



Size: 6in x 3in x 0.69in (152.4mm x 76mm x 17.4mm)

**FEATURES**

- 100% Burn-In
- Synchronizable
- Output Trim  $\pm 10\%$
- 1500VDC Isolation
- Operation to No Load
- 600 Watt Output Power (500W below 13VDC input)
- Very Low Output Ripple
- Fast Transient Response
- Output Current up to 120A
- Fixed Switching Frequency
- Remote Sense Compensation
- Remote ON/OFF (Active High/Low)
- Short Circuit and Over Temperature Protection
- 94% Efficient at Half Load, 92% Efficient at Full Load (Typical)

**DESCRIPTION**

The HP series is a high-density brick style converter that incorporates the desired features required in today's demanding low voltage bus applications. Its unique dual interleaved phase-shifted topology minimizes both input and output noise. When performance, reliability, and low cost are needed, the HP series delivers.

**MODEL SELECTION TABLE**

Model Number <sup>(1)</sup>	Input Voltage Range	Output Voltage	Output Current <sup>(5)</sup>	Ripple & Noise	No Load Input Current	Output Power	Efficiency
HP12S12-600	12/24VDC (10-36VDC)	12VDC	50A	1% Vout Max.	0.1A	600W	92%
HP12S15-600		15VDC	40A				
HP12S20-600		20VDC	30A				
HP12S24-600		24VDC	25A				
HP12S26-600		26VDC	23A				
HP12S28-600		28VDC	21.42A				
HP12S48-600		48VDC	12.5A				

**SPECIFICATIONS**

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.  
We reserve the right to change specifications based on technological advances.

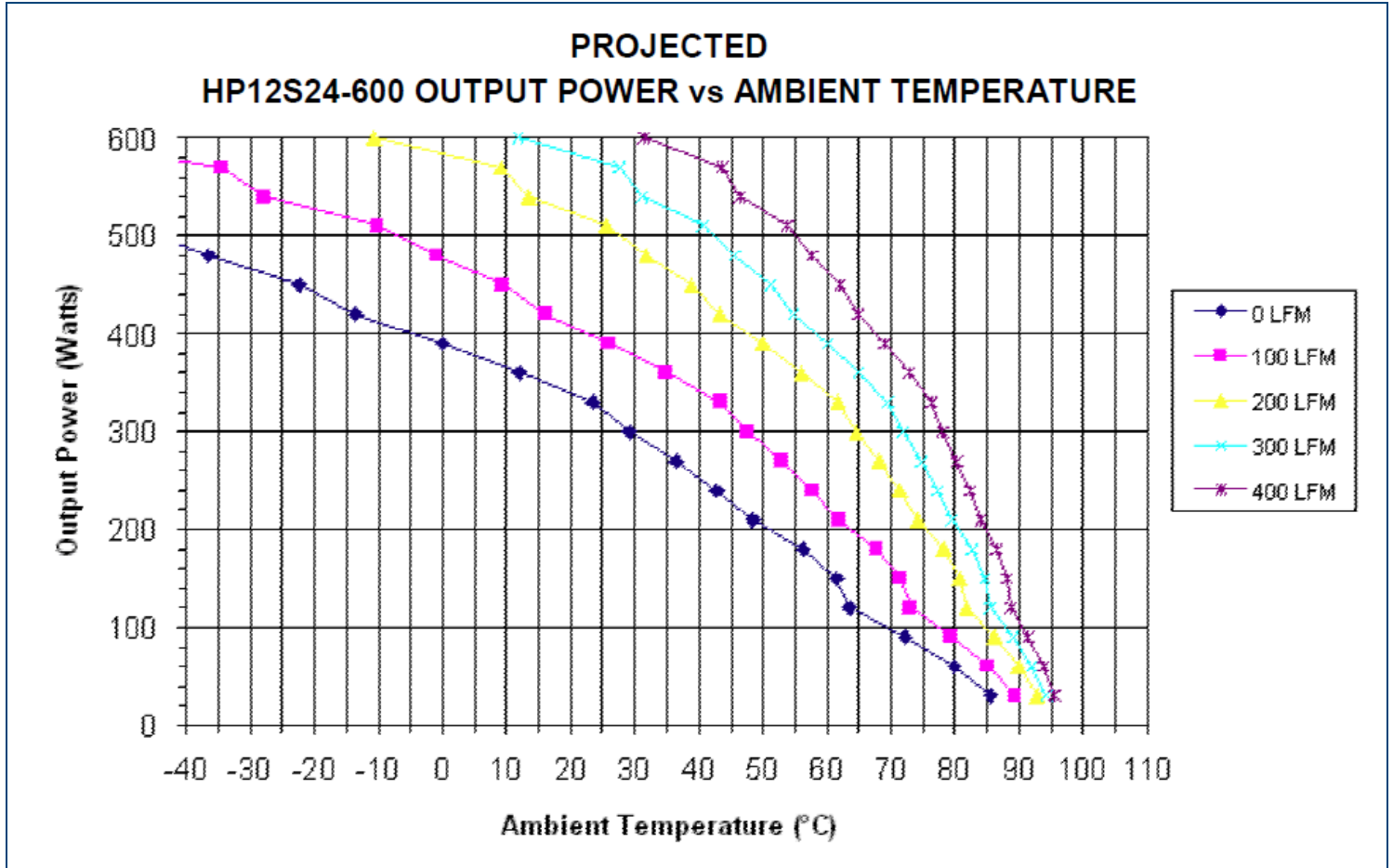
SPECIFICATION	TEST CONDITIONS	Min	Typ	Max	Unit
<b>INPUT SPECIFICATIONS</b>					
Input Voltage Range		10		36	VDC
UVLO Turn On at				10	VDC
UVLO Turn Off at				9.5	VDC
Input Surge Voltage (100ms)			50		VDC
Input Current (Low Line)				70	A
Input Filter		1,000µF low ESR capacitor recommended			
Reflected Ripple Current	Nominal Vin and Full Load		20		mA
Remote ON/OFF		Active High or Active Low			
<b>OUTPUT SPECIFICATIONS</b>					
Output Voltage		See Table			
Voltage Accuracy			±1		%
Line Regulation	LL to HL at FL		±0.2		%
Load Regulation	NL to FL		±0.2		%
Voltage Adjustability			±10		%
Output Power (See Note 5)			600		W
Output Current		See Table			
Ripple & Noise (20MHz bandwidth)				1	% Vout
Transient Response Recovery Time	50% Load Step		5		% Total Deviation
Temperature Coefficient			±0.02		%/°C
<b>PROTECTION</b>					
Short Circuit Protection	Self Re-Setting	Continuous			
Over Temperature Protection	Self Re-Setting	110°C			
Current Limit		130%			
<b>ENVIRONMENTAL SPECIFICATIONS</b>					
Operating Case Temperature <sup>(6)</sup>		-40		100	°C
Storage Temperature		-55		125	°C
Humidity		Fully Potted Construction			
MTBF		1, 293, 794.959 hours			
<b>GENERAL SPECIFICATIONS</b>					
Efficiency	At Half Load At Full Load		94 92		%
Switching Frequency			300		kHz
Isolation Voltage	Input to Output	1500			VDC
Isolation Resistance		1			GΩ
Isolation Capacitance			0.01		µF
<b>PHYSICAL SPECIFICATIONS</b>					
Weight		19.4oz (550g)			
Dimensions (L x W x H)		6in x 3in x 0.69in (152.4mm x 76mm x 17.4mm)			
Case Material		Aluminum Alloy			
Shielding		Six-Sided			

**NOTES**

- (1) Model number for Threaded Inserts shown.  
Unit comes with 3M x 0.5 threaded thru inserts. For 0.125 thru-hole add a "TH" to the model part number. (Ex. HP12S12-600TH)
- (2) Pin to pin tolerance ±0.01" [±0.25mm]. Pin diameter tolerance: ±0.005" [±0.13mm]
- (3) Active High Enable is standard; for Active Low Enable add "R" suffix to the model number. (Ex: HP12S24-600R)
- (4) *Due to advances in technology, specifications subject to change without notice.*
- (5) Output power is limited to 500 watts minimum at 13VDC input and below.
- (6) Mi suffix is for military temp range of -55 to 100°C

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DERATING CURVES



TRIM EQUATIONS

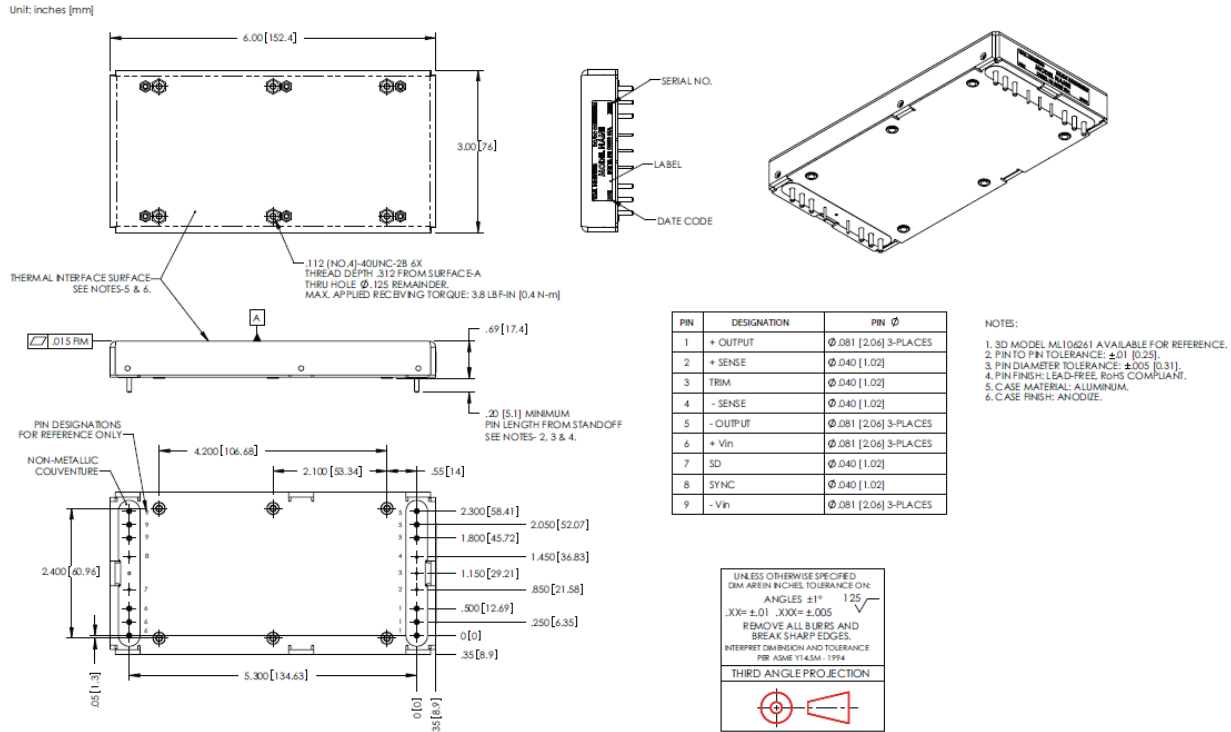
$V_x = V$  desired

$$R_{TL} = \frac{2 * V_x - 48}{48 - V_x} \text{ (in } K\Omega \text{)}$$

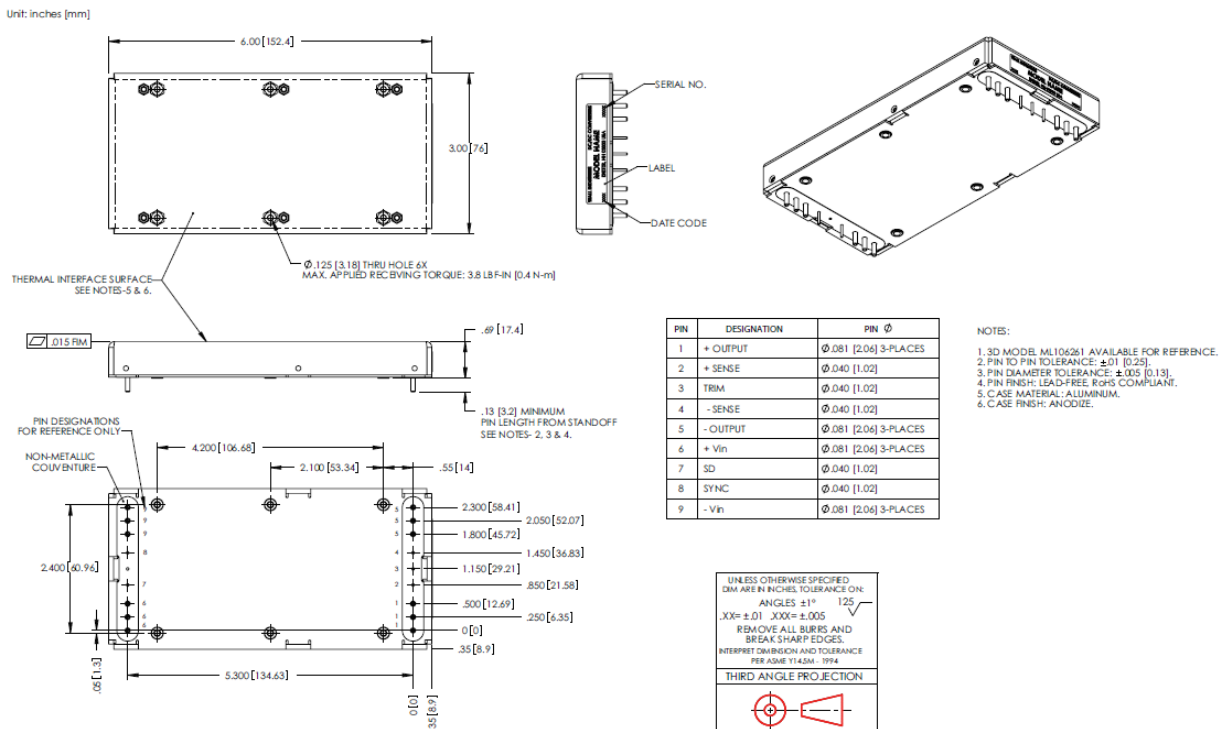
$$R_{TH} = \frac{V_x \left( 1 - \frac{20}{384} \right) + 1.25}{50 * \frac{10}{384} - 1.25} \text{ (in } K\Omega \text{)}$$

MECHANICAL DRAWINGS

THREADED INSERTS (STANDARD)



THRU-HOLD INSERTS ("TH" SUFFIX)



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## COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001: 2015 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

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