POWER CONVERTIBLES™

PWR73XX SERIES

3 WATTS
REGULATED

DC/DC CONVERTERS

LOW COST INDUSTRY STANDARD

FEATURES

- HIGH RELIABILITY
- EXTENDED TEMPERATURE RANGE
- 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 PWR73XX 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 PWR73XX Series.

Indefinite short-circuit protection and foldback current limiting make the PWR73XX Series rugged devices for use in demanding system applications. These features add to the overall reliability of the PWR73XX Series by reducing the possibility of inadvertently damaging the unit due to an output overload.

The high efficiency of the PWR73XX Series means less internal power dissipation than competitive units. With less heat to have to dissipate, the PWR73XX Series can operate at higher ambient temperature with no degradation of reliable operation.

The PWR73XX 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.

ELECTRICAL SPECIFICATIONS

Specifications typical at T_A = +25°C, nominal input voltage, rated output current unless otherwise specified.

MODEL	NOMINAL Input Voltage (VDC)	Rated OUTput Voltage (VDC)	RATED OUTPUT CURRENT (mA)	Input Current		Reflected Ripple Current (mAp-p)	EFFICIENCY (%)
				No Load (mA)	Full Load (mA)		
PWR7300	5	5	600	45	960	20	62
PWR7304	5	±12	±125	45	940	20	64
PWR7305	5	±15	±100	45	920	20	65
PWR7306	12	5	600	35	390	20	64
PWR7310	12	±12	±125	35	385	20	65
PWR7311	12	±15	±100	35	380	20	66
PWR7312	15	5	600	30	310	20	65
PWR7316	15	±12	±125	30	305	20	65
PWR7317	15	±15	±100	30	300	20	66
PWR7318	24	5	600	35	200	20	63
PWR7322	24	±12	±125	35	195	20	63
PWR7323	24	±15	±100	35	190	20	65

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

COMMON SPECIFICATIONS

Specifications typical at T_A = +25°C, nominal input voltage, rated output current unless otherwise specified.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Voltage Range		4.65	5	5.5	VDC
		10.8	12	13.2	VDC
		13.5	15	16.5	VDC
		21.6	24	26.5	VDC
ISOLATION					
Rated Voltage		500			VDC
Resistance			10		GΩ
Capacitance			80		pF
Leakage Current	V_{ISO} = 240VAC, 60Hz		10		µArms
OUTPUT					
Rated Power			3		W
Voltage Accuracy				±1	%
Temperature Coefficient			±0.02		%/°C
Ripple and Noise	BW = DC to 10MHz		20		mVp-p
	BW = DC to 2MHz		5		mVrms
Tracking	$-V_{OUT}$ Tracks $+V_{OUT}$		±1		%
TRANSIENT RESPONSE					
5V Output Models (Within ±1%)	Full Load to No Load		40		µs
	No Load to Full Load		30		µs
All Other Models (Within ±0.1%)	Full Load to No Load		50		µs
	No Load to Full Load		40		µs
REGULATION					
Line Regulation	High Line to Low Line		±0.01		%
Load Regulation	Full Load to No Load				
5V Output Models			±0.02		%
All Other Models			±0.01		%
GENERAL					
Switching Frequency			170		kHz
MTTF per MIL-HDBK-217, Rev. E	Circuit Stress Method				
Ground Benign	T_A = +25°C		779,000		hrs
	T_A = +85°C		19,500		hrs
Fixed Ground	T_A = +35°C		248,500		hrs
Naval Sheltered	T_A = +35°C		133,500		hrs
Airborne Uninhabited Fighter	T_A = +35°C		30,000		hrs
TEMPERATURE					
Specification	No Power Derating	0		+85	°C
Operation		-25		+100	°C
Storage		-40		+105	°C

ABSOLUTE MAXIMUM RATINGS

Output Short-Circuit Duration	Continuous
Internal Power Dissipation	2.2W
Junction Temperature	+100°C
Package Thermal Resistance	5°C/W
Lead Temperature (soldering, 10s max)	+300°C

ORDERING INFORMATION

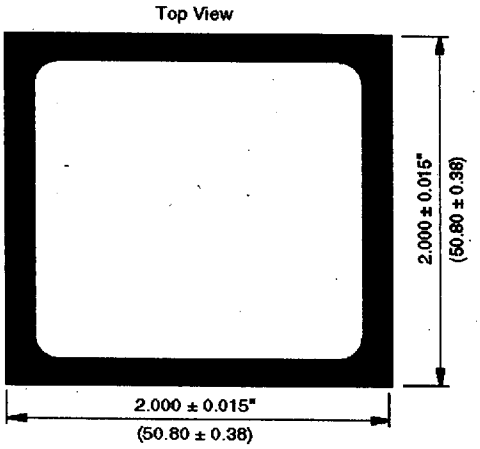
PWR 73XX A

Device Family
PWR Indicates DC/DC Converter

Model Number
Selected from Table of Electrical Characteristics

Package Option
A or C (see Mechanical section)

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 Iso-ThermoFlex™, 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.