

General Specifications

Efficiency	(See Efficiency Table)	94% max.
Insulation voltage		Non-isolated
Switching frequency		300 kHz typ. ± 25 kHz
Approvals and standards		EN60950, UL/cUL60950
Material flammability		UL94V-0
Dimensions	L x W x H	25.27 x 15.75 x 9.00 mm 0.995 x 0.620 x 0.354 in
Weight		3.98 g (0.13 oz)
MTBF	Telcordia SR-332F	7,092,000 hours

EMC Characteristics

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	EN61000-4-3

Environmental Specifications

Thermal performance (See Note 2)	Operating ambient temperature Non-operating temperature	-40 °C to +85 °C -40 °C to +125 °C
MSL ('Z' suffix only)	JEDEC J-STD-020C	Level 3

Protection

Short-circuit	Auto reset	20 A typical
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Ordering Information

Model Number ⁽⁹⁾	Output Power (Max.)	Input Voltage	Output Voltage	Output Current (Min.)	Output Current (Max.)	Efficiency (Typical)	Regulation ⁽⁹⁾	
							Line	Load
PTH05060	36 W	4.5 - 5.5 Vdc	0.8 - 3.6 V	0 A	10 A	94%	± 10 mV	± 12 mV

Part Number System with Options

Product Family	Input Voltage	Output Current	Mechanical Package	Output Voltage Code	Pin Option ⁽⁹⁾	Mounting Options	Pin Option
PTH	05	06	0	W	A	S	T
Point-of-Load Alliance compatible	05 = 5 V	06 = 10 A	Always 0	W = Wide		D = Horizontal through-hole (RoHS 6/6) Z = Surface-mount solder ball (RoHS 6/6)	No Suffix = Trays T = Tape and Reel ⁽⁹⁾

Output Voltage Adjustment

The ultra-wide output voltage trim range offers major advantages to users who select the PTH05060. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.8 Vdc to 3.6 Vdc. When the PTH05060 converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

Efficiency Table (I_o = 10 A)

Output Voltage	Efficiency
V _o = 1.0 V	85%
V _o = 1.2 V	86%
V _o = 1.5 V	89%
V _o = 1.8 V	90%
V _o = 2.0 V	91%
V _o = 2.5 V	92%
V _o = 3.3 V	94%

Notes:

- Remote ON/OFF, Positive Logic
ON: Pin 3 open; or V > V_{in} - 0.5 V
OFF: Pin 3 GND; or V < 0.8 V (min - 0.2 V).
- See Figures 1 & 2 for safe operating curves.
- A 330 μ F electrolytic input capacitor is required for proper operation. The capacitor must be rated for a minimum of 500 mA rms of ripple current.
- An external output capacitor is not required for basic operation. Adding 330 μ F of distributed capacitance at the load will improve the transient response.
- 1 A/ μ s load step, 50 to 100% I_{max}, C_{out} = 330 μ F.
- If utilized V_{out} will track applied voltage by ± 0.3 V (up to V_o set point).
- The pre-bias start-up feature is not compatible with Auto-Track™. This is because when the module is under Auto-Track™ control, it is fully active and will sink current if the output voltage is below that of a back-feeding source. Therefore to ensure a pre-bias hold-off, one of the following two techniques must be followed when input power is first applied to the module. The Auto-Track™ function must either be disabled, or the module's output held off using the Inhibit pin. Refer to Application Note 159 for more details.
- Tape and reel packaging only available on the surface-mount versions.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com> to find a suitable alternative.

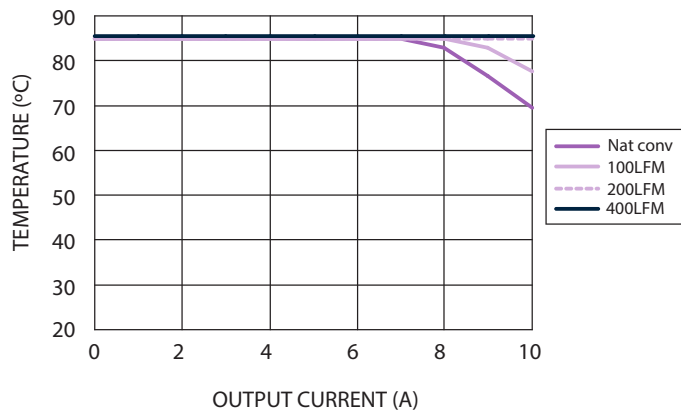


Figure 1 - Safe Operating Area
Vin = 5 V, Output Voltage = 3.3 V (See Note A)

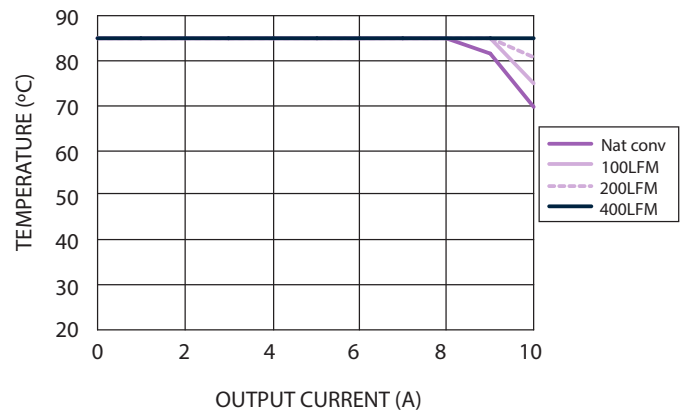


Figure 2 - Safe Operating Area
Vin = 5 V, Output Voltage = 1.0 V (See Note A)

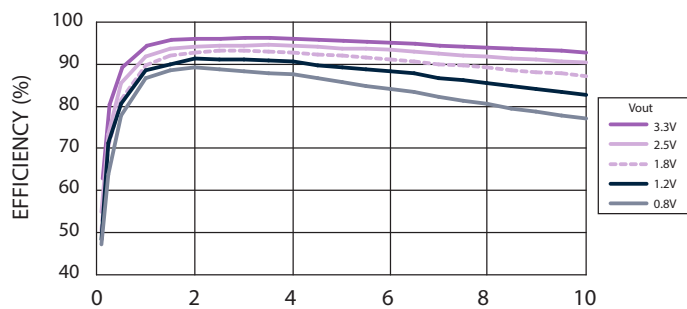


Figure 3 - Efficiency vs Load Current
Vin = 5 V (See Note B)

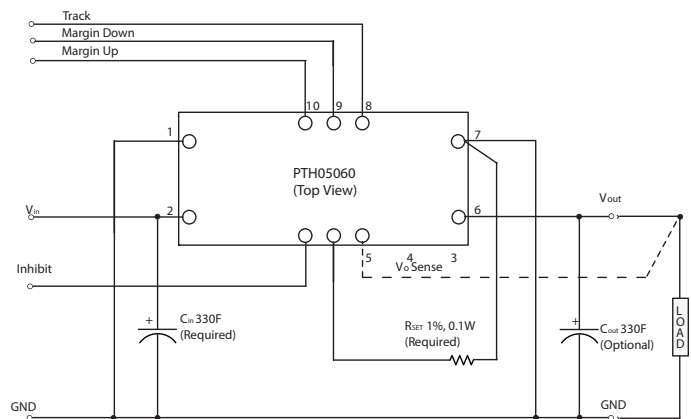


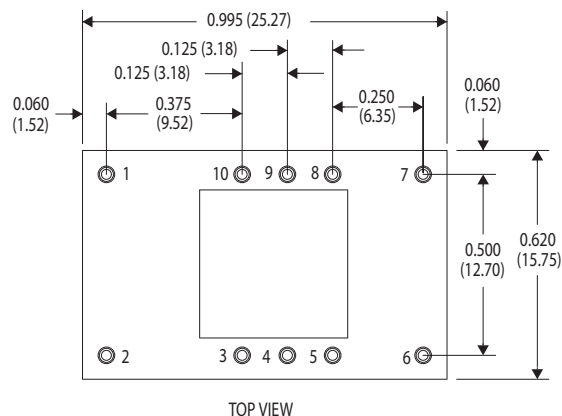
Figure 4 - Standard Application

Notes:

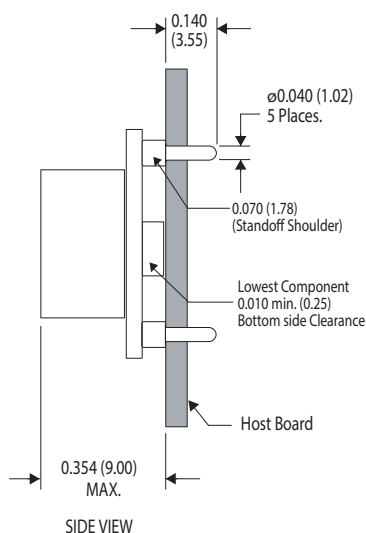
- A. SOA curves represent the conditions at which internal components are within the Artesyn derating guidelines.
- B. Characteristic data has been developed from actual products tested at 25 °C. This data is considered typical data for the converter.

Mechanical Drawings

Plated through-hole



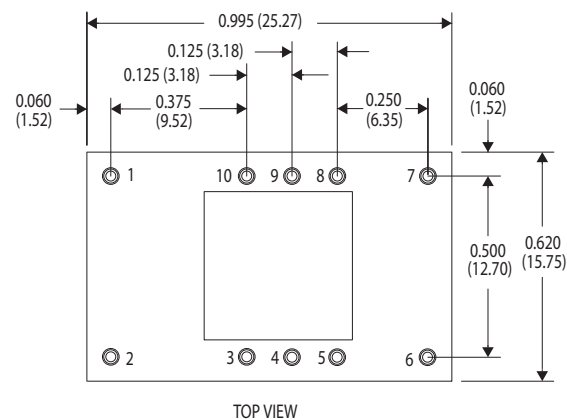
Dimensions in Inches (mm)
Tolerances (unless otherwise specified)
2 Places 0.030 (0.76)
3 Places 0.010 (0.25)



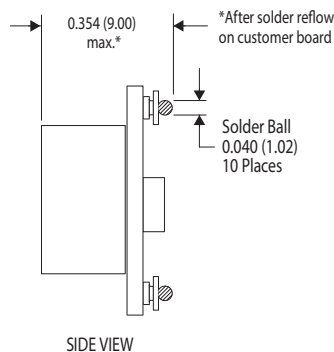
Pin Assignments	
Pin	Function
1	Ground
2	Vin
3	Inhibit*
4	Vo adjust
5	Vo sense
6	Vout
7	Ground
8	Track
9	Margin down*
10	Margin up*

*Denotes negative logic:
Open = Normal operation
Ground = Function active

Surface-mount



Dimensions in Inches (mm)
Tolerances (unless otherwise specified)
2 Places 0.030 (0.76)
3 Places 0.010 (0.25)



WORLDWIDE OFFICES

Americas

2900 South Diablo Way
Suite B100
Tempe, AZ 85282, USA
+1 888 412 7832

Europe (UK)

Ground Floor Offices, Barberry House
4 Harbour Buildings, Waterfront West
Brierley Hill, West Midlands
DY5 1LN, UK
+44 (0) 1384 842 211

Asia (HK)

14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
+852 2176 3333

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For more information: www.artesyn.com
For support: productsupport.ep@artesyn.com

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