

PLEASE NOTE:

Only the following models are still available in this series. All others are obsolete:

PWR7000A, PWR7000C, PWR7005A

5 WATTS REGULATED DC/DC CONVERTER

PWR70XX



FEATURES

- HIGH RELIABILITY
- SHORT-CIRCUIT PROTECTED
- FOLDBACK CURRENT LIMIT
- HIGH EFFICIENCY
- LINEAR OUTPUT REGULATION
- TRACKING OUTPUTS
- SIX-SIDED SHIELDING
- INTERNAL INPUT AND OUTPUT FILTERING
- NON-CONDUCTIVE CASE
- INDUSTRY STANDARD PINOUT
- 500Vdc ISOLATION

DESCRIPTION

The PWR70XX Series uses advanced circuit design and packaging technology to realize superior reliability and performance. A 170kHz driven push-pull oscillator is used to ensure stable frequency and non-saturating operation of the input stage. This means there are no high peak voltages or currents like other design topologies, which can severely reduce unit reliability. Reliability is further enhanced by the use of MOSPOWER transistors. These rugged devices permit higher frequency operation with less complicated drive circuitry than is possible with bipolar power transistors. Reduced parts count adds to the reliability of the PWR70XX Series.

Continuous short-circuit protection and foldback current

limiting make the PWR70XX Series rugged devices for use in demanding system applications. These features add to the overall reliability of the PWR70XX Series by reducing the possibility of inadvertently damaging the unit due to an output overload.

The high efficiency of the PWR70XX Series means low internal power dissipation. With less heat dissipated, the PWR70XX Series can operate at higher ambient temperature with no degradation of reliability.

The PWR70XX Series offers the user low cost without sacrificing reliability. The use of surface mounted devices and manufacturing technologies makes it possible to offer premium performance and low cost.

Internet: <http://www.cdpowerelectronics.com>

Power Electronics Division, United States
3400 E Britannia Drive, Tucson, Arizona 85706
Phone: 800.547.2537 Fax: 520.770.9369

Power Electronics Division, Europe
C&D Technologies (Power Electronics) Ltd.
132 Shannon Industrial Estate, Shannon, Co. Clare, Ireland
Tel: +353.61.474.133 Fax: +353.61.474.141

ELECTRICAL SPECIFICATIONS

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

| MODEL | NOMINAL INPUT VOLTAGE (V _{DC}) | RATED OUTPUT VOLTAGE (V _{DC}) | RATED OUTPUT CURRENT (mA) | INPUT CURRENT | | REFLECTED RIPPLE CURRENT (mAp-p) | EFFICIENCY (%) |
|--------------------|--|---|---------------------------|---------------|-----------------|----------------------------------|----------------|
| | | | | NO LOAD (mA) | RATED LOAD (mA) | | |
| PWR7000 | 5 | 5 | 1000 | 50 | 1580 | 30 | 63 |
| PWR7004 | 5 | ±12 | ±210 | 50 | 1490 | 30 | 67 |
| PWR7005 | 5 | ±15 | ±167 | 50 | 1450 | 30 | 69 |
| PWR7006 | 12 | -5 | 1000 | 30 | 620 | 30 | 67 |
| PWR7010 | 12 | ±12 | ±210 | 30 | 580 | 30 | 72 |
| PWR7011 | 12 | ±15 | ±167 | 30 | 570 | 30 | 73 |
| PWR7012 | 15 | -5 | 1000 | 30 | 500 | 30 | 67 |
| PWR7016 | 15 | ±12 | ±210 | 30 | 480 | 30 | 70 |
| PWR7017 | 15 | ±15 | ±167 | 30 | 460 | 30 | 73 |
| PWR7018 | 24 | -5 | 1000 | 30 | 320 | 30 | 65 |
| PWR7022 | 24 | ±12 | ±210 | 30 | 310 | 30 | 67 |
| PWR7023 | 24 | ±15 | ±190 | 30 | 355 | 30 | 68 |
| PWR7030 | 48 | -5 | 1000 | 20 | 165 | 30 | 63 |
| PWR7033 | 48 | ±5 | ±500 | 20 | 168 | 30 | 62 |

NOTE: Other input to output voltages may be available. Please consult factory.

COMMON SPECIFICATIONS

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

| PARAMETER | CONDITIONS | MIN | TYP | MAX | UNITS |
|---|---|--------------------------------------|--|--------------------------------------|---|
| INPUT Voltage Range | | 4.75 10.8 13.5 21.6 43.2 | 5 12 15 24 48 | 5.25 13.2 16.5 26.5 52.8 | V _{DC} V _{DC} V _{DC} V _{DC} V _{DC} |
| ISOLATION Rated Voltage Test Voltage Resistance Capacitance Leakage Current | 60Hz, 10 Seconds V _{ISO} = 240V _{AC} , 60Hz | 500 500 | 10 80 10 | 18 | V _{DC} V _{pk} GΩ pF μArms |
| OUTPUT Rated Power Voltage Setpoint Accuracy Temperature Coefficient Ripple and Noise Tracking | Rated Load, Nominal V _{IN} BW = DC to 10MHz BW = DC to 2MHz -V _{OUT} Tracks +V _{OUT} | | 5 ±0.02 30 5 ±1 | ±1 | W % %/°C mVp-p mVrms % |
| TRANSIENT RESPONSE 5V Output Models (Within ±1%) All Other Models (Within ±0.1%) | Rated Load to No Load No Load to Rated Load Rated Load to No Load No Load to Rated Load | | 50 100 30 100 | | μs μs μs μs |
| REGULATION Line Regulation Load Regulation 5V Output Models All Other Models | High Line to Low Line Rated Load to No Load | | ±0.02 ±0.04 ±0.02 | | % % % |
| GENERAL Switching Frequency Package Weight MTTF per MIL-HDBK-217, Rev. E* Ground Benign Fixed Ground Naval Sheltered Airborne Uninhabited Fighter | Circuit Stress Method T _A = +25°C T _A = +70°C T _A = +35°C T _A = +35°C T _A = +35°C | | 170 50 762,000 46,000 230,000 127,000 29,000 | | kHz g Hr Hr Hr Hr Hr |
| TEMPERATURE Specification Operation Storage | | 0 -25 -40 | +25 | +70 +85 +110 | °C °C °C |

ABSOLUTE MAXIMUM RATINGS

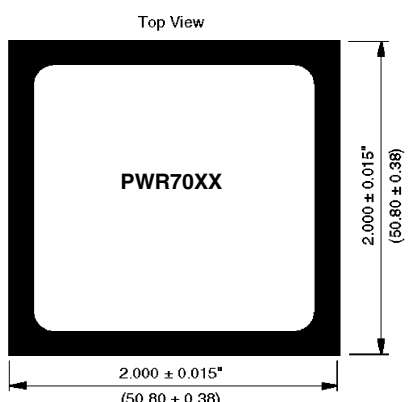
| | |
|--|------------|
| Output Short-Circuit Duration | Continuous |
| Internal Power Dissipation | 3.5W |
| Lead Temperature (soldering, 10 seconds max) | +300°C |

ORDERING INFORMATION

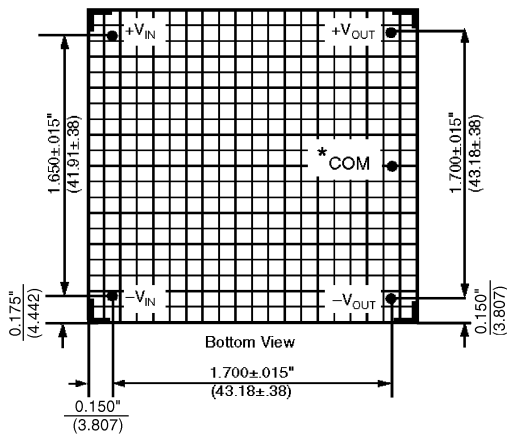
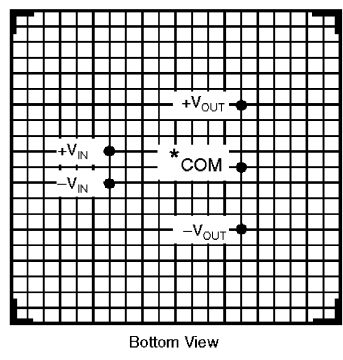
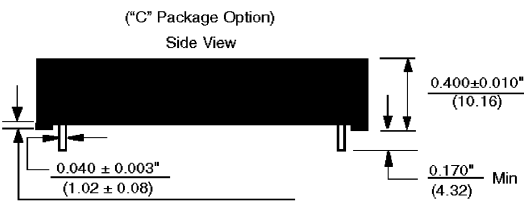
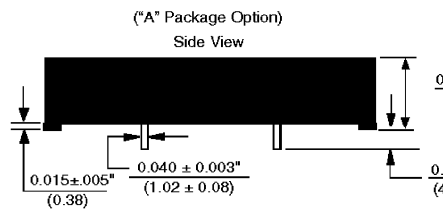
| | | | |
|-------------------------------|---|---|----|
| Device Family | PWR 70XX | A | /H |
| PWR Indicates DC/DC Converter | | | |
| Model Number | Selected from Table of Electrical Characteristics | | |
| Package Option | A or C (see Mechanical section) | | |
| Screening Option | | | |

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MECHANICAL



NOTES: All dimensions are in inches (millimeters).
 GRID: 0.1 inches (2.54 millimeters).
 * Common pin not present on single output models.
 Marked with: specific model ordered, date code, job code.
 PIN PLACEMENT TOLERANCE: ±0.015"
 MATERIAL: Units are encapsulated in a low thermal resistance molding compound which has excellent chemical resistance, wide operating temperature range, and good electrical properties under high humidity environments. The encapsulant and outer shell of the unit have UL94V-0 ratings. Lead material is brass with a solder plated surface to allow ease of solderability.



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