ROHS 2002/95/EC

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PTH05050 5 Vin Single Output

Total Power: 21.6W Input Voltage: 4.5 - 5.5VDC # of Outputs: Single



- 6 A output current
- 5 V input voltage
- Wide-output voltage adjust (0.8 Vdc to 3.6 Vdc)
 • Auto-track™ sequencing*
 • Pre-bias start-up capability

- Efficiencies up to 95%
- Output ON/OFF inhibit
- Output voltage sensePoint-of-Load-Alliance (POLA) compatible
- Available RoHS compliant
- 2 Year Warranty

Safety

UL/cUL CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1, File No. E186249

TÜV Product Service (EN60950) Certificate No. B 06 07 38572 068



ARTESYN

PTH05050Y

•		
Output		
Voltage adjustability	(See note 4)	0.8 - 3.6 Vdc
Setpoint accuracy		± 2.0% Vo
Line regulation		±10% mV typ.
Load regulation		±12 mV typ.
total regulation		± 3% Vo
Minimum load		0 A
Ripple and noise	20 MHz bandwidth	20 mV pk-pk
Temperature co-efficient	-40°C to +85 °C	± 5% Vo
Transient response (see note 5)		70 μs recovery time
		Overshoot/undershoot 100 MV
Input		
Input Input voltage range	See note 3	4.5 - 5.5 Vdc
	See note 3 No load	4.5 - 5.5 Vdc 10 mA typ.
Input voltage range		
Input voltage range Input current	No load	10 mA typ.
Input voltage range Input current Remote ON/OFF	No load	10 mA typ. Positive logic
Input voltage range Input current Remote ON/OFF Startup time	No load	10 mA typ. Positive logic 1 V/ms
Input voltage range Input current Remote ON/OFF Startup time Undervoltage lockout	No load See note 1	10 mA typ. Positive logic 1 V/ms 3.7 - 4.3 Vdc typ.
Input voltage range Input current Remote ON/OFF Startup time Undervoltage lockout Track input voltage	No load See note 1	10 mA typ. Positive logic 1 V/ms 3.7 - 4.3 Vdc typ.
Input voltage range Input current Remote ON/OFF Startup time Undervoltage lockout Track input voltage EMC Charateristics	No load See note 1 Pin 2 (See note 6, 7)	10 mA typ. Positive logic 1 V/ms 3.7 - 4.3 Vdc typ.
Input voltage range Input current Remote ON/OFF Startup time Undervoltage lockout Track input voltage EMC Charateristics Electrostatic discharge	No load See note 1 Pin 2 (See note 6, 7) EN61000-4-2, IEC801-2	10 mA typ. Positive logic 1 V/ms 3.7 - 4.3 Vdc typ.



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General Specifications		
Efficiency	See Efficiency Tabl	e 95% max.
Insulation voltage		Non-isolated
Switching frequency	550 kHz to 650 Kh	Z
Approvals and	EN60950	
standards	UL/cUL60950	
Material flammability	UL94V-0	
Dimensions	$(L \times W \times H)$	22.10 x 12.57 x 8.50 mm
		0.870 x 0.495 x 0.335 in.
Weight		2.9 g (0.10 oz)
MTBF demonstrated	Telcordia SR-332F	7,092,000 hours

Environmental Specifications

Thermal performance	Operating ambient, -40 °C to +85 °C	
(see note 2)	temperature	
	Non-operating	-40 °C to +125 °C
MSL ('Z' suffix only)	JEDEC J-STD-020C	Level 3
Protection		
Short-circuit	Auto reset	12 A typ.

^{*}Auto-track™ is a trade mark of Texas Instruments

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated Cin = 100 μF , Cout = 0 μF

Output Input Output Output Current Efficiency Regulation ² Power Voltage Voltage (Min.) (Max.) (Typ.) Line Load	
Voltage Voltage (Max.) (Typ.) Line Load	
(WIAX.)	Model Number
21.6 W 4.5 - 5.5 Vdc 0.8 - 3.6 V 0 A 6 A 95% ± 10 mV ± 12 mV	PTH05050

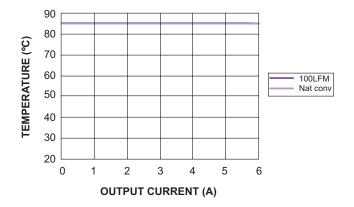
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Part Number System with Options

Product Family	Input Voltage	Output Current	Mechanical Package	Output Voltage Code	Pin Option (8)	Mounting Option (9)	Packaging Options
PTH	05	05	0	W	A	S	Т
POLA compatible	05 = 5 V	05 = 6 A	Always 0	W = Wide	A = Through-Hole Std. Pin Length (0.140") A = Surface-mount Tin/Lead Solder Ball	D = Horizontal Through-hole (RoHS 6/6) H = Horizontal Through-hole (roHS 5/6) S = Surface-mount (RoHS 5/6) Z = Surface-mount (RoHS 6/6)	No suffix = Trays T = Tape and Reel

Notes

- Remote ON/OFF. Positive Logic
 - Pin 3 open; or V > Vin 0.5 V
 - Pin 3 GND; or V < 0.8 V (min 0.2 V).
- See Figure 1 for safe operating curve.
- A 100 μF electrolytic input capacitor is required for proper operation. The capacitor must be rated for a minimum of 300 mA rms of ripple current.
- An external output capacitor is not required for basic operation. Adding 100 μF of distributed capacitance at the load will improve the transient response.
- 1 A/ μ s load step, 50 to 100% I_{omax} · C_{out} = 100 μ F. If utilized Vout will track applied voltage by ± 0.3 V (up to Vo 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 158 for more details.
- Tape and reel packaging only available on the surface-mount versions.
- To order Pb-free (RoHS compatible) surface-mount parts replace the mounting option 'S' with 'Z', e.g. PTH05050WAZ. To order Pb-free (RoHS compatible) through-hole parts replace the mounting option 'H' with 'D', e.g. PTH05050WAD.
- 10 NOTICE: Some models do not support all options. Please contact your local sales representative or use the on-line model number search tool at http://www.powerconversions.com to find a suitable alternative.



Output Voltage Adjustment of the PTH05050 Series

The ultra-wide output voltage trim range offers major advantages to users who select the PTH05050. 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 PTH05050 converter leaves the factory the output has been adjusted to the default voltage of 0.8 V.

Efficiency Table (I _O = 4 A)		
Output Voltage	Efficiency	
Vo = 1.0 V	85%	
Vo = 1.2 V	87%	
Vo = 1.5 V	89%	
Vo = 1.8 V	90%	
Vo = 2.0 V	91%	
Vo = 2.5 V	93%	
Vo = 3.3 V	95%	

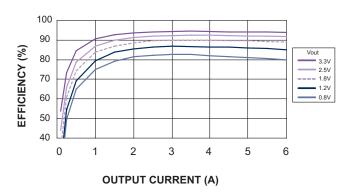
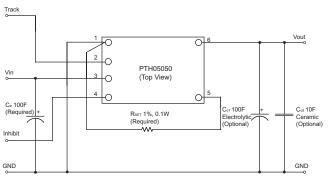


Figure 2 - Efficiency vs Load Current Vin = 5 V (See Note B)

Specifications



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Notes

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

Figure 3 - Standard Application

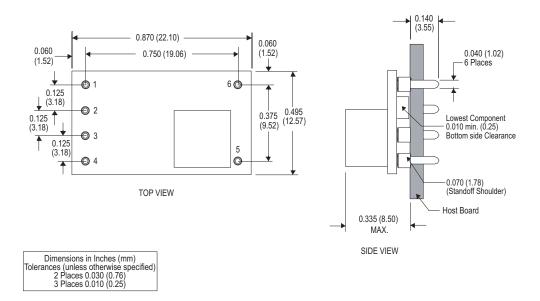


Figure 4 - Plated Through-Hole Mechanical Drawing

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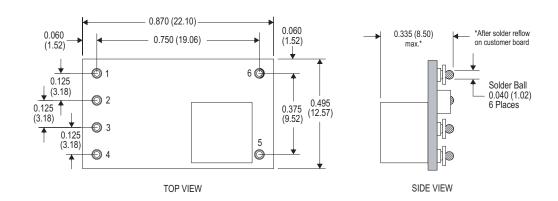
Services

Surge Protection

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Specifications



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

Figure 5 - Surface-Mount Mechanical Drawing

Pin Connections		
Pin No.	Function	
1	Ground	
2	Track	
3	Vin	
4	Inhibit*	
5	Vo adjust	
6	Vout	

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