

## 5 WATTS REGULATED DC/DC CONVERTERS

### PWR1546A



#### FEATURES

- 1mVp-p MAXIMUM OUTPUT NOISE
- 5W RATED OUTPUT POWER
- SHORT-CIRCUIT PROTECTION
- SIX-SIDED SHIELDING
- INTERNAL INPUT AND OUTPUT FILTERING
- FULLY REGULATED

#### APPLICATIONS

- HIGH RESOLUTION DATA ACQUISITION
- PRECISION TEST EQUIPMENT
- HIGH GAIN AMPLIFIERS
- PRECISION INSTRUMENTATION

#### DESCRIPTION

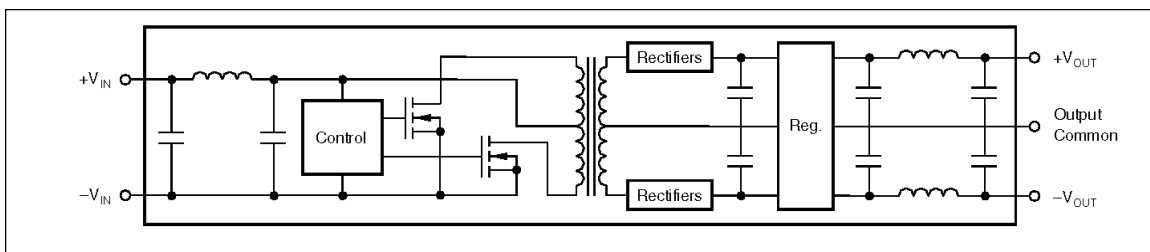
The PWR1546A has a maximum of 1mVp-p output noise. This unit incorporates input and output filtering along with an internal shield, giving full six-sided shielding that keeps unwanted radiated noise from your circuit. No external parts are required to meet the 1mVp-p maximum guaranteed output noise.

The PWR1546A is a miniature DC/DC converter providing dual isolated  $\pm 15\text{VDC}$  outputs from a single  $+5\text{VDC}$  input. Each output will supply full-rated current over the entire

specification range. Each output is regulated and is protected against all shorts. The isolation barrier is guaranteed to be 750VDC.

Surface-mounted components and thermal encapsulant allow superior reliability and excellent thermal dissipation. The calculated MTTF (per MIL-HDBK-217 Rev. E, Circuit-Stress Analysis Method) is in excess of 100 years at 25°C.

#### SIMPLIFIED CIRCUIT DIAGRAM



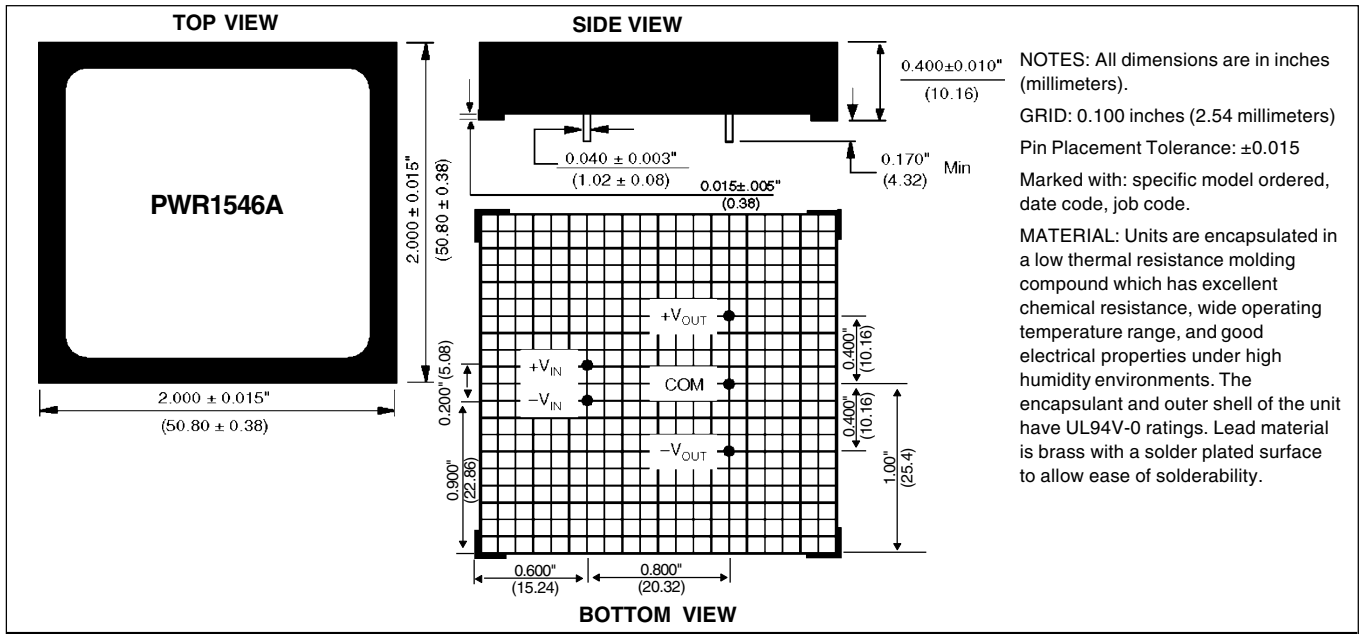
# COMMON SPECIFICATIONS

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

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>INPUT</b>					
Rated Voltage			5.0		$V_{DC}$
Voltage Range		4.5		5.5	$V_{DC}$
Current	$I_{LOAD} = 0$		80		mA
Reflected Ripple Current	$I_{LOAD} = \text{Rated Output}$		1650		mA
	$BW = \text{DC to } 10\text{MHz}$		18		mAp-p
<b>ISOLATION</b>					
Rated Voltage		750			$V_{DC}$
Test Voltage	60 Hz, 10 seconds	750			Vpk
Resistance			10		$G\Omega$
Capacitance			110		pF
Leakage Current	$V_{ISO} = 240\text{VAC}, 60\text{HZ}$			15	$\mu\text{Arms}$
<b>OUTPUT</b>					
Rated Voltage			$\pm 15$		$V_{DC}$
Voltage Setpoint Accuracy	Rated Load, Nominal $V_{IN}$			$\pm 1$	%
Voltage Balance				$\pm 0.5$	%
Temperature Coefficient			$\pm 0.01$		$\%/^\circ\text{C}$
Rated Current			$\pm 167$		mA
Transient Recovery Time	To 0.1% of Final Value		10		ms
<b>REGULATION</b>					
Line	4.5V <sub>DC</sub> to 5.5V <sub>DC</sub>		$\pm 0.02$		%
Load	0mA to $\pm 167\text{mA}$		0.02		%
<b>OUTPUT NOISE</b>					
Ripple and Noise	$BW = \text{DC to } 10\text{MHz}$		0.6	1.0	mVp-p
<b>GENERAL</b>					
Efficiency			60		%
Package Weight			50		g
Switching Frequency			50		kHz
MTTF per MIL-HDBK-217, RevE.	Circuit Stress Method, $T_A = +25^\circ\text{C}$		890		kHr
<b>TEMPERATURE</b>					
Specification		-25	+25	+85	$^\circ\text{C}$
Operating		-40		+100	$^\circ\text{C}$
Storage		-55		+125	$^\circ\text{C}$

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

## MECHANICAL



# ABSOLUTE MAXIMUM RATINGS

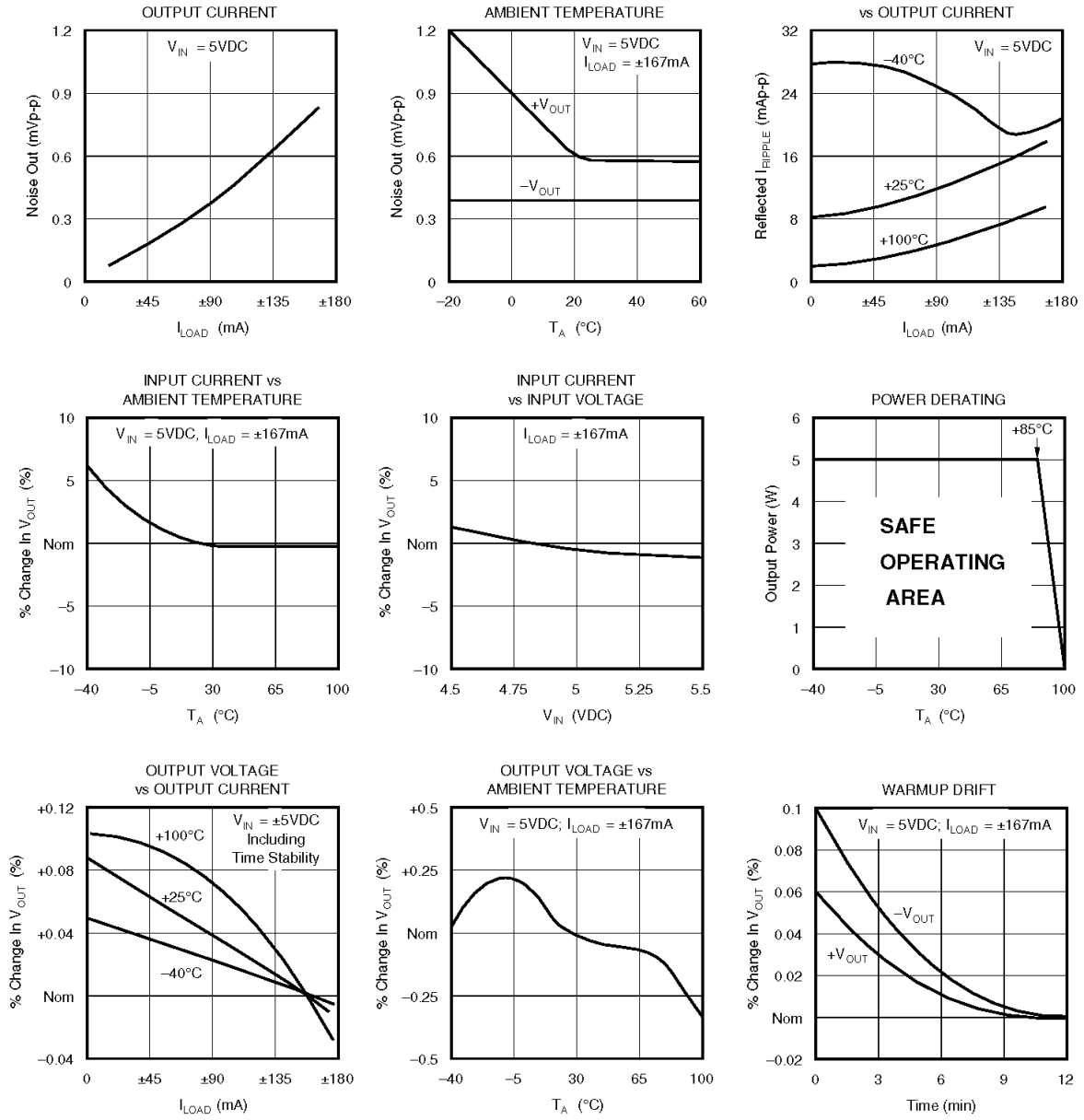
Output Short-Circuit Duration .....	Continuous
Internal Power Dissipation .....	4W
Lead Temperature (soldering, 10 seconds max) .....	+300°C

# ORDERING INFORMATION

Device Family _____	<b>PWR</b>	<b>1546A</b>	<b>/H</b>
PWR indicates DC/DC converter			
Model Number _____			
Screening Option _____			

# TYPICAL PERFORMANCE CURVES

T<sub>A</sub> = +25°C, V<sub>IN</sub> = 5VDC, I<sub>LOAD</sub> = ±167mA unless otherwise noted.



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