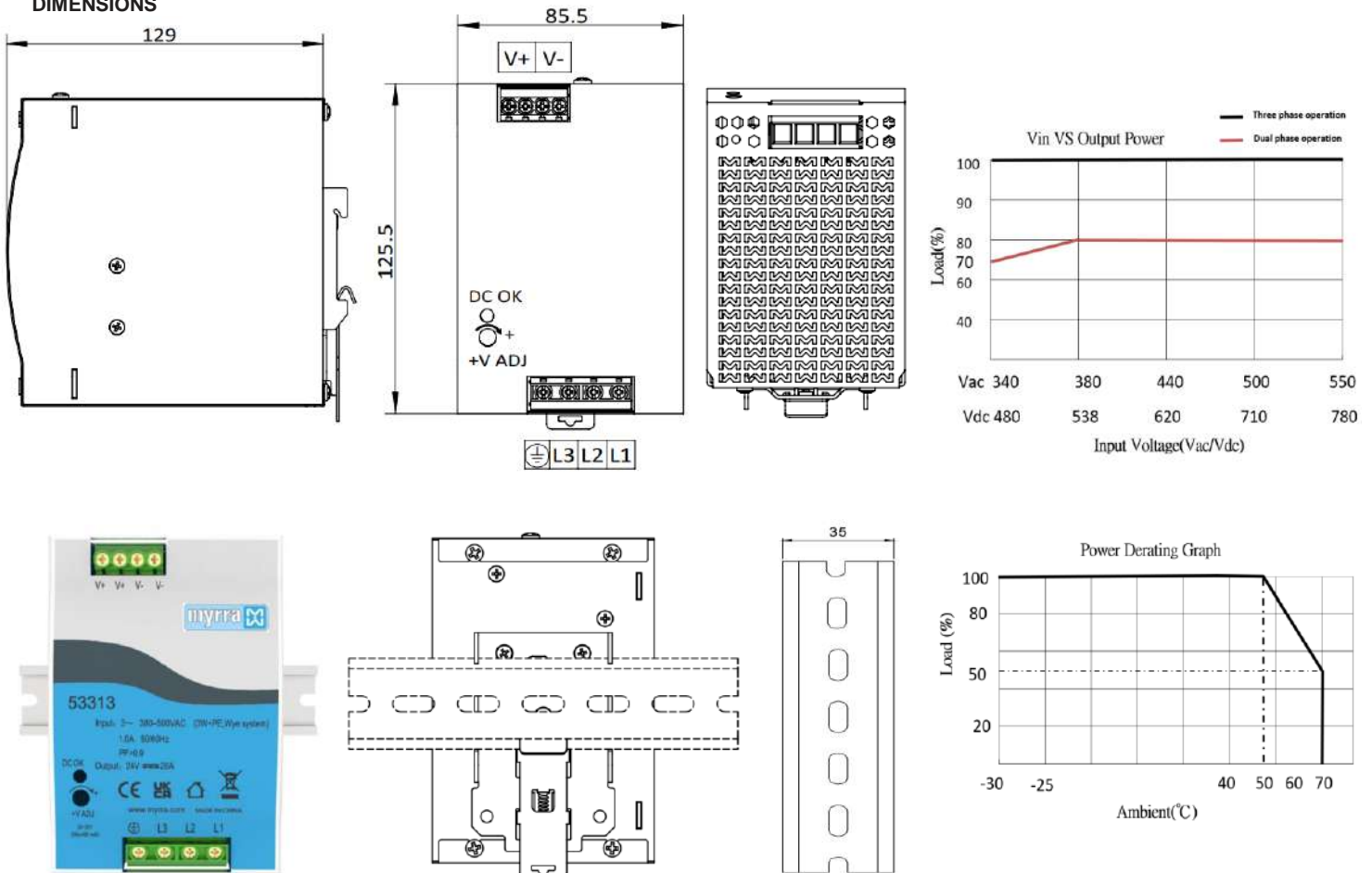
## MAIN FEATURES

- 85.5mm Slim width
- Single Output
- Regulated Output Range: 24VDC - 48VDC
- Input Range: Three-phase 340VAC - 550VAC/47 - 63Hz Or 480VDC - 780VDC  
(Dual phase operation possible in connecting L1, L3,FG or L2,L3,FG)
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Operation Altitude: 5000 Meters

- Safety: Compliance with all requirements of IEC/EN61558-2-16 , IEC/EN61558-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 UL61010-1, UL61010-2-201 CE,UKCA Mark  
Over Voltage Category :OVC III@IEC/EN61558-1
- EMC : Conducted And Radiated Emissions Conform To EN55032, EN/IEC61204-3, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	TYP. Efficiency(%)	Input Range
53313	480	24	20	24.0 ~ 28.0	70	92.5	Three-Phase 340 ~ 550VAC (480-780VDC)
53314	480	36	13.3	36.0 ~ 42.0	70	92.5	
53315	480	48	10	48.0 ~ 55.0	70	93	

## DIMENSIONS



Model: 480 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	Three-phase 380~500VAC or 540VDC-710VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Voltage Range	Three-phase 340~550VAC or 480VDC-780VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.0A Max.
	Leakage Current	< 3.5mA/530VAC
	Powe Factor	>0.9@400Vac input at full load; >0.88@500Vac input at full load
DC Output Characteristics	Output Voltage Accuracy	± 1 %(output voltage ADJ range see table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 150mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→90% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	20ms typ. @ 400Vac, 40mS typ.@500Vac at DC output with full load
	Turn On Delay	2S max. @ 340Vac~550Vac input and DC output with full load
	Rise Time	60ms max. @ 400Vac-500Vac input and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 340vac~550Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 340Vac~550Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection @ 105% ~140% rated output power. Protection type : Constant current limiting, unit will shut down after 3 sec. ,re-power on to recover. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shut down(hiccup mode) when NTC thermistor's body temperature reach approx.110°C@ power supply operating ambient temperature approx.+80°C ±10°C @ at the DC output with full load. The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shutdown O/P voltage and re-power on to recover.
DC OK Relay	DC OK Relay Contact Rantings	OPTIONAL (60Vdc/0.3A,30Vdc/1A,30Vac/0.5A resistive load)
Environmental	Operation Temperature	-30°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	20~ 95% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3000VAC 5mA, 3 sec; Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 500VAC 10mA, 3 sec ; Output to DC OK: 500VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc/25°C/70% RH
	Radiation/ Conduction	Meeting EN55032,EN/IEC61204-3, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Voltage Fluctuation And Flicker	Meeting EN61000-3-3:2013
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±8KV, Air Discharge ±15KV
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±4KV common mode,±2KV diff.mode
Safety Standards	Compliance with all requirements of : UL62368-1, CSA22.2No.62368-1-14, UL61010-1, UL61010-2-201, IEC/EN61558-1,IEC/EN61558-2-16,IEC/EN62368-1,CE, UKCA Mark	
Reliability Requirement	MTBF	>150K Hours @400VAC input at 25deg.C and DC output with full load (Calculated in accordance with MIL-HDBK-217-F2)
	Burn-In Test	The unit shall be burned in for 2~ 5hours @ DC with full load at an ambienttemperature of 30~45 degrees C

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# THREE PHASE AC INPUT - 960W



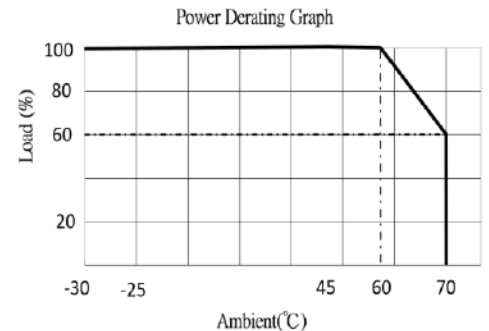
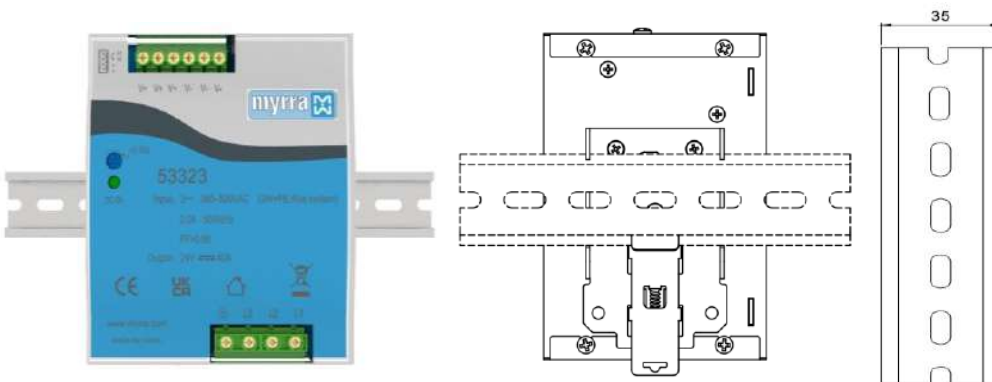
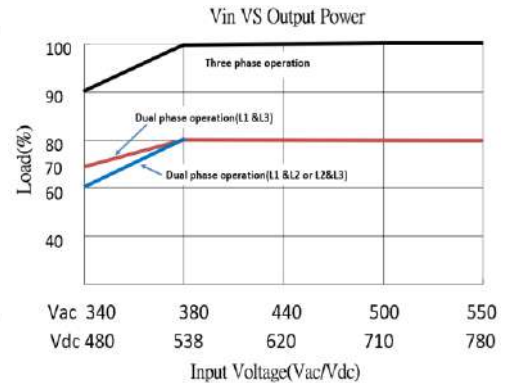
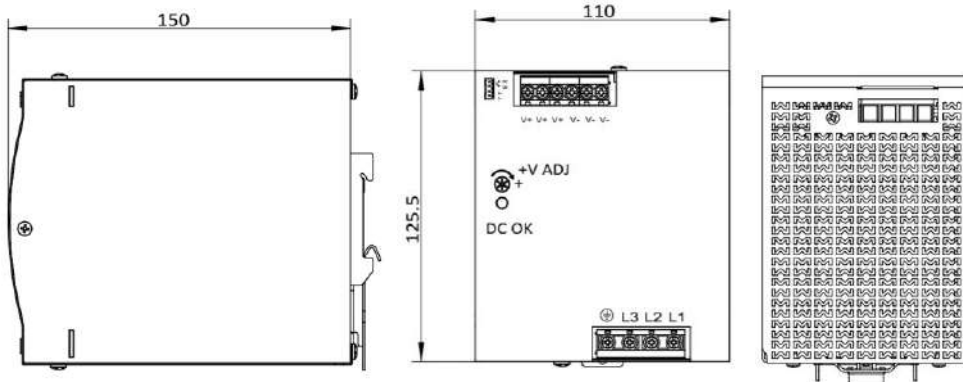
## MAIN FEATURES

- 110mm Slim width
- Current Sharing Function(3+1)
- Regulated Output Range: 24VDC - 48VDC
- Input Range: Three-phase 340VAC - 550VAC/47 - 63Hz Or 480VDC - 780VDC  
(Dual phase operation possible in connecting L1, L3,FG or L2,L3,FG)
- Better Energetic Efficiency : Meet Requirements Of Energy Star And EC Code Of Conduct
- Operation Altitude: 5000 Meters

- Safety: Compliance with all requirements of IEC/EN61558-2-16 , IEC/EN61558-1, IEC/EN62368-1,UL62368-1, CSA22.2No.62368-1-14 UL61010-1, UL61010-2-201 CE,UKCA Mark  
Over Voltage Category :OVC III@IEC/EN61558-1
- EMC : Conducted And Radiated Emissions Conform To EN55032, EN/IEC61204-3, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To: EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5, EN61000-4-6, EN61000-4-8,EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Rated Output Current (A)	Output Voltage Range-ADJ(Vdc)	Max.Operating Ambient (°C)	TYP. Efficiency(%)	Input Range
53323	960	24	40	24.0 ~ 28.0	70	94	Three-Phase 340 ~ 550VAC (480-780VDC)
53324	960	36	26.6	36.0 ~ 42.0	70	94	
53325	960	48	20	48.0 ~ 55.0	70	94	

## DIMENSIONS



Model: 960 Watt		Specification
AC Input Characteristics	Rated AC input Voltage	Three-phase 380~500VAC or 540VDC-710VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Voltage Range	Three-phase 340~550VAC or 480VDC-780VDC (Dual phase operation possible in connecting L1,L3,FG or L2,L3,FG)
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	2.5A Max.
	Leakage Current	< 3.5mA/530VAC
	Powe Factor	>0.88@400Vac input at full load; >0.86@500Vac input at full load
DC Output Characteristics	Output Voltage Accuracy	± 1 %(output voltage ADJ range see table)
	Output Voltage Line Regulation	± 0.5 %
	Output Voltage Load Regulation	± 1 %
	Ripple & Noise	Max. 200mVp-p@ Rated AC input, at nominal line (The measuring will be terminated with a 47uF ALE-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth)
	Dynamic Response	The output voltage shall not exceed ±10% rated output voltage @ 50%←→90% Load change, 1A/uS , 1KHz 50% duty cycle
	Hold Up Time	10mS typ. @ 400Vac, 12mS typ.@500Vac at DC output with full load
	Turn On Delay	2S max. @ 340Vac~550Vac input and DC output with full load
	Rise Time	110ms max. @ 400Vac input , 100ms max. @ 500Vac input ,and DC output with full load
	Overshoot	The output voltage shall not exceed +10% rated output voltage @ Power on and 340vac~550Vac input, and DC with full load
	Undershoot	The output voltage shall not exceed -10% rated output voltage @ Power off and 340Vac~550Vac input and DC output with full load
	Efficiency	See table (Meets Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Current Protection	The power supply shall automatic protection @ 105% ~140% rated output power. Protection type : Constant current limiting, unit will shut down after 3 sec. ,re-power on to recover. No excessive heat, odour, no safety hazard
	Output Short Circuit Protection	The power supply shall withstand a continuous output short without damage in 24 hours; The short may be applied before power on, or after power on; The power supply shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over temperature protection	The power supply is built thermal protection function and can be shut down(hiccup mode) when NTC thermistor's body temperature reach approx.110°C@ power supply operating ambient temperature approx.+65°C ±10°C @ at the DC output with full load. The power supply shall auto-recovery normal operation, it is subject to the shut-down is long enough to allow the thermal detection is down to auto reset.
	Over voltage protection	Production type: shutdown O/P voltage and re-power on to recover.
DC OK Relay	DC OK Relay Contact Rantings	60Vdc/0.3A,30Vdc/1A,30Vac/0.5A resistive load
Current Sharing Function	Current Sharing	When the power modules work in parallel, there is an active current sharing circuit inside to ensure that the current between each module remains balanced, In parallel operation 4 units is the maximum.
Environmental	Operation Temperature	-30°C ~+70 °C (Refer to DERATING GRAPH)
	Operation Humidity	20~ 95% RH(No Condensing) @ DC output with full load
	Storage Temperature	-40°C~ +85°C (Recommended +5°C~ +35°C)
	Storage Humidity	10%~95% (Recommended <75%RH)
	Cooling Method	Ordinary or thermostat
Safety & EMC Requirement	Dielectric Strength	Input to Output : 3000VAC 5mA, 3 sec; Input to GND: 2000VAC 10mA, 3 sec. Output to GND: 500VAC 10mA, 3 sec ; Output to DC OK: 500VAC 10mA, 3 sec
	Insulation Resistance	100MΩ max @500Vdc/25°C/70% RH
	Radiation/ Conduction	Meeting EN55032,EN/IEC61204-3, Class B
	Harmonic Current Disturbance	Meeting IEC/EN61000-3-2:2019, Class C
	Electrostatic Discharge	Meeting EN61000-4-2:2009 Contact Discharge ±8KV, Air Discharge ±15KV
	Electrical Fast Transient	Meeting EN61000-4-4:2012, ±4KV
	Lightning Surge	Meets EN61000-4-5:2014,±4KV common mode,±2KV diff.mode
	Safety Standards	Compliance with all requirements of : UL62368-1, CSA22.2No.62368-1-14, UL61010-1, UL61010-2-201, IEC/EN61558-1,IEC/EN61558-2-16,IEC/EN62368-1,CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @400VAC input at 25deg.C and DC output with full load (Calculated in accordance with MIL-HDBK-217-F2)
	Burn-In Test	The unit shall be burned in for 2~ 5hours @ DC with full load at an ambienttemperature of 30~45 degrees C

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# LED DRIVERS 65W TO 300W



Power Supplies

## 54000 Series



54000 series is a 65W to 300W AC-DC LED driver featuring the dual mode constant voltage and constant current output. The entire series adopts the full range AC input from 100VAC to 305VAC with different output voltage ranging between 12V and 48V and conforms to EN61000-3-2 Class C, the norm the European Union regulates for harmonic current.

54000 series is designed with metal housing and IP65 ingress protection level allows this series to fit both indoor and outdoor applications. The High working efficiency up to 90% with the fanless design, the entire series can operate at the ambient temperature between -25°C and +80°C under air convection.

54000 series is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

### Applications:

- LED Flood Lighting
- LED Decorative Lighting
- LED Architectural Lighting LED Street Lighting
- LED Bay Lighting....

### MAIN FEATURES

- Universal input voltage range 100-305Vac
- Built - in active PFC>0.95
- Constant Current Mode Output
- IP65 Rating for indoor or outdoor installations
- 3 In 1 dimming(1V to 10Vdc or 10V PWM signal or resistance)

### SAFETY STANDARDS

Meets all requirements of:

- IEC/EN61347-1
- IEC/EN61347-2-13
- UL8750 Class 2
- CSA C22.2 N°250.13-12
- IP65
- CE UKCA Mark

### EMC STANDARDS

Conducted and radiated emissions conform to

- EN55015,FCC Part15 Class B
- IEC/EN 61000-3-x

Immunity conform to

- EN 61000-4-x

# 65W LED Driver

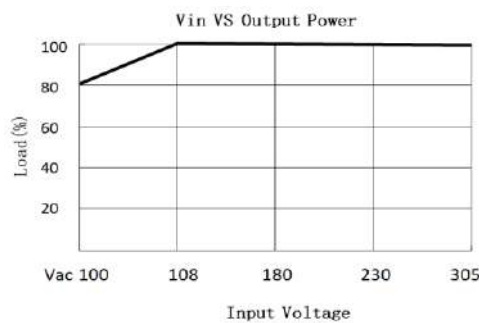
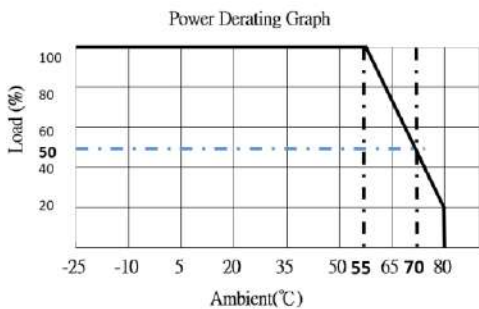


## MAIN FEATURES

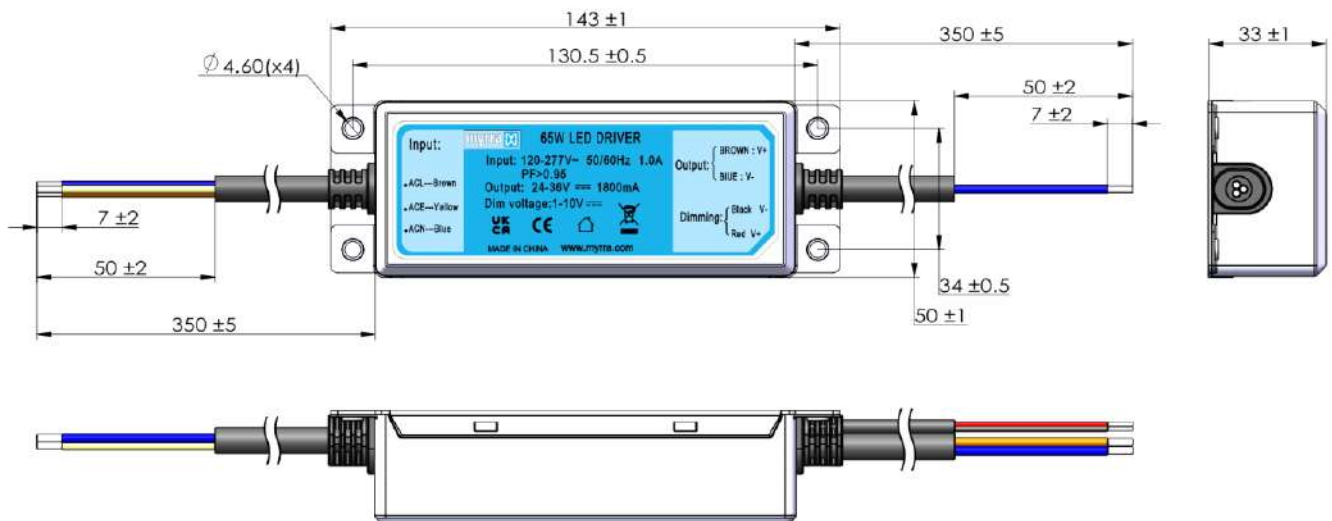
- 65W Small Compact Size- Metal housing design
- Constant Current Mode Output
- Built-in active PFC >0.95
- Output Range : 12VDC - 48VDC
- Input Range: 100VAC - 305VAC/47- 63Hz
- Very Low Standby Power Consumption<0.5W
- IP65 Rating For Indoor Or Outdoor Installations
- 3 In 1 Dimming(1V to 10Vdc or 10V PWM Signal or resistance)
- Safety: Compliance with All Requirements of: IEC/EN61347-1, IEC/EN61347-2-13, UL8750 CALSS 2, CSA C22.2NO.250.13-12,CE,UKCA,IP65
- Materials: Uses UL 94-V0 Resin
- EMC : Conducted And Radiated Emission conform To EN55015,FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
54000	65	12~18	3600	80	88	100VAC-305VAC
54001	65	15 ~24	2700	80	88	
54002	65	21.5 ~36	1800	80	89	
54003	65	25 ~42	1550	80	90	
54004	65	32 ~48	1350	80	90	

## DERATING GRAPH



## DIMENSIONS



Model: 65 Watt		Specification
AC Input Characteristics	Rated input Voltage	120~277Vac
	Input Voltage Range	100~305Vac
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.0A Max.@108Vac~305Vac@DC output with full load
	Standby Power	0.5W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Total Harmonic Distortion	≤20% @output load≥75%
	Leakage Current	<0.75mA@277Vac
	Max.No.of PSU on 16A circuit breaker	26 units(circuit breaker of type B)/26 units(circuit breaker of type C)at 230VAC.
DC Output Characteristics	Output Voltage Range	See table
	Output Voltage Line Regulation	± 5%
	Output Voltage Load Regulation	± 5%
	Ripple & Noise	Max. 10%lp-p@ 120Vac ~277Vac (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth).
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Voltage Protection(LED Open)	The LED driver shall automatic protection(hiccup mode). The LED driver shall auto-recovery normal operation after the deformation is removed. No excessive heat, odour, no safety hazard.
	Output Short Circuit Protection	The LED driver shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The LED driver shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over Temperature Protection	Hiccup mode, recovers automatically after fault condition is removed.
Environmental	Operation Temperature	-25°C ~ + 80°C (Refer to “Derating Graph”)
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Input to Output 3kVAC,5mA,1 min(3.75kVAC,3s @at the mass production stage) Input to Ground 1.5kVAC, 5mA,1 min Output to Ground 500VAC ,5mA,1 min
	Radiation	Meeting EN55015, FCC part 15, Class B
	Conduction	Meeting EN55015, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : IP65; UL8750 CLASS2; CSA C22.2NO.250.13-12;IEC/EN61347-1;IEC/EN61347-2-13; CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 55deg.C and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 450 grams per product unit.
Guarantee	This product meet to RoHS standard	



# 100W LED Driver

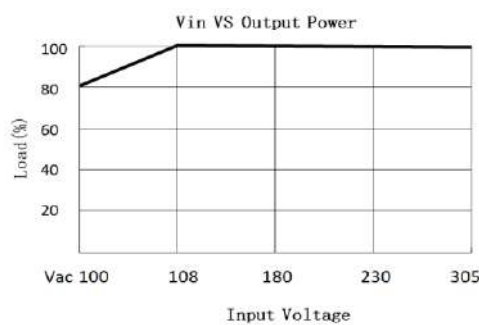
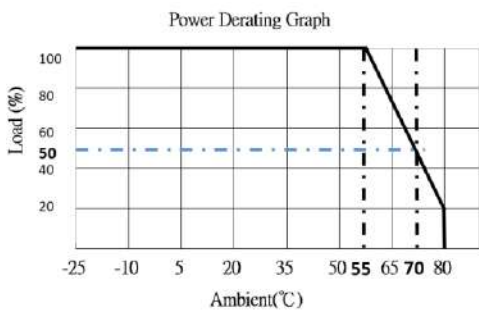


## MAIN FEATURES

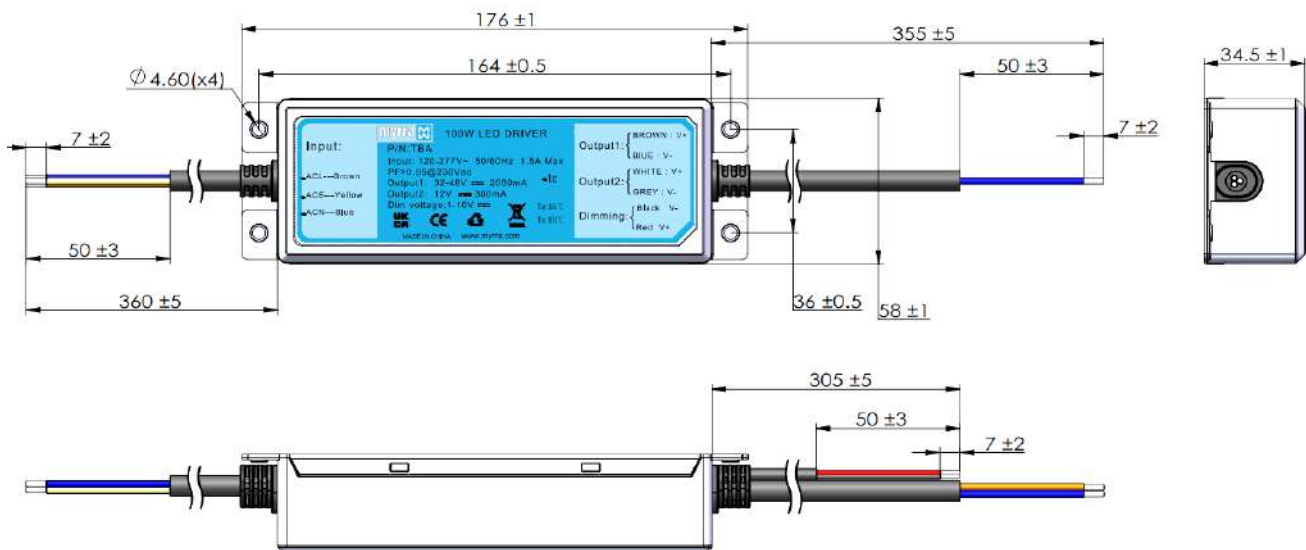
- 100W Small Compact Size- Metal housing design
- Constant Current Mode Output
- Built-in active PFC >0.95
- Output Range : 12VDC - 48VDC
- Input Range: 100VAC - 305VAC/47- 63Hz
- Very Low Standby Power Consumption<0.5W
- IP65 Rating For Indoor Or Outdoor Installations
- 3 In 1 Dimming(1V to 10Vdc or 10V PWM Signal or resistance)
- Safety: Compliance with All Requirements of: IEC/EN61347-1, IEC/EN61347-2-13, UL8750 CALSS 2, CSA C22.2NO.250.13-12,CE,UKCA,IP65
- Materials: Uses UL 94-V0 Resin
- EMC : Conducted And Radiated Emission conform To EN55015,FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
54010	100	12~18	5500	80	88	100VAC-305VAC
54011	100	15 ~24	4200	80	88	
54012	100	21.5 ~36	2770	80	89	
54013	100	25 ~42	2380	80	90	
54014	100	32 ~48	2080	80	90	

## DERATING GRAPH



## DIMENSIONS



Model: 100 Watt		Specification
AC Input Characteristics	Rated input Voltage	120~277Vac
	Input Voltage Range	100~305Vac
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	1.5A Max.@108Vac~305Vac@DC output with full load
	Standby Power	0.5W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Total Harmonic Distortion	≤20% @output load≥75%
	Leakage Current	<0.75mA@277Vac
	Max.No.of PSU on 16A circuit breaker	26 units(circuit breaker of type B)/26 units(circuit breaker of type C)at 230VAC.
DC Output Characteristics	Output Voltage Range	See table
	Output Voltage Line Regulation	± 5%
	Output Voltage Load Regulation	± 5%
	Ripple & Noise	Max. 10%lp-p@ 120Vac ~277Vac (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth).
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Voltage Protection(LED Open)	The LED driver shall automatic protection(hiccup mode). The LED driver shall auto-recovery normal operation after the deformation is removed. No excessive heat, odour, no safety hazard.
	Output Short Circuit Protection	The LED driver shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The LED driver shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over Temperature Protection	Hiccup mode, recovers automatically after fault condition is removed.
Environmental	Operation Temperature	-25°C ~ + 80°C (Refer to “Derating Graph”)
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Input to Output 3kVAC,5mA,1 min(3.75kVAC,3s @at the mass production stage) Input to Ground 1.5kVAC, 5mA,1 min Output to Ground 500VAC ,5mA,1 min
	Radiation	Meeting EN55015, FCC part 15, Class B
	Conduction	Meeting EN55015, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : IP65; UL8750 CLASS2; CSA C22.2NO.250.13-12;IEC/EN61347-1;IEC/EN61347-2-13; CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 55deg.C and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 530 grams per product unit.
Guarantee	This product meet to RoHS standard	

# 200W LED Driver

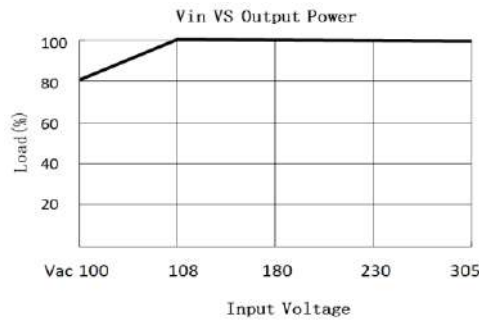
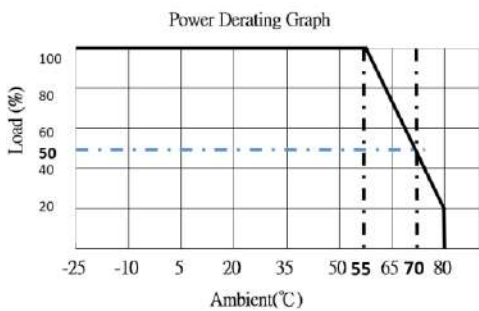


## MAIN FEATURES

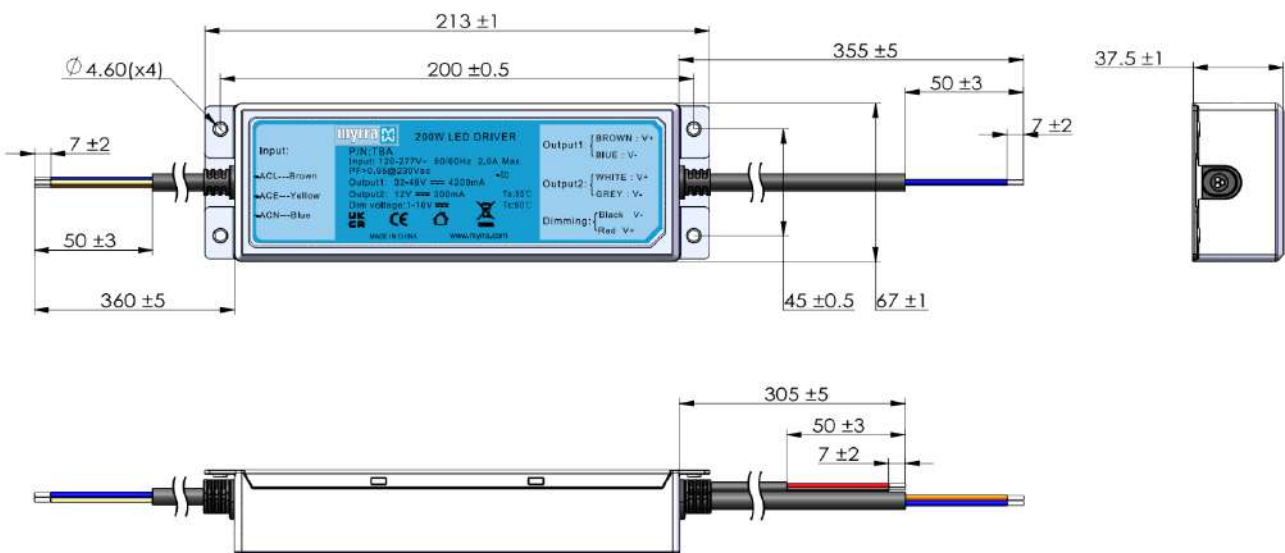
- 200W Small Compact Size- Metal housing design
- Constant Current Mode Output
- Built-in active PFC >0.95
- Output Range : 12VDC - 48VDC
- Input Range: 100VAC - 305VAC/47- 63Hz
- Very Low Standby Power Consumption<0.5W
- IP65 Rating For Indoor Or Outdoor Installations
- 3 In 1 Dimming(1V to 10Vdc or 10V PWM Signal or resistance)
- Safety: Compliance with All Requirements of: IEC/EN61347-1, IEC/EN61347-2-13, UL8750 CALSS 2, CSA C22.2NO.250.13-12,CE,UKCA,IP65
- Materials: Uses UL 94-V0 Resin
- EMC : Conducted And Radiated Emission conform To EN55015,FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
54020	200	12~18	11.10	80	88	100VAC-305VAC
54021	200	15 ~24	8.33	80	88	
54022	200	21.5 ~36	5.56	80	89	
54023	200	25 ~42	4.76	80	90	
54024	200	32 ~48	4.20	80	90	

## DERATING GRAPH



## DIMENSIONS



Model: 200 Watt		Specification
AC Input Characteristics	Rated input Voltage	120~277Vac
	Input Voltage Range	100~305Vac
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	2.5A Max.@108Vac~305Vac@DC output with full load
	Standby Power	0.5W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Total Harmonic Distortion	≤20% @output load≥75%
	Leakage Current	<0.75mA@277Vac
	Max.No.of PSU on 16A circuit breaker	26 units(circuit breaker of type B)/26 units(circuit breaker of type C)at 230VAC.
DC Output Characteristics	Output Voltage Range	See table
	Output Voltage Line Regulation	± 5%
	Output Voltage Load Regulation	± 5%
	Ripple & Noise	Max. 10%Ip-p@ 120Vac ~277Vac (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth).
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Voltage Protection(LED Open)	The LED driver shall automatic protection(hiccup mode). The LED driver shall auto-recovery normal operation after the deformation is removed. No excessive heat, odour, no safety hazard.
	Output Short Circuit Protection	The LED driver shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The LED driver shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over Temperature Protection	Hiccup mode, recovers automatically after fault condition is removed.
Environmental	Operation Temperature	-25°C ~ + 80°C (Refer to “Derating Graph”)
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Input to Output 3kVAC,5mA,1 min(3.75kVAC,3s @at the mass production stage) Input to Ground 1.5kVAC, 5mA,1 min Output to Ground 500VAC ,5mA,1 min
	Radiation	Meeting EN55015, FCC part 15, Class B
	Conduction	Meeting EN55015, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : IP65; UL8750 CLASS2; CSA C22.2NO.250.13-12;IEC/EN61347-1;IEC/EN61347-2-13; CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 55deg.C and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 530 grams per product unit.
Guarantee	This product meet to RoHS standard	

# 300W LED Driver

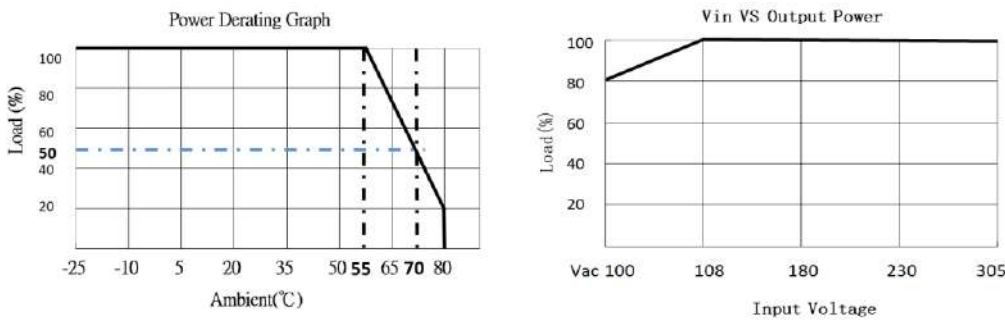


## MAIN FEATURES

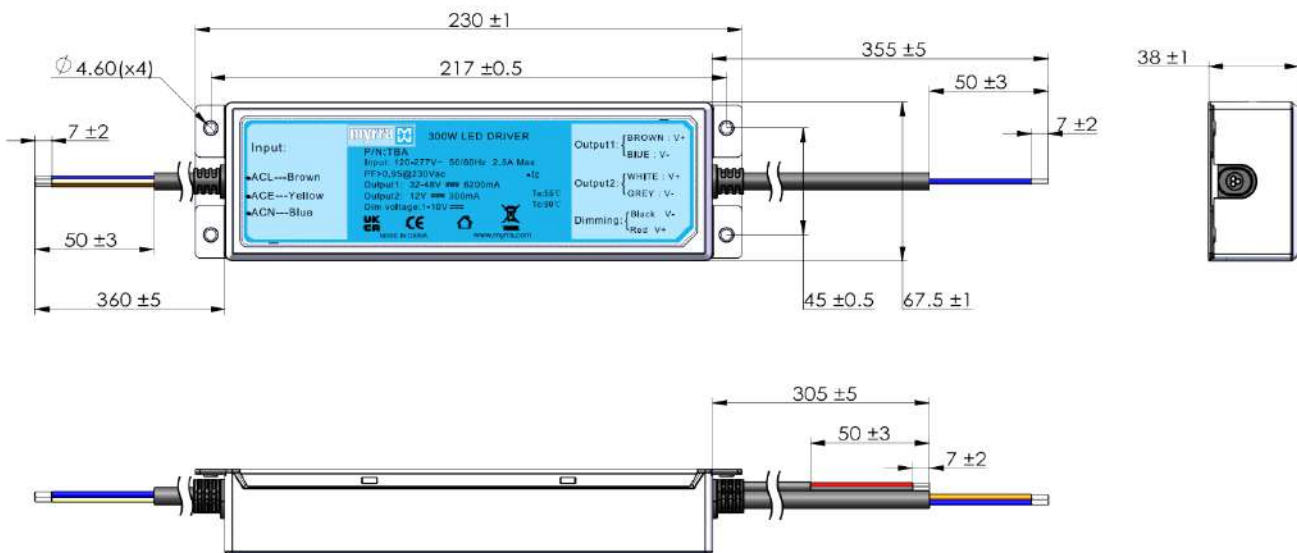
- 300W Small Compact Size- Metal housing design
- Constant Current Mode Output
- Built-in active PFC >0.95
- Output Range : 12VDC - 48VDC
- Input Range: 100VAC - 305VAC/47- 63Hz
- Very Low Standby Power Consumption<0.5W
- IP65 Rating For Indoor Or Outdoor Installations
- 3 In 1 Dimming(1V to 10Vdc or 10V PWM Signal or resistance)
- Safety: Compliance With All Requirements of: IEC/EN61347-1, IEC/EN61347-2-13, UL8750 CALSS 2, CSA C22.2NO.250.13-12,CE,UKCA,IP65
- Materials: Uses UL 94-V0 Resin
- EMC : Conducted And Radiated Emission conform To EN55015,FCC Part 15, CLASS B, IEC/EN61000-3-2 CLASS C, EN61000-3-3 without any additional components.
- Immunity Conform To:EN61000-4-2, IEC/EN61000-4-3, EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8 EN61000-4-11

Part Number	Output Power (W)	Output Voltage (VDC)	Output Current (mA)	Max.Operating Ambient (°C)	Min. Part Efficiency(%)	Input Range
54030	300	12~18	16.70	80	88	100VAC-305VAC
54031	300	15 ~24	12.50	80	88	
54032	300	21.5 ~36	8.33	80	89	
54033	300	25 ~42	7.14	80	90	
54034	300	32 ~48	6.25	80	90	

## DERATING GRAPH



## DIMENSIONS

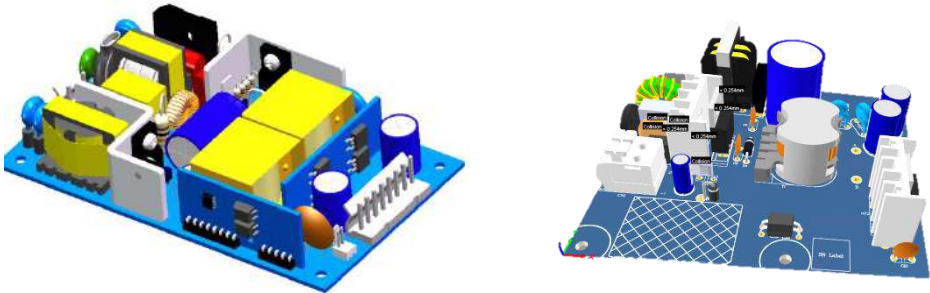


Model: 300 Watt		Specification
AC Input Characteristics	Rated input Voltage	120~277Vac
	Input Voltage Range	100~305Vac
	AC Input Frequency Range	47Hz~63Hz
	Rated AC Input Frequency	50/60Hz
	Input Current	3.0A Max. @108Vac~305Vac@DC output with full load
	Standby Power	0.5W Max. (Meet Requirements Of Energy Star And EC Code Of Conduct)
	Total Harmonic Distortion	≤20% @output load≥75%
	Leakage Current	<0.75mA@277Vac
	Max.No.of PSU on 16A circuit breaker	26 units(circuit breaker of type B)/26 units(circuit breaker of type C)at 230VAC.
DC Output Characteristics	Output Voltage Range	See table
	Output Voltage Line Regulation	± 5%
	Output Voltage Load Regulation	± 5%
	Ripple & Noise	Max. 10%Ip-p@ 120Vac ~277Vac (The measuring will be terminated with a 47uF AL E-Cap and a 0.1uF Cer-Cap. An oscilloscope set at 20MHz bandwidth).
	Efficiency	See table (Meet Requirements Of Energy Star And EC Code Of Conduct)
Protection Characteristics	Over Voltage Protection(LED Open)	The LED driver shall automatic protection(hiccup mode). The LED driver shall auto-recovery normal operation after the deformation is removed. No excessive heat, odour, no safety hazard.
	Output Short Circuit Protection	The LED driver shall withstand a continuous output short without damage in 24 hours ; The short may be applied before power on, or after power on; The LED driver shall resume normal operation after the short is removed, no excessive heat, odour, no safety hazard
	Over Temperature Protection	Hiccup mode, recovers automatically after fault condition is removed.
Environmental	Operation Temperature	-25°C ~ + 80°C (Refer to "Derating Graph")
	Operation Humidity	10~ 90% RH (No Condensing) @ DC output with full load
	Storage Temperature	-10°C~ +35°C
	Storage Humidity	<75%RH
Safety & EMC Requirement	Dielectric Strength	Input to Output 3kVAC,5mA,1 min(3.75kVAC,3s @at the mass production stage) Input to Ground 1.5kVAC, 5mA,1 min Output to Ground 500VAC ,5mA,1 min
	Radiation	Meeting EN55015, FCC part 15, Class B
	Conduction	Meeting EN55015, FCC part 15, Class B
	Safety Standards	Compliance with all requirements of : IP65; UL8750 CLASS2; CSA C22.2NO.250.13-12;IEC/EN61347-1;IEC/EN61347-2-13; CE, UKCA Mark
Reliability Requirement	MTBF	>200K Hours @230VAC input at 55deg.C and DC output with full load >550K Hours @230VAC input at 25deg.C and DC output with full load Calculated in accordance with MIL-HDBK-217-F2
	Burn-In Test	The unit shall be burned in for 2~ 5hours under 230Vac input and DC with full load at an ambient temperature of 30~45 degrees C
	Net Weight	Approximately 530 grams per product unit.
Guarantee	This product meet to RoHS standard	

# Customised Solutions

## Open Frame Type AC/DC Power Supplies 100W to 2000W

Efficiency up to 92%  
Built-in Active PFC Function



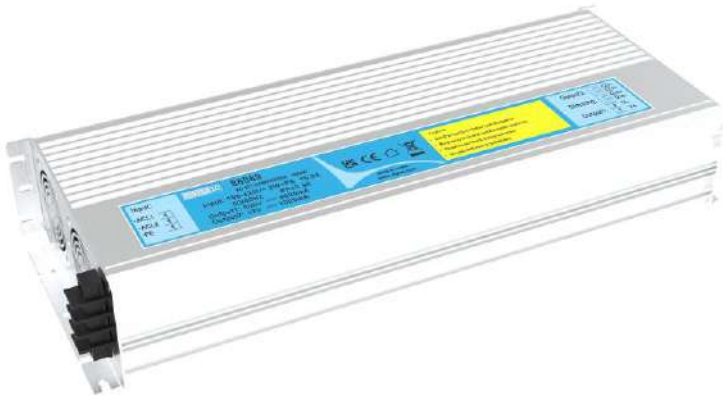
## Grow Lights - LED Drivers 100W ~ 2000W

Efficiency up to 90%  
IP65 Rating, Isolated 3 In 1 dimming: 0 ~ 10Vdc or PWM or Resistance  
Built-in Active PFC Function



## LED Driver & Industrial Power Supplies 100W ~ 2000W

Efficiency up to 92%  
Built-in Active PFC Function



# Application notes for 47000/48000/49000 Series

## 1 – Storage Guide:

### Encapsulated type product:

Storage temperature:  $-10^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ , Storage humidity:  $<75\%RH$

### Non-encapsulated type product:

Storage temperature:  $+5^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ , Storage humidity:  $<75\%RH$

## 2 – Shelf life Guide :

### Encapsulated type product:

To ensure best power supply reliability and life, the customer shall limit the power supply shelf life to no longer than 6 months after delivery. The maximum recommended period before the power supply shall be powered is 18 months from the power supply date code.

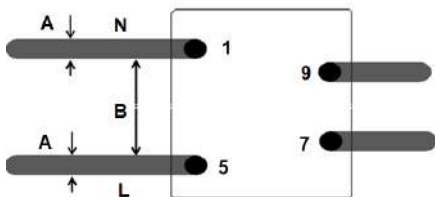
### Non-encapsulated type product:

To ensure best power supply reliability and life, the customer shall limit the power supply shelf life to no longer than 6 months after delivery. The maximum recommended period before the power supply shall be powered is 12 months from the power supply date code.

## 3 –General Storage Conditions:

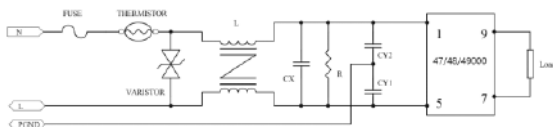
MYRRA power supplies should be stored in their original packaging before use. In the warehouse, there should not be harmful gas, inflammable, explosive products, corrosive chemical products, strong mechanical vibration, shock and strong magnetic field effects. The package box should be stored above ground by at least 20cm height, and 50cm away from any wall, thermal source, and vent.

## 4- Safety and recommend wiring : linewidth $A \geq 2\text{mm}$ , $B \geq 5\text{mm}$ .



## 5- Recommended circuit for applications requiring higher EMC performance :

The 47/48/49 series are already certified as compliant to EN55022 and EN55014 CLASS B for EMC. For this compliance no additional external components are required. Should a more stringent EMC performance be required the circuit below can be proposed



**Fuse:** recommended parameters : 5A to 10A/250Vac, Time-lag type.

**THERMISTOR:** recommended parameters : 2A, 5Ω, 1.8W to 5A D10, 2.5Ω, 2.4W.

**Varistor:** recommended parameters : 14D471, 300Vac, maximum energy 118 Joule.

**L** is a common mode inductor : recommended parameters : 10mH to 30mH

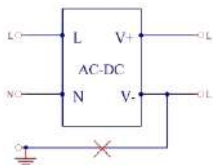
**CX** is a X2 capacitor : recommended parameters : 0.1uF to 0.22uF/275Vac

**CY1 and CY2** are Y capacitors : recommended parameters : 1000pF to 2200pF/400V

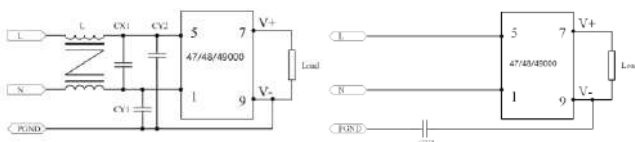
**R** is a resistor : recommended parameters: 1.0MΩ to 3.0 MΩ.

## 6 – Application of the connection to ground :

This application is not supported for by Myrra SMPS products



The following proposed circuit may assist :



**L** : is a common mode inductor, the recommended parameters: 10mH to 30mH

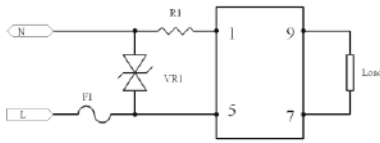
**CX1** : is an X2 capacitor, the recommended parameters : 0.1uF to 0.22uF/275Vac

**CY1 and CY2** are Y capacitors, the recommended parameters : 1000pF to 2200pF/400V



**7 – High surge circuit :**

The 47 / 48/49 Series is tested and certified for a surge level in accordance with IEC61000-4-5 as standard without requiring any additional external components. To extend the surge level to 6KV the external circuit below can be proposed.



VR1 is a varistor, the recommended parameters : 14D471, 300Vac, maximum energy 118 Joule.

R1 is a wire-wound resistor, the recommended parameters : 10R/1W to 10R/3W, resistance wire  $\Phi 0.1$  to 0.23mm. F1 is a fuse, the recommended parameters : 6.3A to 10A/250Vac, Time-lag type.

*The information contained in this document is subject to change without notice.*

## Modified and Custom Solutions

### TECHNICAL SERVICES :

- Alternative DC Output Voltages
- Single, Dual or Triple Output Voltages
- Addition of Signal Pins for AC OK, Remote on/off, sense etc.
- Alternative Power Rating
- Revised 'Hold-up' timing to suit System needs
- Customer specific product 'Branding/Labeling'
- Specific Power Supply Manufacturing Functional Test Profile
- Integrating the Power Supply on the System PCB
- Alternative Power Supply Housing
- Revised DC Output Filtering

### CUSTOMER SERVICES :

- Existing Designs for Modified Standards
- Flexible Manufacturing Batch Sizes
- European Stock-holding locations
- European Engineering and Logistics Support
- Country Specific Distribution Partners
- Manufacturing dynamics for Volume Fluctuations
- Myrra Quality Controlled Design and Manufacturing
- Fast Sample Service

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