

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.

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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

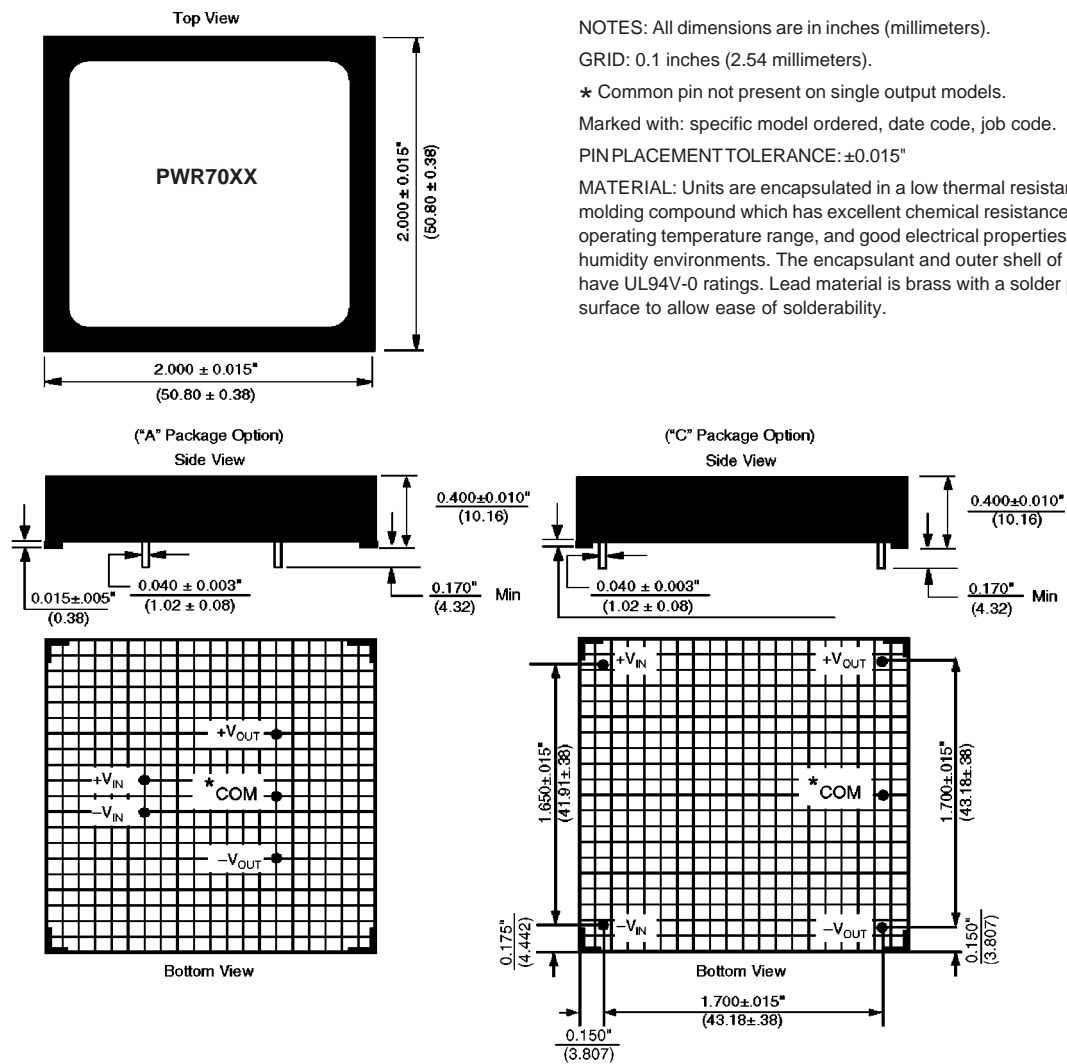
ABSOLUTE MAXIMUM RATINGS

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 _____

MECHANICAL



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