



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



**NEW Product**



- 30 A output current
- 5 V input voltage
- Wide-output voltage adjust (0.8 Vdc to 3.6 Vdc)
- Auto-track™ sequencing\*
- Margin up/down controls
- Pre-bias start-up capability
- Efficiencies up 94%
- Output ON/OFF inhibit
- Output voltage sense
- Point-of-Load-Alliance (POLA) compatible
- Available RoHS compliant



**2 YEAR WARRANTY**

The PTH05030 is a next generation POL 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 94%. The PTH05030 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 30 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*  
 $C_{in} = 1500 \mu F$ ,  $C_{out} = 0 \mu F$

**SPECIFICATIONS**

**OUTPUT SPECIFICATIONS**

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		±3.0% Vo
Minimum load		0 A
Ripple and noise	20 MHz bandwidth	40 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	
Margin adjustment		±5.0% Vo

**INPUT SPECIFICATIONS**

Input voltage range	(See Note 3)	4.5-5.5 Vdc
Input current	No load	10 mA typ.
Remote ON/OFF	(See Note 1)	Positive logic
Start-up time		1 V/ms
Undervoltage lockout		3-4.35 Vdc typ.
Track input voltage	Pin 11 (See Note 6, 7)	±0.3 Vin

**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)	94% max.
Insulation voltage		Non-isolated
Switching frequency		275 kHz to 325 kHz
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(L x W x H)	34.80 x 28.45 x 9.00 mm 1.370 x 1.120 x 0.354 in
Weight		10 g (0.35 oz)
MTBF	Telcordia SR-332	2,821,000 hours

**ENVIRONMENTAL SPECIFICATIONS**

Thermal performance (See Note 2)	Operating ambient, temperature Non-operating	-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	47 A typ.
Thermal		Auto recovery

**International Safety Standard Approvals**



UL/cUL CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1,  
File No. E174104



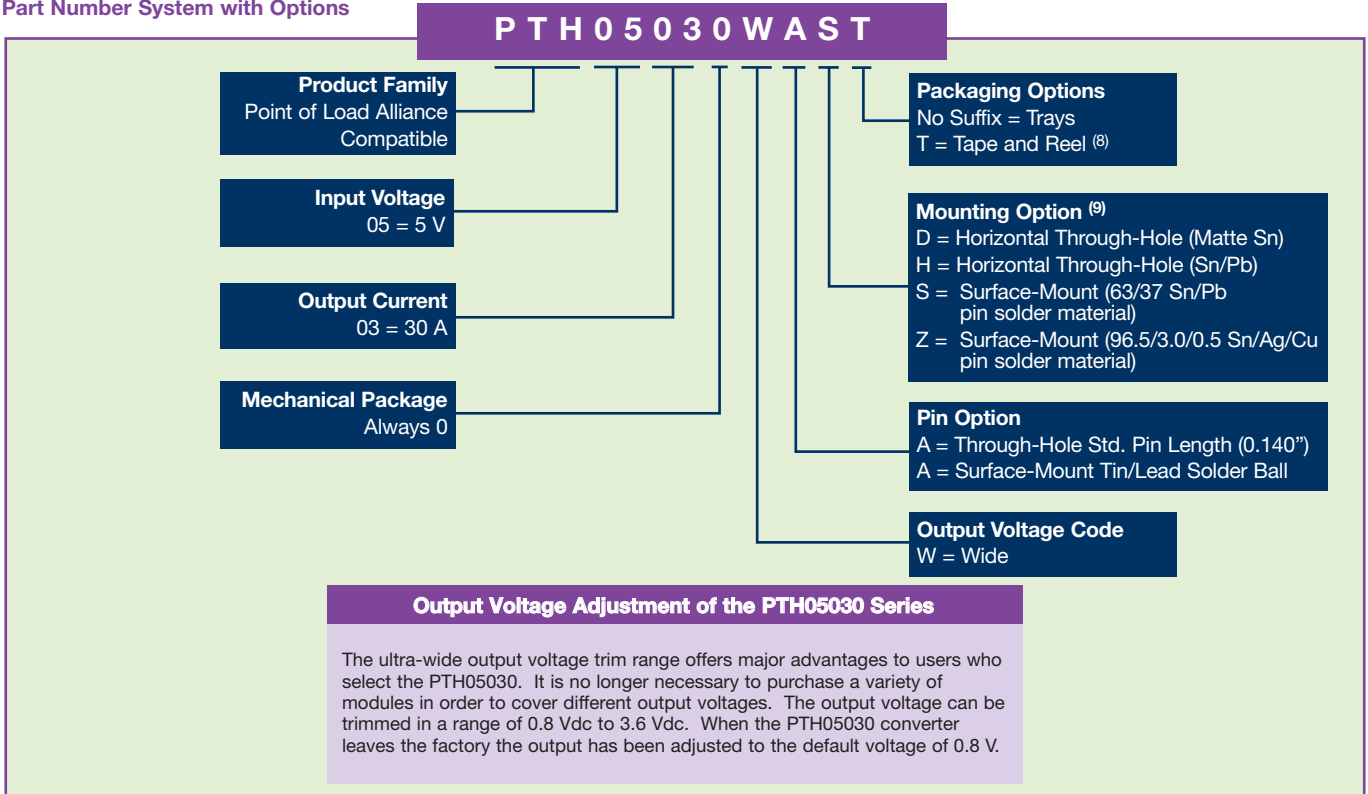
TÜV Product Service (EN60950) Certificate No. B 04 06 38572 044  
CB Report and Certificate to IEC60950, Certificate No.  
US/8292/UL

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



OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (MAX.)	REGULATION		MODEL NUMBER <sup>(9,10)</sup>
						LINE	LOAD	
108 W	4.5-5.5 Vdc	0.8-3.6 Vdc	0 A	30 A	94%	±10 mV	±12 mV	PTH05030

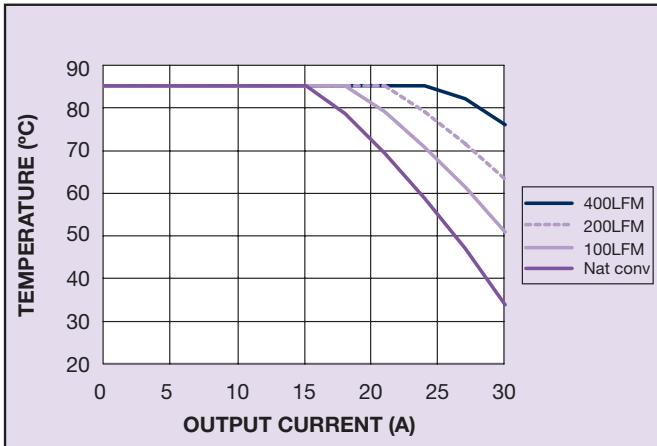
Part Number System with Options



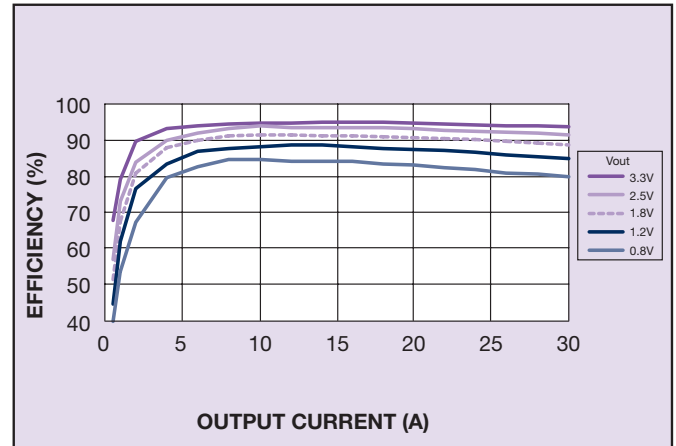
**Notes**

- Remote ON/OFF. Positive Logic  
ON: Pin 4 open; or  $V > V_{in} - 0.5 V$   
OFF: Pin 4 GND; or  $V < 0.8 V$  (min - 0.2 V).
- See Figure 1 for safe operating curve.
- A 1,500  $\mu F$  electrolytic input capacitor is required for proper operation. The capacitor must be rated for a minimum of 900 mA rms of ripple current.
- An external output capacitor is not required for basic operation. Adding 330  $\mu F$  of distributed capacitance at the load will improve the transient response.
- 1 A/ $\mu s$  load step, 50 to 100%  $I_{omax}$ ;  $C_{out} = 330 \mu F$ .
- 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 157 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. PTH05030WAZ. To order Pb-free (RoHS compatible) through-hole parts replace the mounting option 'H' with 'D', e.g. PTH05030WAD.
- 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.

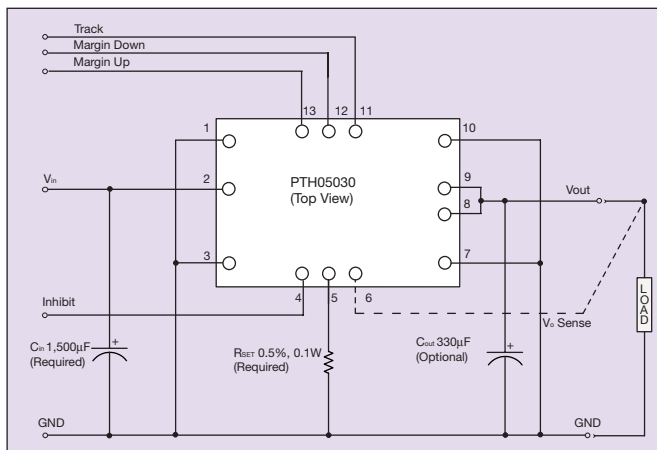
OUTPUT VOLTAGE	EFFICIENCY
$V_o = 1.0 V$	86%
$V_o = 1.2 V$	87%
$V_o = 1.5 V$	89%
$V_o = 1.8 V$	90%
$V_o = 2.0 V$	91%
$V_o = 2.5 V$	93%
$V_o = 3.3 V$	94%



**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.

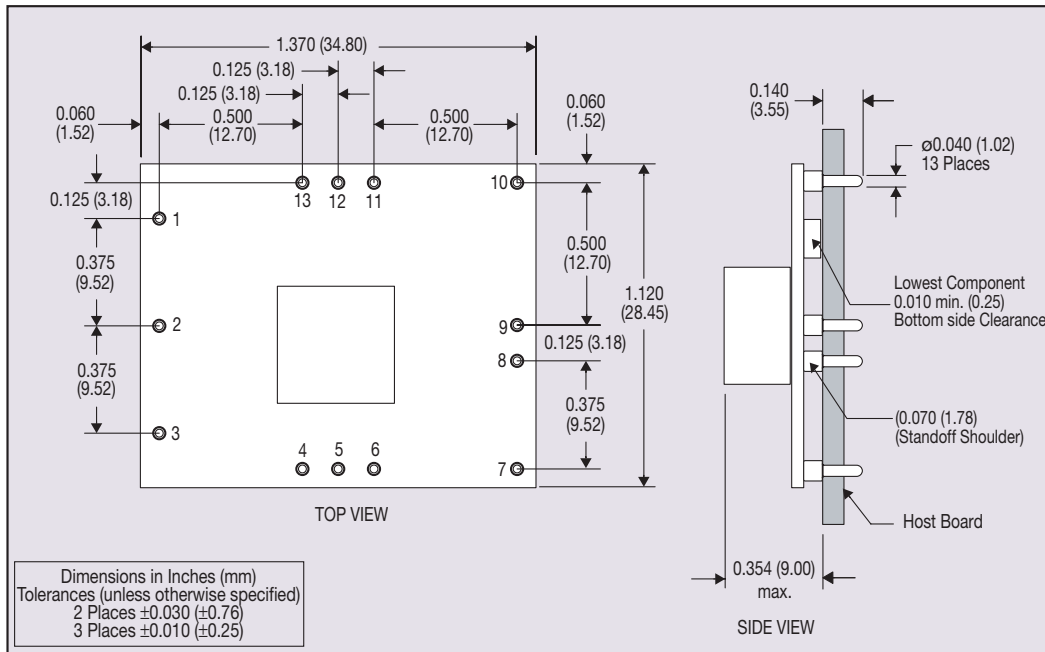


Figure 4 - Plated Through-Hole Mechanical Drawing

PIN CONNECTIONS	
PIN NO.	FUNCTION
1	Ground
2	Vin
3	Ground
4	Inhibit*
5	Vo adjust
6	Vo sense
7	Ground
8	Vout
9	Vout
10	Ground
11	Track
12	Margin down*
13	Margin up*

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

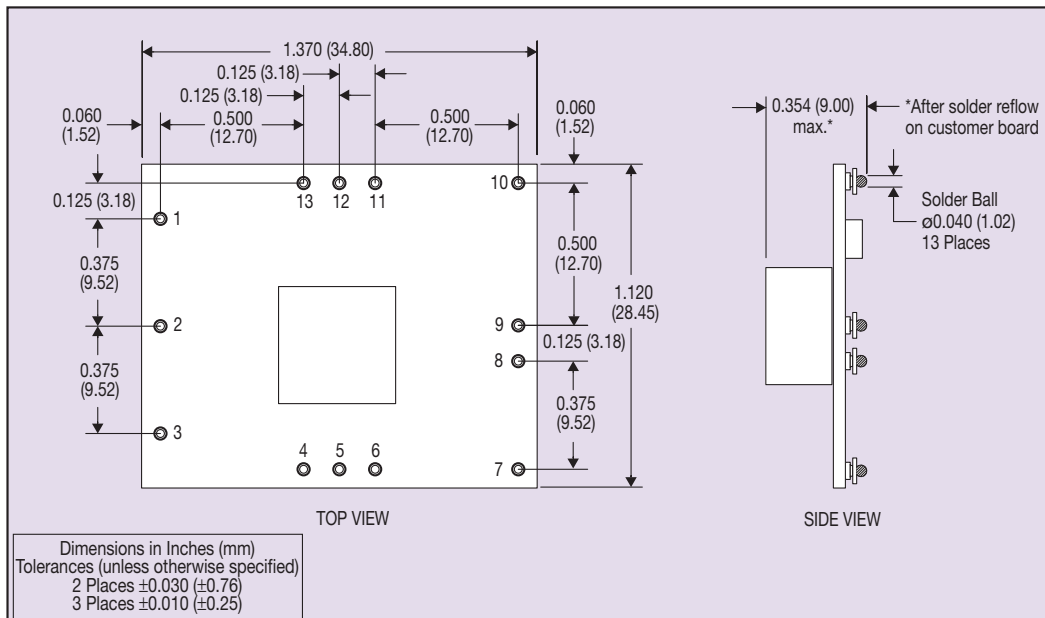


Figure 5 - Surface-Mount Mechanical Drawing