Murata Power Solutions

PWR70XXAC

5 Watt Regulated DC-DC Converter

OBSOLETE PRODUCT

Contact Factory for Replacement Model

FEATURES

- HIGH RELIABILITY
- SHORT-CIRCUIT PROTECTED
- HIGH EFFICIENCY
- LINEAR OUTPUT REGULATED
- TRACKING OUTPUTS
- SIX-SIDED SHIELDING
- INTERNAL INPUT AND OUTPUT FILTERING
- NON-CONDUCTIVE CASE
- INDUSTRY STANDARD PINOUT
- 500VDC ISOLATION

DESCRIPTION

The PWR70XXAC 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 PWR70XXAC Series.

Continuous short-circuit protection and foldback current limiting make the PWR70XXAC Series rugged devices for use in demanding system applications. These features add to the overall reliability of the PWR70XXAC Series by reducing the possibility of inadvertently damaging the unit due to an output overload.

The high efficiency of the PWR70XXAC Series means low internal power dissipation. With less heat dissipated, the PWR70XXAC Series can operate at higher ambient temperature with no degradation of reliablility.

The PWR70XXAC 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.

RoHS COMPLIANT

For full details go to www.murata-ps.com/rohs

ISO9001 CERTIFIED

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)	RATED LOAD (mA)		
~~PWR7000AC~~	~~5~~	~~5~~	~~1000~~	~~50~~	~~1580~~	~~30~~	~~63~~
PWR7004AC	5	±12	±210	50	1490	30	67
PWR7005AC	5	±15	±167	50	1450	30	69
~~PWR7006AC~~	~~12~~	~~5~~	~~1000~~	~~30~~	~~620~~	~~30~~	~~67~~
~~PWR7010AC~~	~~12~~	~~±12~~	~~±210~~	~~30~~	~~580~~	~~30~~	~~72~~
~~PWR7011AC~~	~~12~~	~~±15~~	~~±167~~	~~30~~	~~570~~	~~30~~	~~73~~
~~PWR7012AC~~	~~15~~	~~5~~	~~1000~~	~~30~~	~~500~~	~~30~~	~~67~~
~~PWR7016AC~~	~~15~~	~~±12~~	~~±210~~	~~30~~	~~480~~	~~30~~	~~70~~
~~PWR7017AC~~	~~15~~	~~±15~~	~~±167~~	~~30~~	~~460~~	~~30~~	~~73~~
~~PWR7018AC~~	~~24~~	~~5~~	~~1000~~	~~30~~	~~320~~	~~30~~	~~65~~
~~PWR7022AC~~	~~24~~	~~±12~~	~~±210~~	~~30~~	~~310~~	~~30~~	~~67~~
~~PWR7023AC~~	~~24~~	~~±15~~	~~±190~~	~~30~~	~~355~~	~~30~~	~~68~~
~~PWR7030AC~~	~~48~~	~~5~~	~~1000~~	~~20~~	~~165~~	~~30~~	~~63~~
~~PWR7033AC~~	~~48~~	~~±5~~	~~±500~~	~~20~~	~~168~~	~~30~~	~~62~~

Note: Other input to output voltages may be available. Please contact 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		4.75	5	5.25	VDC
		10.8	12	13.2	VDC
		13.5	15	16.5	VDC
		21.6	24	26.5	VDC
		43.2	48	52.8	VDC
ISOLATION					
Rated Voltage		500			VDC
Test Voltage	60 Hz, 10 Seconds	500			Vpk
Resistance			10		GΩ
Capacitance			80		pF
Leakage Current	V_{ISO}= 240VAC, 60Hz		10	10	µArms
OUTPUT					
Rated Power			5		W
Voltage Setpoint Accuracy	Rated Load, Nominal VIN			±1	%
Temperature Coefficent			±0.02		%/°C
Ripple & Noise	BW = DC to 10MHz		30		mVp-p
	BW =10Hz to 2MHz		2		mVrms
Tracking	-VOUT Tracks +VOUT		±1		%
TRANSIENT RESPONSE					
5V Output Models (Within ±1%)	Rated Load to No Load		50		µs
	No Load to Rated Load		100		µs
All Other Models (Within ±0.1%)	Rated Load to No Load		30		µs
	No Load to Rated Load		100		µs
REGULATION					
Line Regulation	High Line to Low Line		±0.02		%
Load Regulation	Rated Load to No Load				%
5V Output Models			±0.04		%
All Other Models			±0.02		%
GENERAL					
Switching Frequency			170		kHz
Package Weight			50		g
MTTF per MIL-HDBK-217, Rev. F	Circuit Stress Method				
Ground Benign	TA =+25°C		762,000		Hr
	TA =+70°C		46,000		Hr
Fixed Ground	TA =+35°C		230,000		Hr
Naval Sheltered	TA =+35°C		127,000		Hr
Airborne Uninhabited Fighter	TA =+35°C		29,000		Hr
Moisture Sensitivity Level (MSL)	IPC/JEDEC J-STD-20		2		
TEMPERATURE					
Specification		0	+25	+70	°C
Operation		-25		+85	°C
Storage		-40		+110	°C

ABSOLUTE MAXIMUM RATINGS

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

ORDERING INFORMATION

PWR 70xx A C

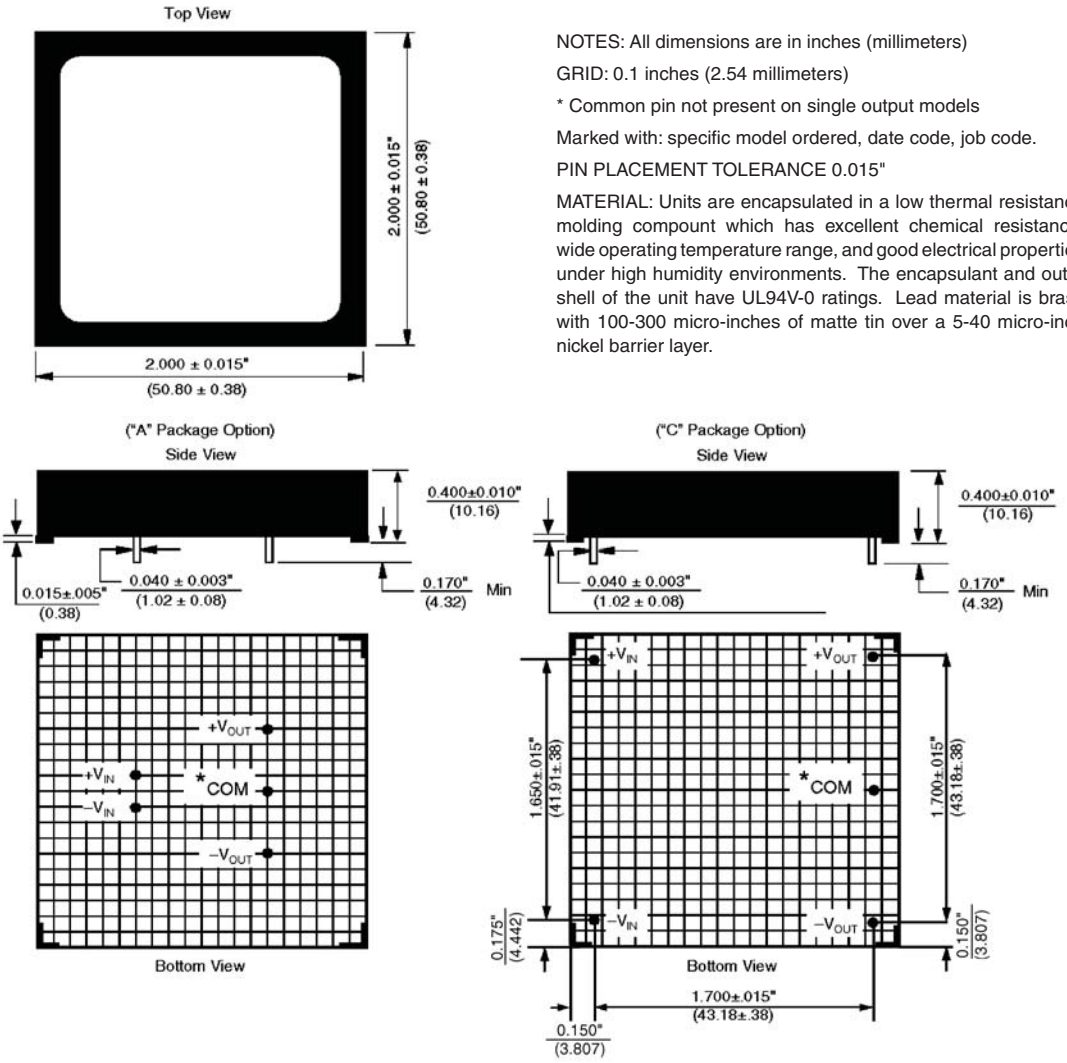
Device Family
PWR Indicates DC/DC Converter

Model Number
Se;ected from Table of Electrical Characteristics

Package Option
A or C (see mechanical section

RoHS Compliant

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 100-300 micro-inches of matte tin over a 5-40 micro-inch nickel barrier layer.

THROUGH-HOLE SOLDERING INFORMATION

These devices are intended for wave soldering or manual soldering.
They are not intended to be subject to surface mount processes under any circumstances.

The normal wave soldering process can be used with these devices where the device is subjected to a maximum wave temperature of 260°C for a period of no more than 10 seconds. Within this time and temperature range, the integrity of the device's plastic body will not be compromised and internal temperatures within the converter will not exceed 175°C. Care should be taken to control manual soldering limits identical to that of wave soldering.

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ISO 9001 and 14001 REGISTERED

This product is subject to the following operating requirements and the Life and Safety Critical Application Sales Policy:
Refer to: http://www.murata-ps.com/requirements/