

PR SERIES

1W REGULATED



FEATURES

- SINGLE IN LINE PACKAGE
- UP TO 1W REGULATED OUTPUT POWER
- 100% BURNED IN
- EFFICIENCY UP TO 63%
- INTERNAL SMD TECHNOLOGY
- NO EXTERNAL COMPONENTS REQUIRED
- LOW COST
- 1000VDC ISOLATION
- UL 94V-0 PACKAGE MATERIAL
- RoHS COMPLIANT
- CUSTOM SOLUTIONS AVAILABLE



OUTPUT SPECIFICATIONS

| | |
|---------------------------------------|--------------------------|
| Voltage Setpoint Accuracy | +/-3% max |
| Temperature Coefficient | +/-0.05%/°C |
| Ripple & Noise(20MHz BW) ¹ | 100mVp-p max |
| Line Regulation ² | +/-0.5% max |
| Load Regulation ³ | +/-0.5% max |
| Minimum Load | 10% of Full Load |
| Short Circuit Protection | Current Limit Protection |
| Short Circuit Restart | Automatic |
| Transient Response ⁵ | 100uS max |

INPUT SPECIFICATIONS

| | |
|---------------------|------------------|
| Input Voltage Range | +/-10% max |
| Input Filter | Capacitor Typ |
| Protection | Fuse Recommended |

GENERAL SPECIFICATIONS

| | |
|--------------------------------|--------------------------|
| Efficiency | 50% min |
| Isolation Voltage ⁴ | 1000 VDC min |
| Isolation Resistance | 10 ⁹ ohms min |
| Isolation Capacitance | 80pF max |
| Switching Frequency | 100KHz min |
| MTBF ⁶ | >1,800,000 Hours |
| Weight | 2.3g Typ |
| Case Material | Non-Conductive Plastic |
| Case Size | 19.6mm*7.1mm*10.2mm |
| Conducted Emissions | EN55022 Class A |
| Radiated Emissions | EN55022 Class A |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------|---------------------|
| Operating Temperature | -25 °C to +71 °C |
| Storage Temperature | -55 °C to +125 °C |
| Humidity | 95% max |
| Cooling | Free-Air Convection |

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD, AND 25 °C UNLESS OTHERWISE NOTED.

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² High Line to Low Line.

³ Load Regulation is for output load current change from 10% to 100%.

⁴ For 10 seconds.

⁵ 25% Step Load Change.

⁶ MIL-HDBK-217F @25 °C, Ground Benign.

● **SELECTION GUIDE**
1W OUTPUT

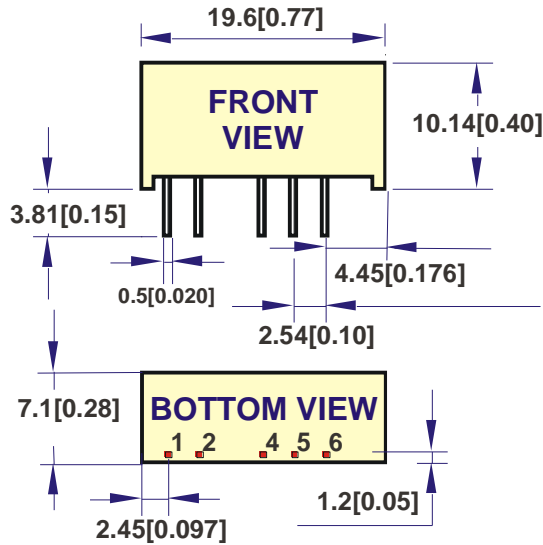
| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT ⁷ CURRENT(mA) | | EFF (%) ⁸ | ISOLATION (VDC) | OUTPUT POWER (Watt) |
|--------------|---------------------|----------------------|---------------------|--------------------------------|---------|----------------------|-----------------|---------------------|
| | | | | FULL LOAD | NO LOAD | | | |
| | | | | PRS-0505C | 4.5-5.5 | | | |
| PRS-0509C | 4.5-5.5 | 9 | 100 | 313 | 32 | 58 | 1000 | 0.9 |
| PRS-0512C | 4.5-5.5 | 12 | 84 | 330 | 32 | 61 | 1000 | 1 |
| PRS-0515C | 4.5-5.5 | 15 | 67 | 322 | 32 | 62 | 1000 | 1 |
| PRS-1205C | 10.8-13.2 | 5 | 200 | 141 | 10 | 59 | 1000 | 1 |
| PRS-1209C | 10.8-13.2 | 9 | 100 | 135 | 14 | 56 | 1000 | 0.9 |
| PRS-1212C | 10.8-13.2 | 12 | 84 | 158 | 38 | 53 | 1000 | 1 |
| PRS-1215C | 10.8-13.2 | 15 | 67 | 132 | 15 | 63 | 1000 | 1 |
| PRS-2405C | 21.6-26.4 | 5 | 200 | 67 | 6 | 62 | 1000 | 1 |
| PRS-2409C | 21.6-26.4 | 9 | 100 | 63 | 6 | 60 | 1000 | 0.9 |
| PRS-2412C | 21.6-26.4 | 12 | 84 | 66 | 6 | 63 | 1000 | 1 |
| PRS-2415C | 21.6-26.4 | 15 | 67 | 68 | 10 | 61 | 1000 | 1 |
| PRS-2424C | 21.6-26.4 | 24 | 42 | 68 | 10 | 61 | 1000 | 1 |

Note: Other input to output voltages may be available. Please contact factory.

⁷ NOMINAL INPUT VOLTAGE.

⁸ NOMINAL INPUT VOLTAGE, FULL LOAD.

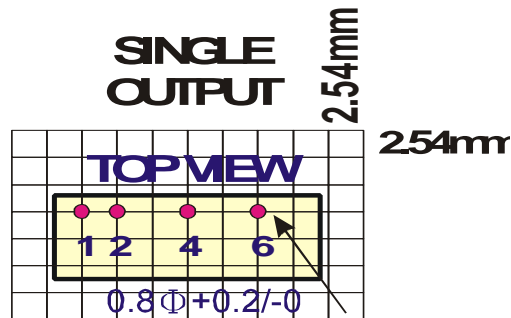
MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



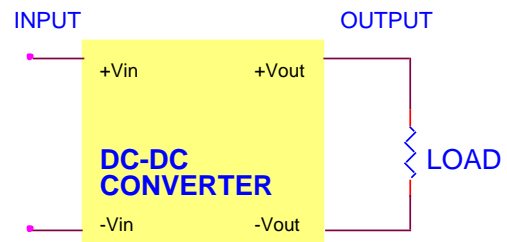
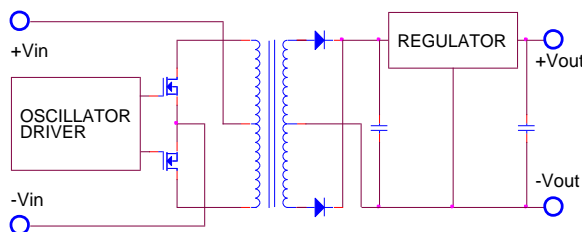
| PIN | SINGLE |
|-----|--------|
| 1 | +Vin |
| 2 | -Vin |
| 4 | -Vout |
| 5 | NP |
| 6 | +Vout |

All dimensions are in mm[inches]

| Tolerance | Millimeters | Inches |
|-----------|-------------|-------------|
| | .X ± 0.25 | .XX ± 0.01 |
| | .XX ± 0.25 | .XXX ± 0.01 |
| Pin | ± 0.05 | ± 0.002 |



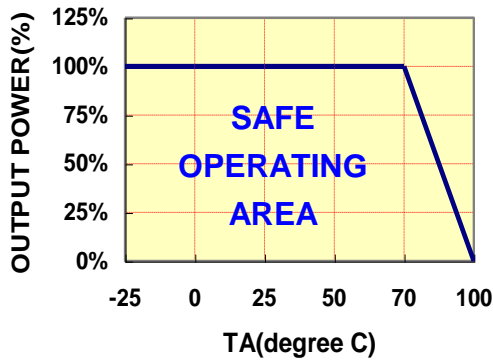
SIMPLIFIED SCHEMATIC • TYPICAL APPLICATIONS



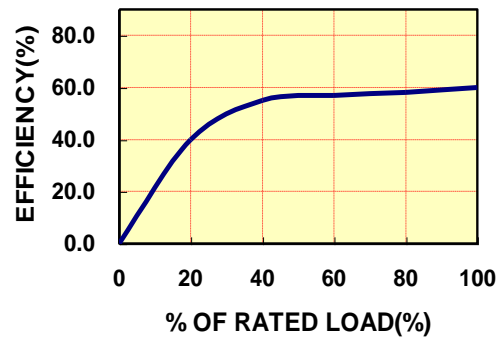
● TYPICAL PERFORMANCE CUREVES

Specifications typical at $t_a=25^{\circ}\text{C}$, nominal input voltage , rated output current unless otherwise specified.

DERATING CURVE



EFFICIENCY VS LOAD



● INPUT FUSE SELECTION GUIDE

| 4.5-5.5V INPUT VOLTAGE(VDC) | 10.8-13.2V INPUT VOLTAGE(VDC) | 21.6-26.4V INPUT VOLTAGE(VDC) |
|--------------------------------|----------------------------------|----------------------------------|
| 500mA Slow-Blow Type | 250mA Slow-Blow Type | 100mA Slow-Blow Type |

Note: Certain applications may require the installation of external fuse in front of the input.

PR SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the PR series.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 250KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 100uF.

We Can Offer EMC-Filter According To EN55011/22 Class B.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.