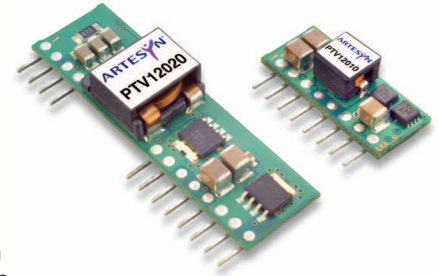


- 8 A output current
- 5 V input voltage
- Wide-output voltage adjust (0.8 Vdc to 3.6 Vdc)
- Auto-track™ sequencing\*
- Pre-bias start-up
- Efficiencies up to 95%
- Output ON/OFF inhibit
- Vertical through-hole mounting
- Point-of-Load-Alliance (POLA) compatible
- Undervoltage lockout
- Available RoHS compliant



2 YEAR WARRANTY

The PTV05010 is a non-isolated dc-dc converter from Artesyn under the Point of Load Alliance (POLA) standard. The vertical mounting option of the PTV05010 module provides performance in less than 20% of the space that is required by alternative solutions. The Auto-Track™ 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. The PTV05010 has an input voltage of 4.5 Vdc to 5.5 Vdc and offers a wide 0.8 Vdc to 3.6 Vdc output voltage range with up to 8 A output current, which allows for maximum design flexibility and a pathway for future upgrades.

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated  
 $C_{in} = 100 \mu F$  and  $10 \mu F$  (Ceramic),  $C_{out} = 0 \mu F$

## SPECIFICATIONS

### OUTPUT SPECIFICATIONS

Voltage adjustability	(See Note 4)	0.8-3.6 Vdc
Setpoint accuracy	(See Note 8)	±2.0% Vo
Line regulation		±5 mV typ.
Load regulation		±5 mV typ.
Total regulation	(See Note 8)	±3.0% Vo
Minimum load		0 A
Ripple and noise	20 MHz bandwidth	15 mV pk-pk
Temperature co-efficient	-40 °C to +85 °C	±0.5% Vo
Transient response (See Note 5)		70 μs recovery time Overshoot/undershoot 100 mV

### INPUT SPECIFICATIONS

Input voltage range	(See Note 3)	4.5-5.5 Vdc
Input standby current		5 mA typ.
Remote ON/OFF	(See Note 1)	Positive logic
Undervoltage lockout	(Increasing)	4.3 V typ.
Track input current	Pin 9 (See Notes 6, 7)	-0.13 mA

### 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	55-650 kHz	600 kHz typ.
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(L x W x H)	22.86 x 8.38 x 10.16 mm 0.90 x 0.330 x 0.400 in
Weight		2.5 g (0.9 oz)
MTBF	Telcordia SR-332	5,000,000 hours

### ENVIRONMENTAL SPECIFICATIONS

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

### PROTECTION

Overcurrent	Auto reset	12 A typ.
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### International Safety Standard Approvals



UL/cUL CAN/CSA-C22.2 No. 60950  
File No. E174104

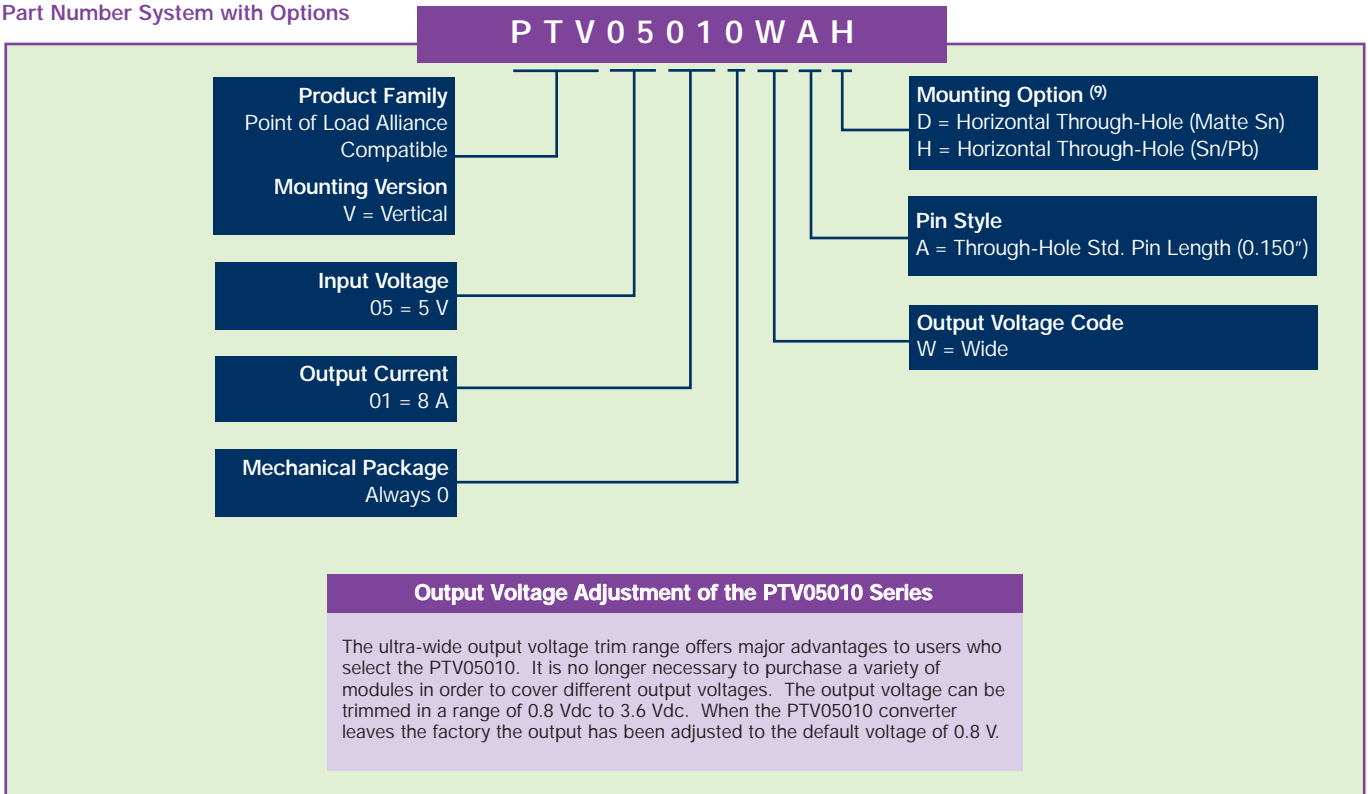


TÜV Product Service (EN60950) Certificate No. B 04 06 38572 044  
CB Report and Certificate to IEC60950, Certificate No. US/8292/UL

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

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.) (2)	EFFICIENCY (MAX.)	REGULATION		MODEL NUMBER (9,10)
						LINE	LOAD	
28.8 W	4.5-5.5 Vdc	0.8-3.6 Vdc	0 A	8 A	95%	±5 mV	±5 mV	PTV05010

Part Number System with Options



Notes

- Remote ON/OFF. Positive logic  
ON: Pin 7 open; or  $V > (V_{in} - 0.5 V)$   
OFF: Pin 7 GND; or  $V < 0.6 V$
- See Figure 1 for safe operating curve.
- A 100  $\mu F$  electrolytic input capacitor is required for proper operation as well as a 10F high-frequency ceramic capacitor. The electrolytic capacitor must be rated for a minimum of 300 mArms of ripple current.
- An external output capacitor is not required for basic operation. Adding 100  $\mu F$  of distributed capacitance at the load will improve the transient response.
- 1 A/ $\mu s$  load step, 50 to 100%  $I_{o,max}$ ,  $C_3 = 100 \mu F$ .
- If utilized  $V_{out}$  will track applied voltage by  $\pm 0.3 V$  (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 195 for more details.
- The set-point voltage tolerance is affected by the tolerance and stability of  $R_{set}$ . The stated limit is unconditionally met if  $R_{set}$  has a tolerance of 1% with 100/°C or better temperature stability.
- To order Pb-free (RoHS compatible) through-hole parts replace the mounting option 'H' with 'D', e.g. PTV05010WAD.
- 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/powergroup/products.htm> to find a suitable alternative.

EFFICIENCY TABLE ( $I_o = I_{o,max}$ )	
OUTPUT VOLTAGE	EFFICIENCY
$V_o = 3.3 V$	95
$V_o = 2.5 V$	93
$V_o = 1.8 V$	90
$V_o = 1.5 V$	89
$V_o = 1.2 V$	87
$V_o = 1.0 V$	85

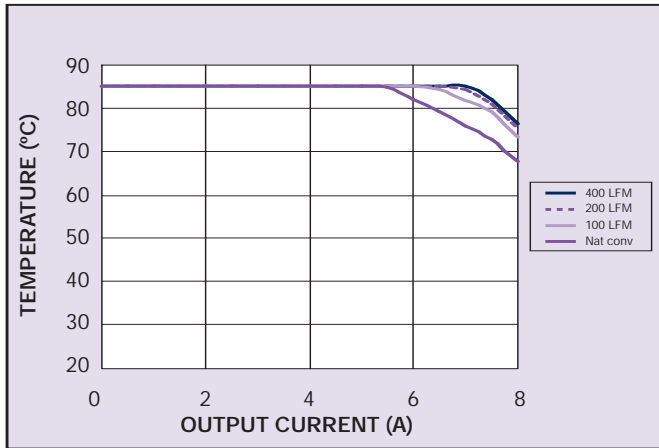


Figure 1 - Safe Operating Area  
Vin = 5 V, Output Voltage = 3.3 V (See Note A)

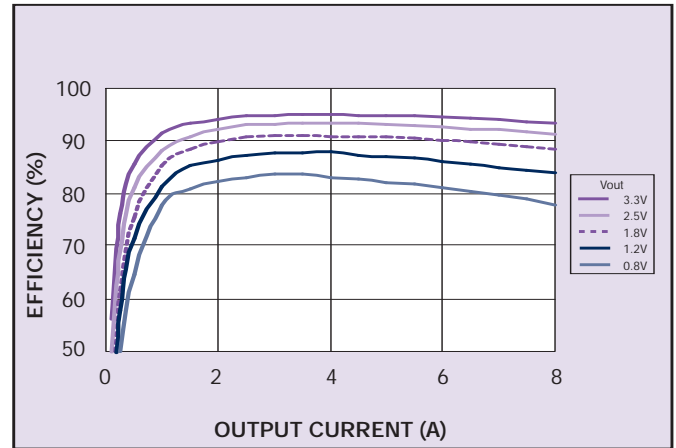


Figure 2 - Efficiency vs Load Current  
Vin = 5 V (See Note B)

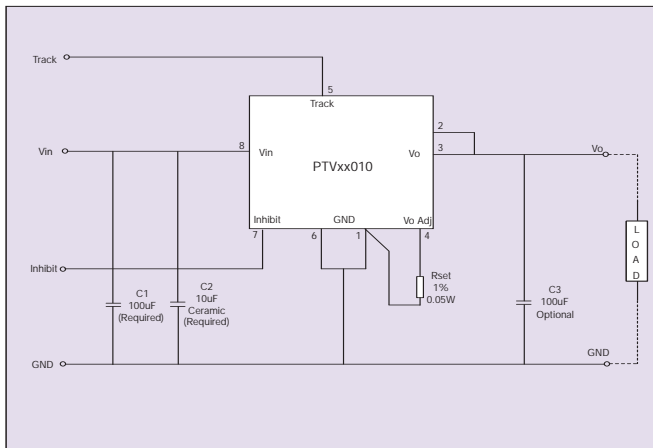


Figure 3 - Standard Application

### 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.

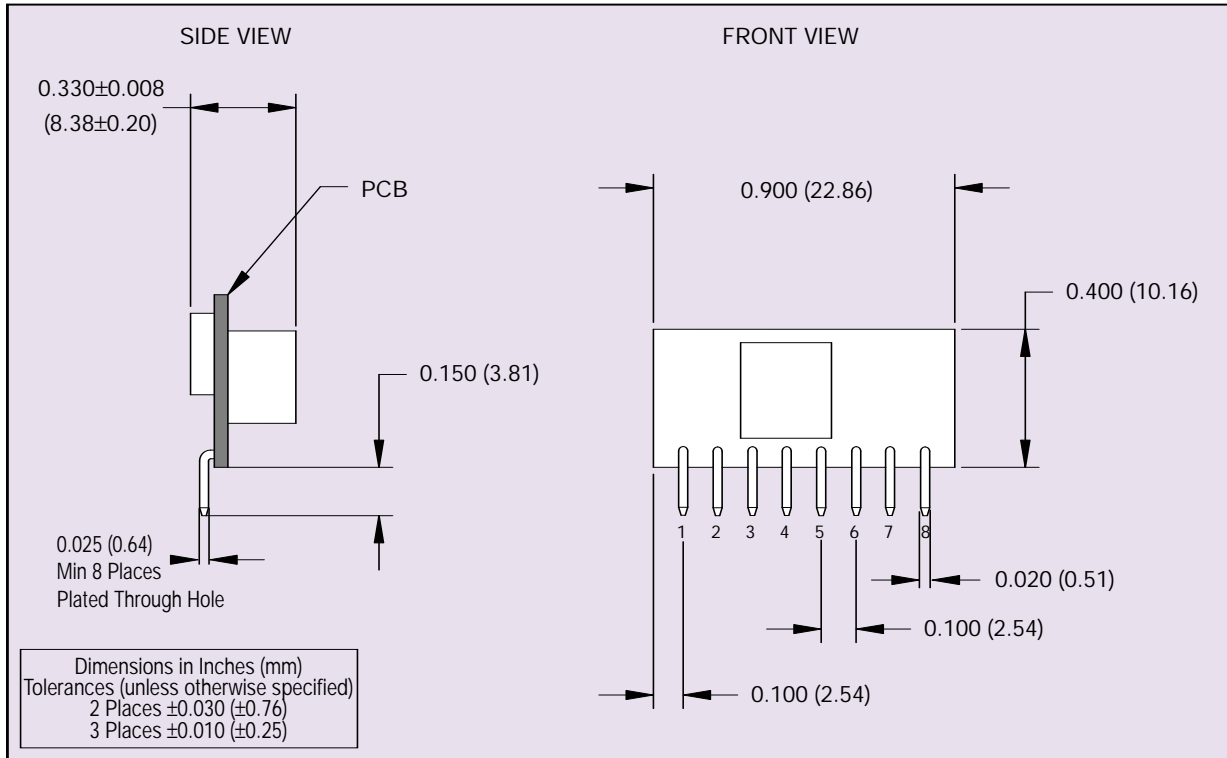


Figure 4 - Mechanical Drawing

PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Ground
2	Vout
3	Vout
4	Vo Adjust
5	Track
6	Ground
7	Inhibit
8	Vin

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