PWR1726AC

1.5 Watt Unregulated DC/DC Converter

FEATURES

- 8000v Isolation Test Voltage
- No External Parts Required
- Remote On/Off
- Low-Barrier Capacitance
- RoHS Compliant
- Synchronizable

APPLICATIONS

- Biomedical Data Acquisition
- Industrial Process Equipment
- Data Acquisition
- Test Equipment
- Portable Equipment

DESCRIPTION

The PWR1726AC is a single-channel, bipolar output DC/DC/ converter designed for those applications where high-isolation voltage and low-barrier capacitance are critical for system reliability and integrity.

Calculated mean-time-to-failure (MTTF) is in excess of 100 years at an ambient temperature of +25°C and at rated output power. The performance of the PWR1726AC is not derated over its entire specified temperature range of -25°C to +85°C.

Synchronization of the PWR1726AC may be accomplished simply by connecting the Sync-In pin of one unit to the Sync-In pin of another unit. Up to 8 converters may be synchronized in this manner.

The PWR1726AC provides a plus and minus output voltage that is approximately equal to the magnitude of the input voltage. The unit operates over an input voltage range of 7VDC to 16VDC.

Each PWR1726AC isolation barrier is tested per the method set forth by UL544, VDE750, and CSA C22.2.

RoHS COMPLIANT

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

ISO9001 CERTIFIED

COMMON SPECIFICATIONS

Specifications typical at T_A = +25°C, V_{IN} = 15VDC, I_{LOAD} = ±50mA and in free-running mode unless otherwise noted.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Rated Voltage			12		VDC
Voltage Range		7		16	VDC
Input Current	I_{LOAD} = 0		30		mA
	I_{LOAD} = Rated Load		145	165	mA
	Short Circuit		115		mA
Ripple Current	I_{LOAD} = Rated Load		15		mAp-p
ISOLATION					
Voltage Rated Continuous					
AC, 60Hz		3500			Vrms
DC		5000			VDC
Test Voltage	60sec, 60Hz	8000			Vpk
Resistance			10		GΩ
Capacitance			10		pF
Leakage Current	V_{ISO} = 240VAC, 60Hz		1	2	µA
OUTPUT					
Rated Voltage	I_{LOAD} = Rated Load		±15		VDC
Voltage Range	I_{LOAD} Rated Load	±14.25		±15.75	VDC
	I_{LOAD} = OmA	±16.0	±16.5	±18.0	VDC
Rated Current	Balanced Loads		±50		mA
Current Range	Balanced Loads	0		±90	mA
	Single Ended	0		180	mA
Line Regulation	7VDC < V_{IN} < 18VDC		1.16		mV/mV
Load Regulation	No Load < I_{OUT} < ±50mA			0.3	%/mA
Ripple Voltage	BW = DC to 10MHz				
	I_{LOAD} = 0		15		mVp-p
	I_{LOAD} = Rated Load		50		mVp-p
					(referenced to common)
GENERAL					
MTTF	Calculated per MIL - HDBK - 217 Rev. E Ground, Benign 25° C		1.2		MHr
Switching Frequency			120		kHz
TEMPERATURE					
Specification		-25	+25	+85	°C
Operation		-40		+100	°C
Storage		-55		+110	°C

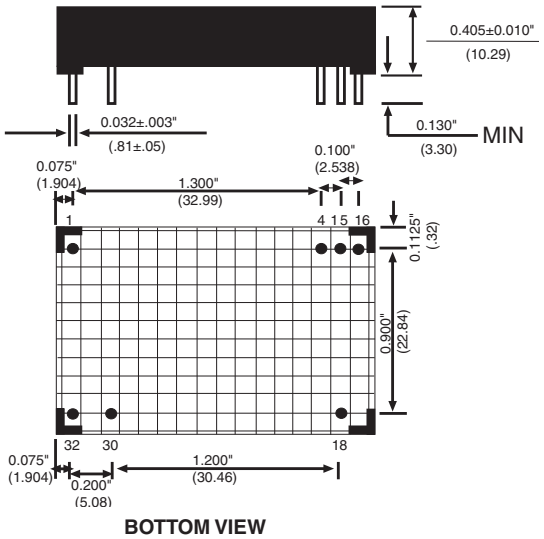
NOTE: Other input and output voltages may be available upon request. Please consult the factory.

MECHANICAL

TOP VIEW

PIN CONNECTIONS	
1	-Vout
14	-Vin
15	Sync-In
16	+Vin
18	REMOTE ON/OFF
30	COMMON
32	+Vout

SIDE VIEW



BOTTOM VIEW

NOTES:

All dimensions are in inches (millimeters).

GRID: 0.100 inches (2.54 millimeters)

PIN PLACEMENT TOLERANCE: ±0.015"

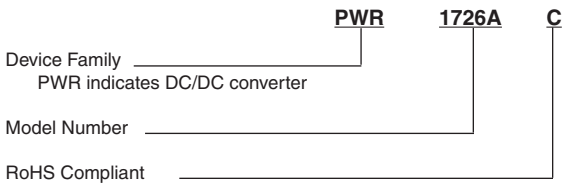
To ensure proper operation, the remote on/off pin should be connected to +Vin when the unit is on.

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; lead finish is matte Sn (100 microinches minimum) over Ni (40-80 microinches)

ABSOLUTE MAXIMUM RATINGS

Input Voltage 16VDC
Output Short-Circuit Duration .....Continuous
Internal Power Dissipation 2W
Lead Temperature (soldering, 10 seconds max) .....+300°C

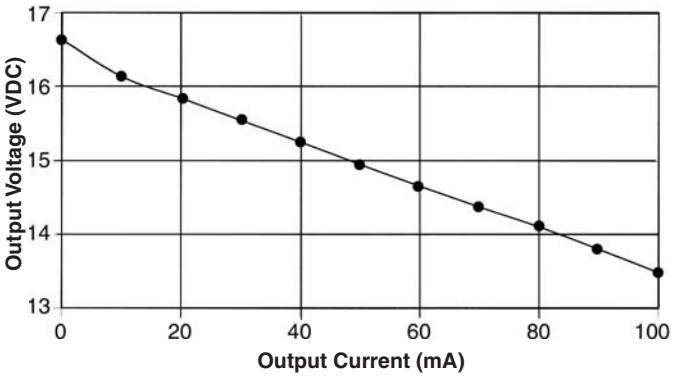
ORDERING INFORMATION



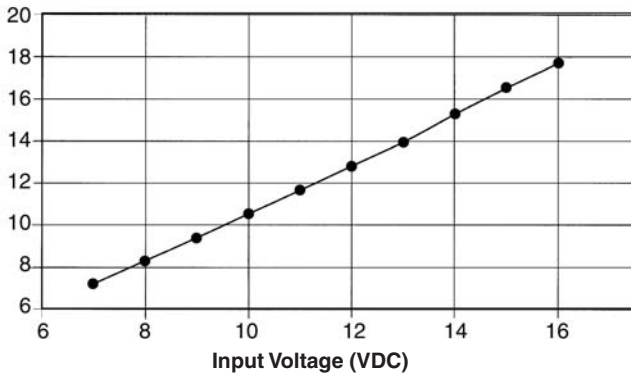
TYPICAL PERFORMANCE CURVES

TA=+25°C, Rated Input Voltage, Rated Output Current unless otherwise noted

OUTPUT VOLTAGE VS. OUTPUT CURRENT



OUTPUT VOLTAGE VS. INPUT VOLTAGE



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.

SYNCHRONIZATION INFORMATION

The unit may be synchronized to an external clock. Recommended frequency is a minimum of 110kHz and a maximum of 250kHz. The sync signal must be a square wave pulse with a peak of 7.5V min to 12V max, the amplitude being referenced to -Vin.

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