





DC-DC CONVERTERS POLA Non-isolated

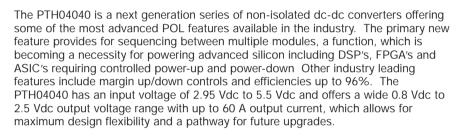
- 60 A output current⁽⁷⁾
- 3.3/5 V input voltage (2.95 Vdc to 5.5 Vdc)
- Wide-output voltage adjust (0.8 Vdc to 2.5 Vdc)
- Auto-track[™] sequencing^{*}
- Margin up/down controls
- Efficiencies up 93%
- Output ON/OFF inhibit
- Differential remote sense
- Programmable input Under-Voltage Lockout (UVLO)
- Point-of-Load-Alliance (POLA) compatible
- Available RoHS compliant



FAR WARRANT

SPECIFICATIONS

NEW Product



All specifications are typical at nominal input, full load at 25 °C unless otherwise stated C_{in} = 1000 $\mu F,$ C_{out} = 660 μF

OUTPUT SPECIFICATIONS

Voltage adjustability	$\begin{array}{l} 2.95 \leq V_{i} \leq 4.5 \ V \\ 4.50 \leq V_{i} \leq 5.5 \ V \end{array}$	0.8-1.65 Vdc 0.8-2.5 Vdc
Setpoint accuracy	(See Note 1)	±2.0% Vo
Line regulation		±5 mV typ.
Load regulation		±5 mV typ.
Total regulation	(See Note 1)	±3.0% Vo
Minimum load		0 A
Ripple and noise	20 MHz bandwidth	15 mV typ.
Transient response (See Note 4)	100 µs recovery time Overshoot/undershoot 200 mV	
Margin adjustment	(See Note 8)	±5.0% Vo

INPUT SPECIFICATIONS

Input voltage range	(See Notes 3, 5)	2.95-5.5 Vdc
Input standby current		60 mA typ.
Remote ON/OFF	(See Note 5)	Negative logic
Undervoltage lockout (Pin 8 open)	(See Note 6) On threshold Hysteresis	6.6-7.5 Vdc typ. 2.60 V 0.6 V
Track input current	Pin 18 (See Note 2)	-0.11 mA

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



Electrostatic discharge	EN6
Conducted immunity	EN6
Radiated immunity	EN6

EMC CHARACTERISTICS

EN61000-4-2, IEC801-2 EN61000-4-6 EN61000-4-3

GENERAL SPECIFICATIONS

Efficiency	See Table on pa	age 2 93% max.
Insulation voltage		Non-isolated
Switching frequency		825 MHz
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(L x W x H)	51.94 x 26.54 x 9.07 mm 2.045 x 1.045 x 0.357 in
Weight		22.5 g (79 oz)
MTBF	Telcordia SR-33	2,100,000 hours
ENVIDONMENTAL SDE	CIEICATIONS	

LIVIRONVIENTAL SPI		
Thermal performance	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-40 °C to +125 °C
MSL ('Z' suffix only)	JEDEC J-STD-020C	Level 3
PROTECTION		
Overcurrent	Auto reset	90 A
Thermal		Auto recovery

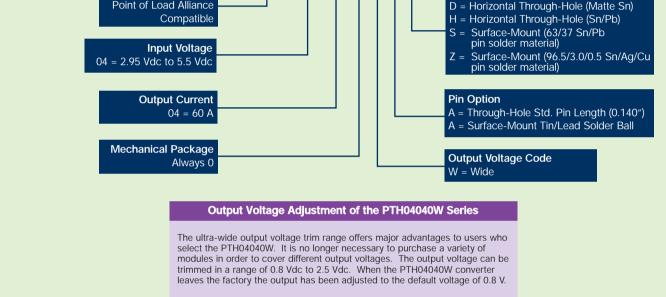
*Auto-track™ is a trade mark of Texas Instruments







DC-DC CONVERTERS POLA Non-isolated For the most current data and application support visit www.artesyn.com/powergroup/products.htm **NEW Product** OUTPUT OUTPUT OUTPUT REGULATION INPUT OUTPUT EFFICIENCY MODEL POWER CURRENT CURRENT NUMBER^(9,10) VOLTAGE VOLTAGE (MAX.) LINE LOAD (MAX.) (7) (MAX.) (MIN.) 150 W 2.95-5.5 Vdc 93% PTH04040W 0.8-2.5 Vdc 0 A 60 A ±5 mV ±5 mV Part Number System with Options PTH04040WAS **Product Family** Mounting Option (9) Point of Load Alliance D = Horizontal Through-Hole (Matte Sn) Compatible H = Horizontal Through-Hole (Sn/Pb) Surface-Mount (63/37 Sn/Pb S = pin solder material) Input Voltage Surface-Mount (96.5/3.0/0.5 Sn/Ag/Cu 7 04 = 2.95 Vdc to 5.5 Vdc pin solder material)



Notes

- 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 ppm/°C or better temperature stability.
- This control pin has an internal pull-up to Vin nominal. If it is left opencircuit the module will operate when input power is applied. A small lowleakage (<100 nA) MOSFET is recommend for control. For further information, consult Application Note 192.
- A 1000 µF input capacitor is required for proper operation. The capacitor 3 must be rated for a minimum of 400 mA rms of ripple current.
- This is with a 1 A/µs loadstep, 50 to 100% I_{omax} . C₀ = 660 µF. The minimum input voltage is 2.95 V or 1.34 x V₀, whichever is greater. These are default voltages. They may be adjusted using the 'UVLO Prog.' control input. Consult Application Note 192 for further details. See Figures 1 and 2 for safe operating curves. All power pins must be 5 6
- 7 used
- A small low-leakage (<100 nA) MOSFET is recommended to control this 8 pin. The opencircuit voltage is less than 1 Vdc.
- To order Pb-free (RoHS compatible) surface-mount parts replace the mounting option 'S' with 'Z', e.g. PTH04040WAZ. To order Pb-free (RoHS compatible) through-hole parts replace the mounting option 'H' with 'D', e.g. PTH04040WAD.
- 10 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_0 = 45A) V_{in} = 5 V		
OUTPUT VOLTAGE	EFFICIENCY	
Vo = 2.5 V	93%	
Vo = 1.8 V	90%	
Vo = 1.5 V	88%	
Vo = 1.2 V	86%	







DC-DC CONVERTERS POLA Non-isolated

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

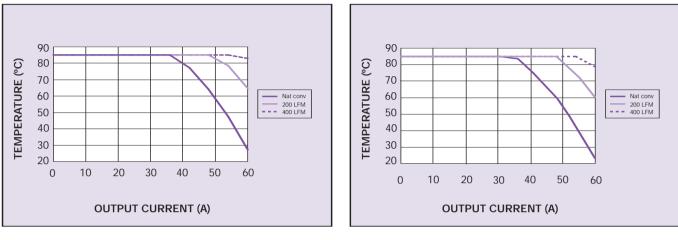
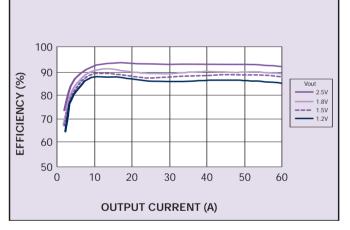
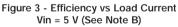


Figure 1 - Safe Operating Area Vin = 3.3 V (See Note A)





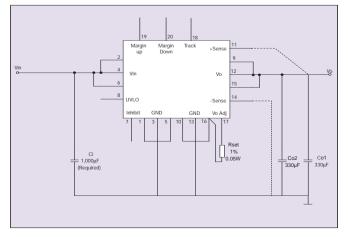


Figure 5 - Standard Application

Figure 2 - Safe Operating Area Vin = 5 V (See Note A)

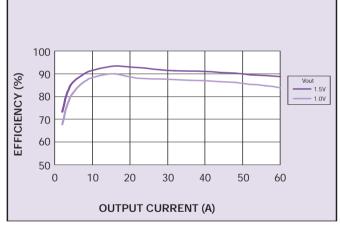


Figure 4 - Efficiency vs Load Current Vin = 3.3 V (See Note B)

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.







DC-DC CONVERTERS POLA Non-isolated

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

DIN CONNECTIONS

Δ

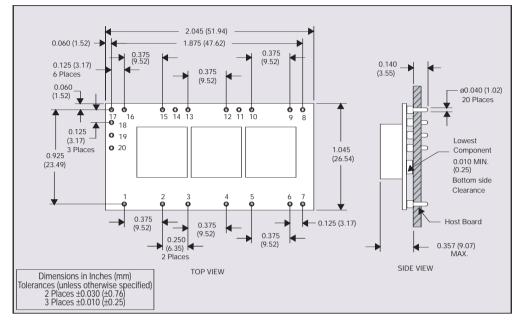
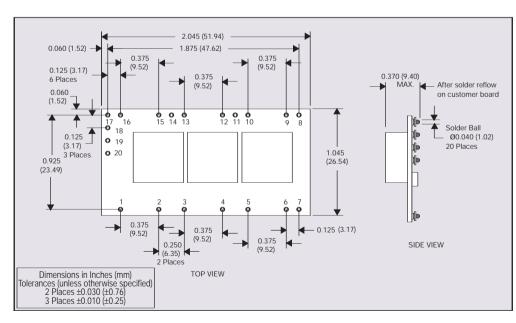
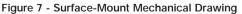


Figure 6 - Plated Through-Hole Mechanical Drawing



PIN CONNECTIONS		
PIN NO.	FUNCTION	
1	Ground	
2	Vin	
3	Ground	
4	Vin	
5	Ground	
6	Vin	
7	Inhibit*	
8	UVLO Programming	
9	Vout	
10	Ground	
11	Vs+	
12	Vout	
13	Ground	
14	Vs-	
15	Vout	
16	Ground	
17	Adjust	
18	Track	
19	Margin Up*	
20	Margin Down*	

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



Datasheet © Artesyn Technologies® 2006 The information and specifications contained in this datasheet are believed to be correct at time of publication. However, Artesyn Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. The information and specifications contained or described herein are subject to change in any manner at any time without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

Please consult our website for the following items:
Application Note