

**FEATURES**

- 100% Burn-in
- Water Washable
- Fixed Switching Frequency
- No Minimum Load Required
- Superior Thermal Performance
- Industry Standard Output Trim Adjust
- Ultra High Efficiency 91% at 5VDC (25A)
- Remote ON/OFF (Positive or Negative Logic)
- Low Cost Open Convection, Single Board Construction
- Over Current, Over Voltage, Over Temperature, and Short Circuit Protection



**DESCRIPTION**

The MPQ series of single output DC/DC converters provides up to 125 watts in a quarter-brick package. The MPQ series is well suited for telecom and datacom applications where high efficiencies are required. Some features include over voltage protection, short circuit protection, over current protection, positive or negative remote on/off, and  $\pm 10\%$  output trim. All models are 100% burn-in tested. This converter offers great performance and high reliability at a very competitive price.

<b>SPECIFICATIONS: MPQ Series</b>	
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.	
<b>INPUT SPECIFICATIONS</b>	
Input Voltage Range	see table
Remote On/Off (see Note 2)	positive or negative logic
UVLO	off at 34VDC (for 48VDC nominal input models)
External Filter Requirements	none
<b>OUTPUT SPECIFICATIONS</b>	
Output Current	see table
Output Voltage	see table
Output Voltage Setpoint	$\pm 1\%$
Line Regulation	$\pm 0.2\%$
Load Regulation	$\pm 0.2\%$
Output Power	see table
Ripple/Noise	see table
Minimum Load	0%
External Voltage Trim	$\pm 10\%$ (industry standard)
<b>MONOTONIC STARTUP ACROSS ALL LOAD RANGES</b> <b>CAPABLE OF STARTING INTO PRE-BIASED LOADS</b>	
<b>PROTECTION</b>	
Short Circuit Protection	continuous pulse-to-pulse (low power dissipation, auto recovery)
Over Voltage Protection	130% rated voltage
Current Limit Inception	130% rated voltage
<b>GENERAL SPECIFICATIONS</b>	
Switching Frequency (fixed)	330kHz typical
Efficiency	see table
Isolation Voltage (input to output)	1500VDC min.
Isolation Resistance	100 M $\Omega$
Isolation Capacitance	1000pF
<b>ENVIRONMENTAL SPECIFICATIONS</b>	
Operating Temperature	-40°C to +125°C (semiconductor junction temperature limit)
Storage Temperature	-55°C to +125°C
Thermal Shutdown	+110°C to +125°C (PCB)
Temperature Coefficient	$\pm 0.02\%/^{\circ}\text{C}$
<b>PHYSICAL SPECIFICATIONS</b>	
Weight	1.056 oz
Dimensions (L x W x H)	2.28 x 1.45 x 0.42 inches 57.9 x 36.8 x 10.7 mm

**MODEL SELECTION GUIDE**

Model Number	Nominal Input Voltage	Input Voltage Range	Output Voltage	Output Current	Output Noise	Output Power	Efficiency	Technical Datasheets
MPQ24S3.3-66C	24 VDC	10 – 36 VDC	3.3 VDC	20A	150mVp-p	66W	87%	
MPQ24S3.3-85C	24 VDC	18 – 36 VDC	3.3 VDC	25A	150mVp-p	83W	88%	
MPQ24S5-50C	24 VDC	10 – 36 VDC	5 VDC	10A	82mVp-p	50W	87%	<a href="#">View PDF</a>
MPQ24S5-100C	24 VDC	10 – 24 VDC	5 VDC	20A	175mVp-p	100W	87%	
MPQ24S5-125C	24 VDC	18 – 36 VDC	5 VDC	25A	175mVp-p	125W	87%	
MPQ24S15-50C	24 VDC	10 – 36 VDC	15 VDC	4A	65mVp-p	60W	88%	<a href="#">View PDF</a>
MPQ24S24-50C	24 VDC	10 – 36 VDC	24 VDC	2.5A	150mVp-p	60W	88%	<a href="#">View PDF</a>
MPQ24S48-50C	24 VDC	10 – 36 VDC	48 VDC	1A	104mVp-p	48W	87%	<a href="#">View PDF</a>
MPQ48S3.3-66	48 VDC	36 – 75 VDC	3.3 VDC	20A	150mVp-p	66W	90%	<a href="#">View PDF</a>
MPQ48S3.3-85	48 VDC	36 – 75 VDC	3.3 VDC	25A	150mVp-p	83W	88%	<a href="#">View PDF</a>
MPQ48S5-100	48 VDC	36 – 75 VDC	5 VDC	20A	175mVp-p	100W	92%	<a href="#">View PDF</a>
MPQ48S5-125	48 VDC	36 – 75 VDC	5 VDC	25A	175mVp-p	125W	90%	
MPQ48S12-120	48 VDC	36 – 75 VDC	12 VDC	10A	100mVp-p	120W	90%	
MPQ48S24-100	48 VDC	36 – 75 VDC	24 VDC	4.16A	100mVp-p	100W	91%	<a href="#">View PDF</a>

**NOTES**

1. A heatsink can be applied for an extended temperature range. For a heatsink add the suffix "HS" to the part number.
2. Remote ON/OFF is primary referenced. Positive logic is standard. For negative logic add the suffix "R" to the part number.
3. All 24Vin models must have a case. 48Vin models can either be open frame (no suffix) or have a case (add "C" suffix to the part number). Both 24Vin and 48Vin models are heatsink compatible.
4. All DC/DC converters should be externally fused on the input side. Please consult factory for more information.

## MECHANICAL DRAWINGS

Pin	Pin Name	Function	Comments
1	+Vin	Positive Input	
2	Enable	Remote ON/OFF	If not used leave open for standard unit, short to -Vin on Negative Logic (suffix "R" units).
3	-Vin	Negative Input	
4	-Vout	Negative Output	
5	-SENSE	Negative Remote Sense	If not used short to -Vo.
6	TRIM	Output Voltage Trim	If not used leave open.
7	+SENSE	Positive Remote Sense	If not used short to +Vo.
8	+Vout	Positive Output	

Unit: inches [mm]

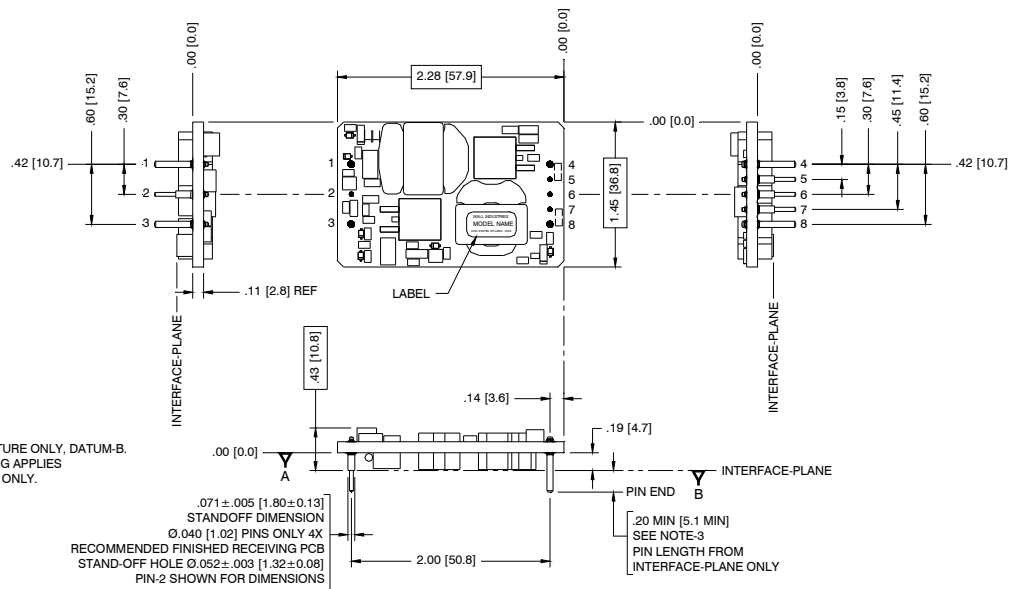
(Open Frame - No suffix)

Open frame is available for 48Vin models only

PIN DESIGNATION	PIN Ø
1 +Vin	Ø.062 [1.57]
2 ON/OFF	Ø.040 [1.02]
3 -Vin	Ø.062 [1.57]
4 +Vout	Ø.062 [1.57]
5 +SENSE	Ø.040 [1.02]
6 TRIM	Ø.040 [1.02]
7 -SENSE	Ø.040 [1.02]
8 -Vout	Ø.062 [1.57]

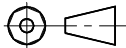
### NOTES:

- PIN TO PIN TOLERANCE:  $\pm 0.10$  [ $\pm 0.25$ ] MEASURED AT STANDOFF FEATURE ONLY, DATUM-B.
- PIN DIAMETER TOLERANCE OF:  $\pm 0.005$  [ $\pm 0.13$ ] MEASUREMENT READING APPLIES TO AREA FROM INTERFACE-PLANE SURFACE DATUM-B TO END OF PIN ONLY.
- UNLESS OTHERWISE SPECIFIED.



UNLESS OTHERWISE SPECIFIED  
ALL DIMENSIONS ARE IN INCHES  
[XX] ARE IN MILLIMETERS  
APPLIED TOLERANCES:  
ANGLES =  $\pm 1^\circ$   
.XX =  $\pm 0.02$  [0.5] .XXX =  $\pm 0.010$  [0.25]  
DO NOT SCALE DRAWING  
INTERPRET DIMENSION AND TOLERANCE  
PER ASME Y14.5M - 1994

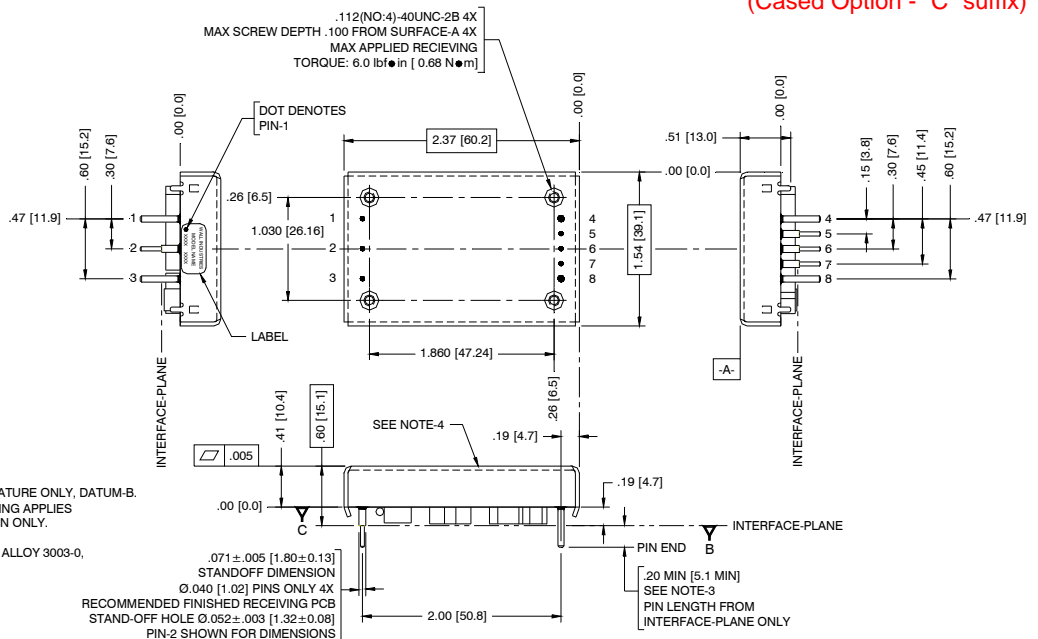
THIRD ANGLE PROJECTION



PIN DESIGNATION	PIN Ø
1 +Vin	Ø.062 [1.57]
2 ON/OFF	Ø.040 [1.02]
3 -Vin	Ø.062 [1.57]
4 +Vout	Ø.062 [1.57]
5 +SENSE	Ø.040 [1.02]
6 TRIM	Ø.040 [1.02]
7 -SENSE	Ø.040 [1.02]
8 -Vout	Ø.062 [1.57]

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- PIN DIAMETER TOLERANCE OF:  $\pm 0.005$  [ $\pm 0.13$ ] MEASUREMENT READING APPLIES TO AREA FROM INTERFACE-PLANE SURFACE DATUM-C TO END OF PIN ONLY.
- UNLESS OTHERWISE SPECIFIED.
- THERMAL TRANSFER PLATE MATERIAL: .040 [1.02] THICK, ALUMINUM ALLOY 3003-0, PER: QQA 250/2 WITH BLACK SOFT SULFURIC ANODIZE FINISH.



(Cased Option - "C" suffix)

**MECHANICAL DRAWING**

(Heatsink Option - "HS" suffix)

Unit: inches [mm]

