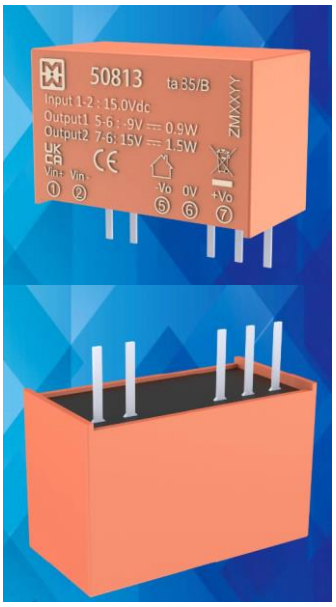
# DC/DC CONVERTER - 2W to 2.76W ISOLATED

## DUAL OUTPUTS

Power Supplies

### 5081x SERIES




## MAIN FEATURES:

- 2W To 2.76W Small Compact Size - PCB Mount
- Operating Altitude Up To 5000m
- Low cost /High Reliability
- Very Low Standby Power Consumption <0.1W
- Better Energetic Efficiency
- 5000Vdc I/O Isolation
- Operating Temperature range:-40°C to +105°C
- Industry standard pinout
- Materials : Uses UL 94-V0 Plastic And Resin
- Safety:Meets All Requirements of IEC/EN62368-1,UL62368-1, CSA C22.2 No.62368-1-14,IEC60601-1, CE, UKCA,
- EMC : Conducted And Radiated Emissions Conform To EN55032,FCC part15 CLASS A/B, EN/IEC61000-3-2 CLASS A, EN61000-3-3,
- Immunity Conforms To EN61000-4-2, EN/IEC61000-4-3, EN61000-4-4, EN61000-4-5,EN61000-4-6,EN61000-4-8,EN610004-11

UK CA CE RoHS

### DATA SHEET

| Part No | Power Rating Watts | Output Voltage (VDC) | Output Current (mA) | Max. Capacitive Load(uF) | Ambient Temp. (℃) | Efficiency Typical | Input Range |
|---|---|---|---|---|---|---|---|
| 50810 | 2.28 | +15 & -4 | 120/120 | 220 | -40°C to +105°C | 81% | 13.5VDC-16.5VDC (15Vdc Typ.) |
| 50811 | 2.0 | +15 & -5 | 100/100 | 220 | -40°C to +105°C | 81% | |
| 50812 | 2.76 | +15 & -8 | 120/120 | 220 | -40°C to +105°C | 81% | |
| 50813 | 2.4 | +15 & -9 | 100/100 | 470 | -40°C to +105°C | 83% | |
| 50814 | 2.7 | +15 & -15 | 100/80 | 220 | -40°C to +105°C | 83% | |

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| Model: 2 To 2.76 Watt | | | Specifications | | | |
|---|---|---|---|---|---|---|
| DC Input Characteristics | Rated DC input Voltage | | 15VDC | | | |
| | DC Input Voltage Range | | 13.5 - 16.5VDC | | | |
| | Max. input impulse voltage | | 23VDC@1s Max. | | | |
| | Protection(Fuse recommended) | | 500mA | | | |
| | Input Filter | | Capacitor type | | | |
| DC Output Voltage | Part No. | Output | Output Load (mA) | Min. (Vdc) | Typ. (Vdc) | Max. (Vdc) |
| | 50810 | +15V | 120 | 14.10 | 14.81 | 15.60 |
| | | -4V | 120 | -3.40 | -3.90 | -5.15 |
| | 50811 | +15V | 100 | 14.40 | 15.00 | 15.90 |
| | | -5V | 100 | -4.75 | -5.00 | -5.75 |
| | 50812 | +15V | 120 | 14.10 | 14.81 | 15.60 |
| | | -8V | 120 | -6.24 | -7.84 | -9.44 |
| | 50813 | +15V | 100 | 14.25 | 15.00 | 15.75 |
| | | -9V | 100 | -7.92 | -8.37 | -8.82 |
| | 50814 | +15V | 100 | 14.25 | 15.00 | 15.75 |
| | | -15V | 80 | -14.40 | -15.00 | -15.90 |
| Line Regulation | +Vo output | | 13.5Vdc to 16.5Vdc input | ±1.5% max. (1.2% typ.) | | |
| | -Vo output | | | ±1.5% max. (1.2% typ.) | | |
| Load Regulation | +Vo output | | 13.5Vdc to 16.5Vdc input | ±15% max. (8% typ.) | | |
| | -Vo output | | | ±15% max. 10% typ.) | | |
| Switching Frequency | 250KHz typ. | | | | | |
| Ripple & Noise | Max 200mVp-p@ Rated DC input, at nominal line (The measuring will be terminated with a 22uF AL E-Cap and a 0.1uF Ceramic-Cap. An oscilloscope set at 20MHz bandwidth) | | | | | |

Please refer to MYRRA's website and catalogue for MYRRA SMPS application notes.

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myrra Power Supplies

### 5081x SERIES

| | | |
|---|---|---|
| | Efficiency | See table |
| 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 with full load |
| | Storage Temperature | -10°C to +35°C |
| | Storage Humidity | < 75%RH |
| | Cooling Method | Ordinary or thermostat |
| Safety & EMC Requirement | Dielectric Strength | Input to Output: 5000Vdc 1mA, 3 secs. |
| | Radiation | Meets EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ). |
| | Conduction | Meets EN55032, FCC part 15, (Class A/B with external components, refer to EMC typical recommended circuit ). |
| | Harmonic Current Disturbance | Meets EN/IEC61000-3-2, Class A |
| | Voltage Fluctuation And Flicker | Meets EN61000-3-3 |
| | Electrostatic Discharge | Meets EN61000-4-2<br>Contact Discharge ±6KV,Air Discharge ±8KV |
| | RF Field Strength Susceptibility | Meets EN/IEC61000-4-3 |
| | Electrical Fast Transient | Meets EN61000-4-4, ±1KV |

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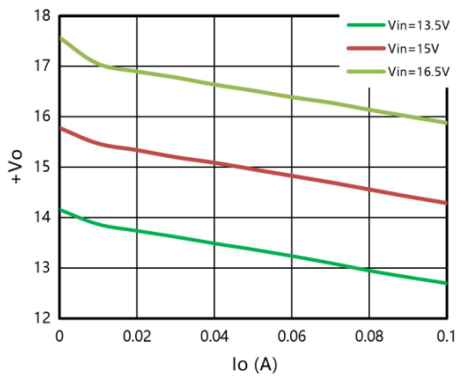
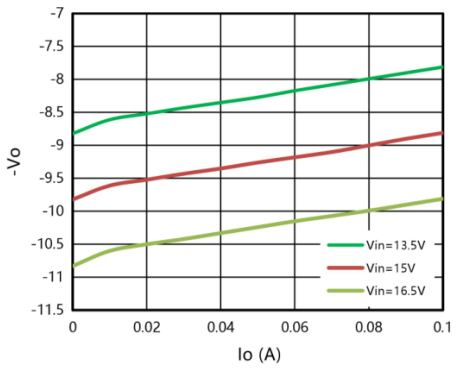
| | | |
|---|---|---|
| **Safety & EMC Requirement** | Lightning Surge | Meets EN61000-4-5, ±1KV (line to line) |
| | Conducted Susceptibility | MeetsEN61000-4-6 |
| | Power Frequency Magnetic Field Susceptibility Test | Meets EN61000-4-8 |
| | Voltage Dips And Interruptions | MeetsEN61000-4-11 |
| | Safety Standards | Meets all requirements of :<br>UL62368-1,CSA C22.2 NO.62368-1-14,<br>IEC/EC62368-1,<br>IEC60601-1<br>CE,UKCA Mark |
| | Isolation Capacitance | 10pF Max. @100KHz/0.1V, |
| **Reliability Requirement** | MTBF | >3500K Hours @ at 25deg.C<br>*Calculated in accordance with MIL-HDBK-217-F2* |
| **Net Weight** | Approximately 4.2 grams per product unit | |
| **Physical size:** | The units do not including PINs of input and output, and dimension is (L)19.5*(H) 9.8*(W) 12.5 ±0.5mm (see appearance drawing) . | |
| **Guarantee** | This product is in accordance with the European RoHS & REACH directives | |

## OUTPUT VOLTAGE vs OUTPUT LOAD

**+Vo vs Output Load (50813 typ.)**




**-Vo vs Output Load (50813 typ.)**

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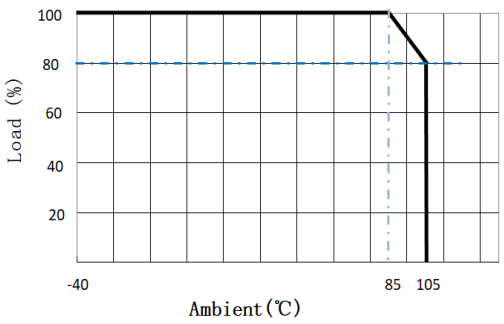
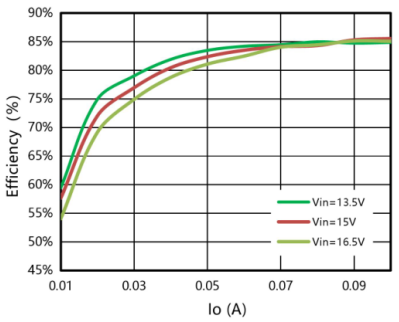
## DERATING GRAPH & Efficiency vs Vin/Output load

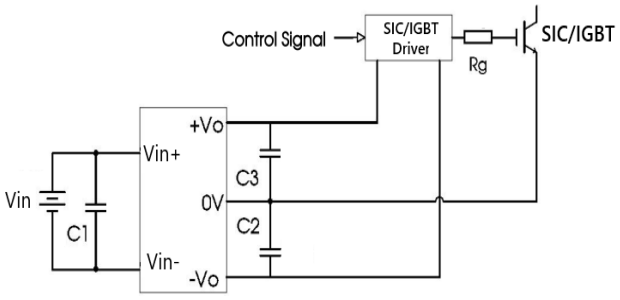
Power Derating Graph




Efficiency vs output load (50813 typ.)



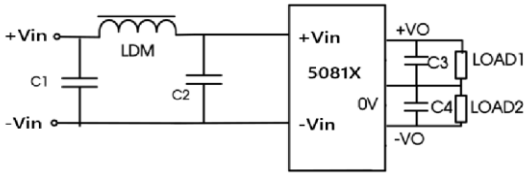

## TYPICAL APPLICATION




C1,C2,C3: 100uF/35V(Low ESR type)

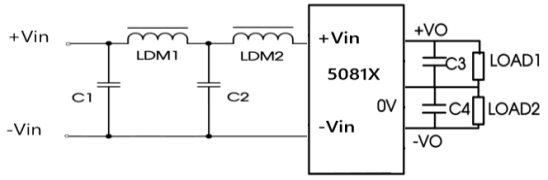
## EMC SUGGESTION

Class A:




C1,C2: 4.7uF/25V
C3,C4: 100uF/50V
LDM: 22 to 47uH

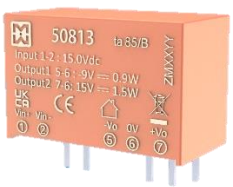
Class B:

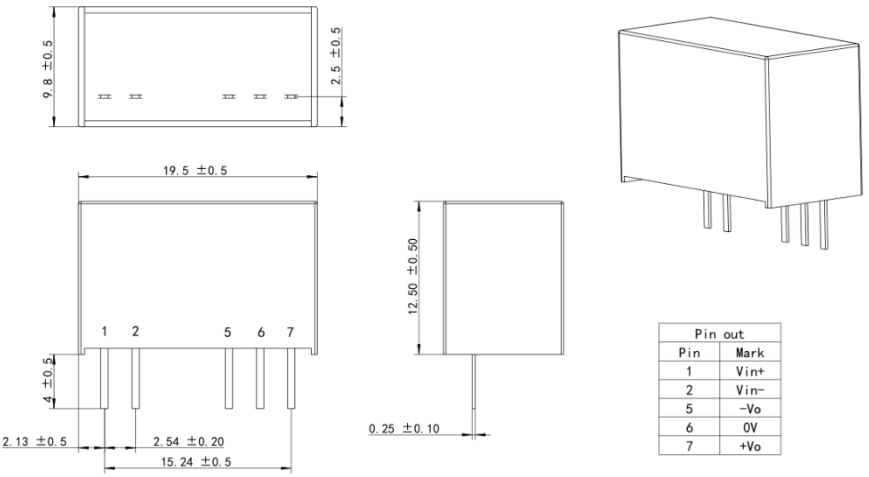



C1,C2: 4.7uF/25V
C3,C4: 100uF/50V
LDM1,LDM2: 15 to 47uH

## DIMENSIONS AND PINOUT 5 PINS

Pin 1: DC Input +Vin
Pin 2: DC Input -Vin
Pin 5 : DC Output -Vout
Pin 6: DC Output 0V
Pin 7: DC Output +Vout




| Pin out | |
|---|---|
| Pin | Mark |
| 1 | Vin+ |
| 2 | Vin- |
| 5 | -Vo |
| 6 | 0V |
| 7 | +Vo |

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