

- 6A output current
- 5V input voltage
- Wide-output voltage adjust (0.8V to 3.6V)
- Auto-track™ sequencing*
- Margin up/down controls
- Pre-bias start-up capability
- Efficiencies up to 95%
- Output ON/OFF inhibit
- Output voltage sense
- Point-of-Load-Alliance (POLA) compatible

NEW Product



The PTH05050 is a next generation series of non-isolated DC/DC converters offering some of the most advanced POL features available in the industry. The primary new feature provides for sequencing between multiple modules, a function, which is becoming a necessity for powering advanced silicon including DSP's, FPGA's and ASIC's requiring controlled power-up and power-down. Other industry leading features include margin up/down controls, pre-bias start-up capability and efficiencies up to 95%. The PTH05050 has an input voltage of 4.5V -5.5V and offers a wide 0.8V to 3.6V output voltage range with up to 6A output current, which allows for maximum design flexibility and a pathway for future upgrades.

cULus TÜV

2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25°C unless otherwise stated
 $C_{in} = 100\mu F$, $C_{out} = 0\mu F$

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability	(See Note 4)	0.8V to 3.6V
Setpoint accuracy		±2.0% Vo
Line regulation		±10mV typ.
Load regulation		±12mV typ.
Total regulation		±3.0% Vo
Minimum load		0A
Ripple and noise	20MHz bandwidth	20mV pk-pk
Temperature co-efficient	-40°C to +85°C	±0.5% Vo
Transient response (See Note 5)	70µs recovery time Overshoot/undershoot 100mV	
Margin adjustment		±5.0% Vo

INPUT SPECIFICATIONS

Input voltage range	(See Note 3)	4.5V to 5.5V
Input current	No load	10mA typ.
Remote ON/OFF	(See Note 1)	Active high
Start-up time		5V/ms
Undervoltage lockout		3.7V to 4.3V typ.
Track input voltage	Pin 8 (See Note 6)	±0.3Vin

EMC CHARACTERISTICS

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

GENERAL SPECIFICATIONS

Efficiency	(See Efficiency Table)	95% max.
Insulation voltage		Non-isolated
Switching frequency		550kHz to 650kHz
Approvals and standards (pending)		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions (Plated through hole)	(L x W x H)	22.10 x 12.57 x 8.50mm 0.870 x 0.495 x 0.335in
Weight		3.7g (0.13oz)
MTBF	Telcordia SR-332	TBD hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 2)	Operating ambient, temperature Non-operating	-40°C to +85°C -40°C to +125°C
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PROTECTION

Short-circuit protection	Auto reset	12A typ.
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International Safety Standard Approvals (pending)

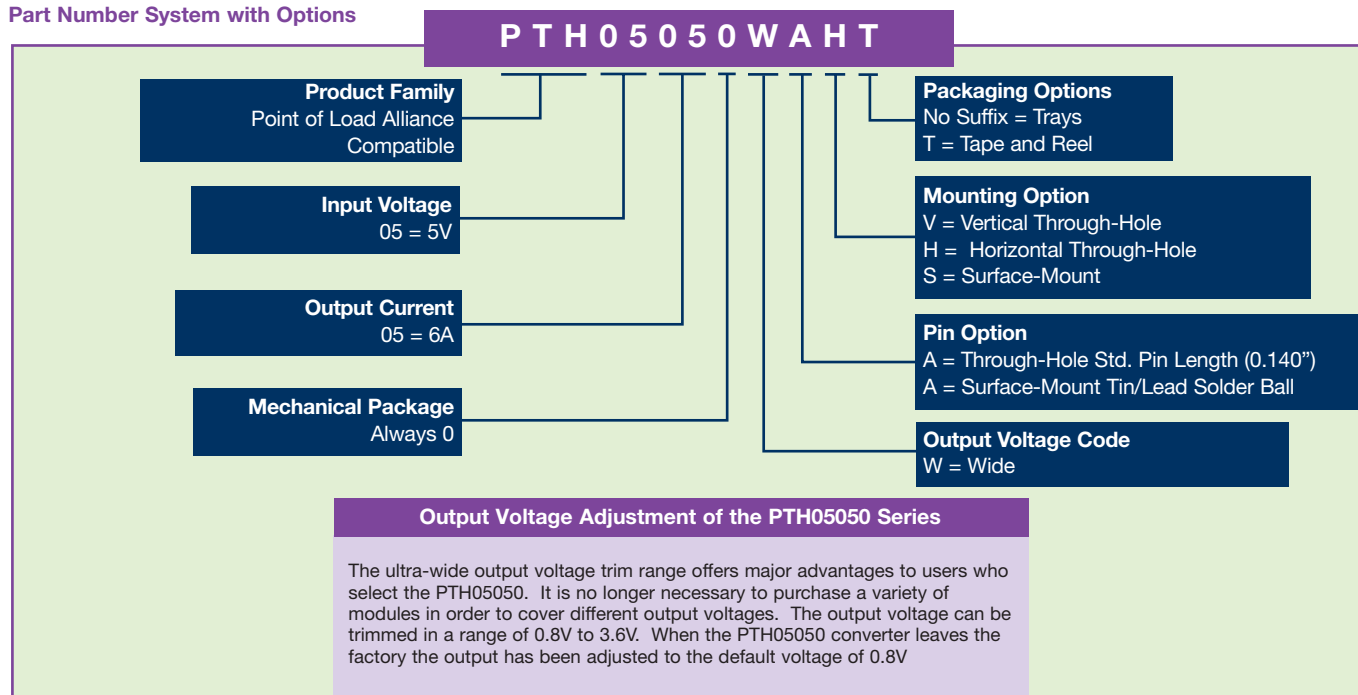


UL/cUL CAN/CSA 22.2 No. (TBD)
UL 60950 File No. (TBD)
TÜV Product Service (EN60950)
Certificate No. (TBD). CB report and certificate to IEC60950

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

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (MAX.)	REGULATION		MODEL NUMBER
						LINE	LOAD	
21.6W	4.5V - 5.5V	0.8V - 3.6V	0A	6A	95%	±10mV	±12mV	PTH05050

Part Number System with Options



EFFICIENCY TABLE ($I_O = 4A$)	
OUTPUT VOLTAGE	EFFICIENCY
$V_O = 1.0V$	85%
$V_O = 1.2V$	87%
$V_O = 1.5V$	89%
$V_O = 1.8V$	90%
$V_O = 2.0V$	91%
$V_O = 2.5V$	93%
$V_O = 3.3V$	95%

Notes

- Remote ON/OFF. Active High
ON: Pin 3 open; or $V > V_{in} - 0.5V$
OFF: Pin 3 GND; or $V < 0.8V$ (min - 0.2V).
- 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 300mA 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.
- 1A/ μs load step, 50 to 100% I_{Omax} , $C_{out} = 100\mu F$.
- If utilized V_{out} will track applied voltage by $\pm 0.3V$ (up to V_O set point).

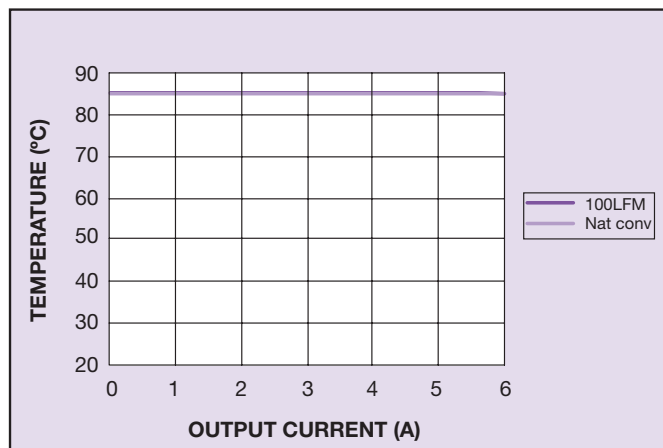


Figure 1 - Safe Operating Area
Vin = 5V, Output Voltage = 3.3V (See Note A)

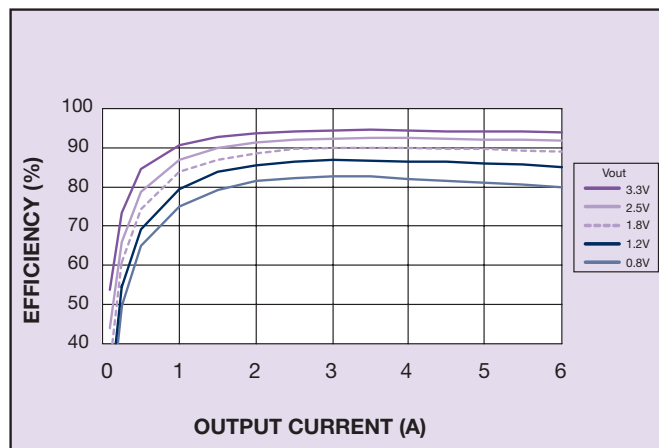


Figure 2 - Efficiency vs Load Current
Vin = 5V (See Note B)

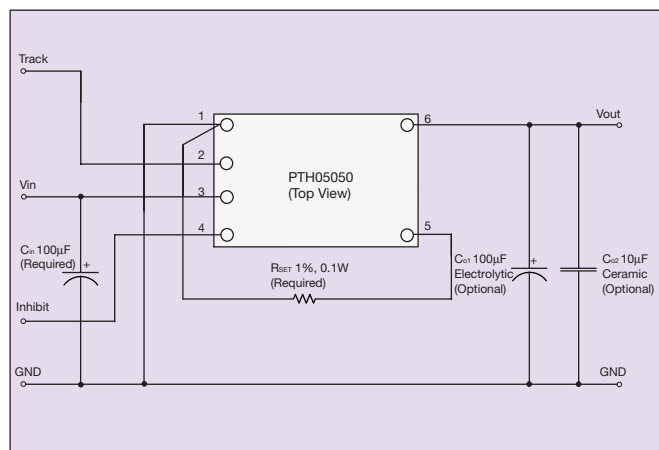


Figure 3 - Standard Application

Notes

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

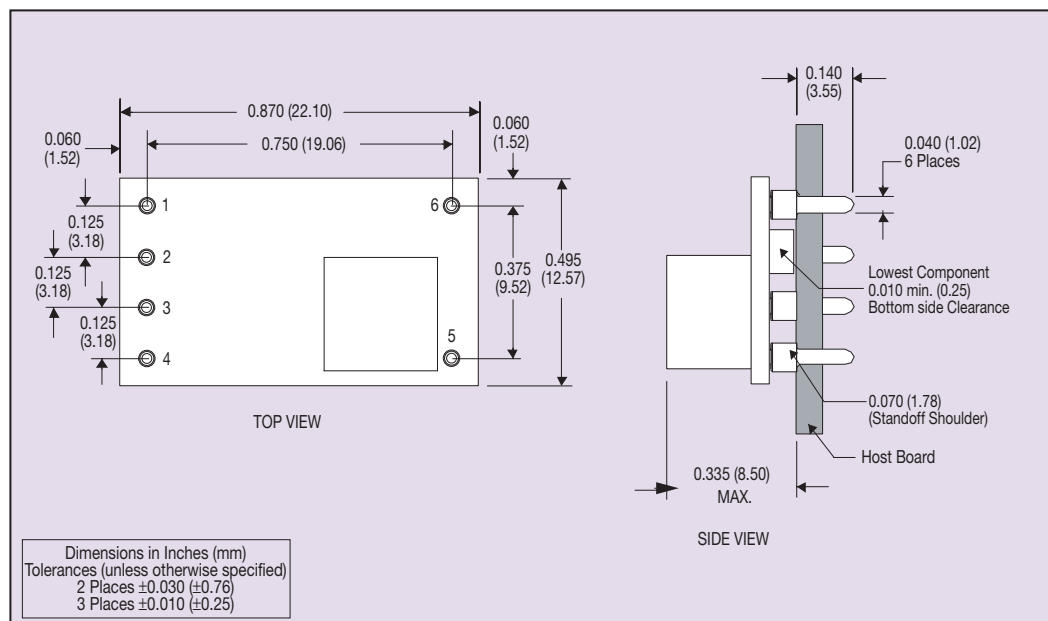


Figure 4 - Plated Through-Hole Mechanical Drawing

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

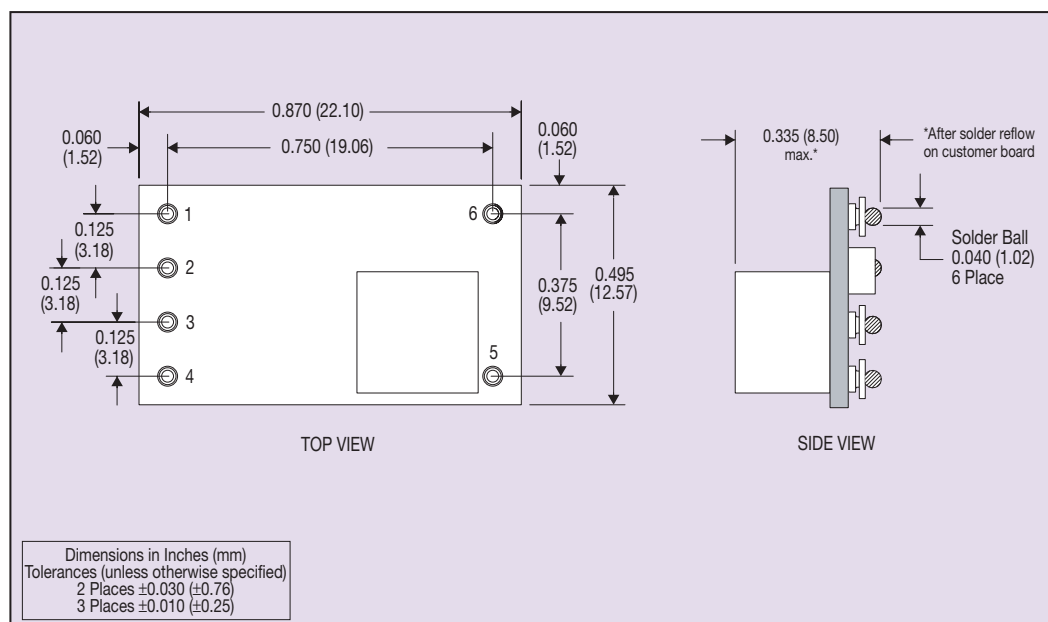


Figure 5 - Surface-Mount Mechanical Drawing

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