



**PICOVERTER®**

## DC-DC Converters, 50-60 Watt Family

World's Most Advanced Ultra High Density DC-DC Converters

Up to 60 Watts  
48 and 300 VDC Input

*Evaluation Boards Available*

### DESCRIPTION

PicoVerter modules are high density DC-DC converters designed for use in tele-com and other centralized modular and distributed power applications. All use metal PC boards, planar transformers, and surface mount construction to produce up to 60 watts in a tiny package.



### FEATURES

- Miniature Size – Low Profile .42"
- High Efficiency
- Low Cost
- Industry Standard Pin-out
- Low Thermal Resistance
- 100°C Baseplate Operation
- Constant Frequency Operation
- Non-Shutdown Over Voltage Protection
- Logic On/Off
- Fully Automated Manufacturing
- Safety Agency Compliant

### MODEL SELECTION

Model Number		Output	
Input		Voltage	Current
48 VDC (36-72V)	300 VDC (220-400V)		
pV48-3	pV300-3	3.3V	12.5A
pV48-5	pV300-5	5V	10A
pV48-12	pV300-12	12V	5A
pV48-15	pV300-15	15V	4A
pV48-24	pV300-24	24V	2.5A

## pV48 SERIES SPECIFICATIONS

		<b>MIN</b>	<b>TYPICAL</b>	<b>MAX</b>	<b>CONDITIONS</b>
<b>INPUT</b>	Input voltage	36VDC	48VDC	72VDC	
	Input reflected ripple		10%		full load, nominal line
	No load power dissipation		0.76W		nominal line
<b>OUTPUT</b>	Set point accuracy		±0.5%	±1%	full load
	Load regulation		0.1%	0.2%	0 - full load
	Line regulation		0.1%	0.2%	36 - 72VDC
	Ripple		1%	3%	0 - 20MHz
	Trim range	±10%			
	Remote sense compensation	0.5V total			
	OVP (non shutdown auto. recovery)	105%	110%	120%	3V model
	OVP (non shutdown auto. recovery)	110%	115%	130%	5-24V models
	Current Limit (auto.recovery)		115%		
	Short circuit current		130%		
	Transient response - Excursion		2%		20-80% fl, 0.5 A/us
	Recovery Time		50µs	200µs	Vout 1%
	Temperature drift			.02%/°C	
<b>EFFICIENCY</b>	5V Model		83%		full load, nominal line
	15V Model		87%		full load, nominal line
<b>ISOLATION</b>	Input to output	3000VDC			consult factory for procedure
	Input to case	1500VDC			
	Output to case	500VDC			
<b>THERMAL</b>	Operating temperature	-40°C case		+100°C case	
	Automatic shut down temperature	+100°C case	+105°C case	+110°C case	
	Thermal resistance case to ambient		6.6 °C/w		
	Storage temperature	-55°C		+110°C	
<b>WEIGHT</b>			3.4oz. (96 grams)		
<b>SIZE</b>		0.42" x 2.40" x 2.30" (1.07cm x 6.10cm x 5.84cm)			

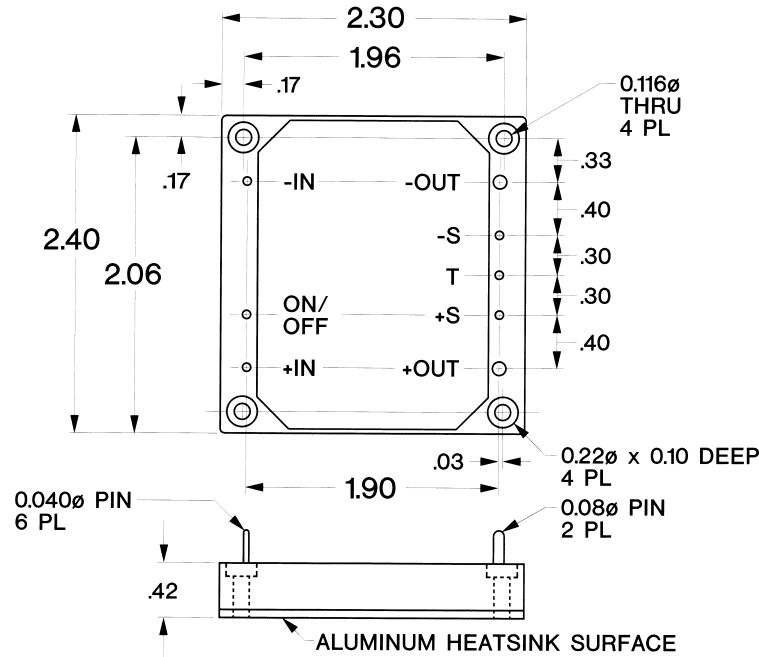
## pV300 SERIES SPECIFICATIONS — PRELIMINARY

		<b>MIN</b>	<b>TYPICAL</b>	<b>MAX</b>	<b>CONDITIONS</b>
<b>INPUT</b>	Input voltage	220VDC	300VDC	400VDC	
	Input reflected ripple		10%		full load, nominal line
<b>OUTPUT</b>	Set point accuracy		±0.5%	±1%	full load
	Load regulation		0.1%	0.2%	0 - full load
	Line regulation		0.1%	0.2%	220-400VDC
	Ripple		1%	3%	0 - 20MHz
	Trim range	±10%			
	Remote sense compensation	0.5V total			
	OVP (non shutdown auto. rec.)	110%	115%	130%	
	Current Limit (auto.rec.)		115%		
	Short circuit current		130%		
	Transient response - Excursion		2%		20-80% fl, 0.5 A/us
	Recovery Time (Vout 1%)		50µs	200µs	Vout 1%
	Temperature drift			.02%/°C	
	<b>ISOLATION</b>	Input to output	4500VDC		
Input to case		2500VDC			
Output to case		500VDC			
<b>THERMAL</b>	Operating temperature	-40°C case		+100°C case	
	Automatic shut down temperature	+100°C case	+105°C case	+110°C case	
	Thermal resistance case to ambient		6.6 °C/w		
	Storage temperature	-55°C		+110°C	
<b>WEIGHT</b>			3.4oz. (96 grams)		
<b>SIZE</b>		0.42" x 2.40" x 2.30" (1.07cm x 6.10cm x 5.84cm)			

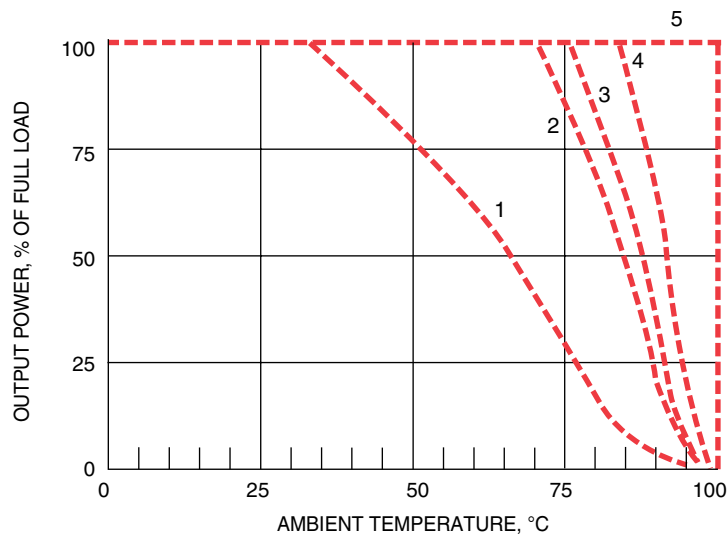


# PICOVERTER® Outline Drawing & Performance Data

## OUTLINE DRAWING



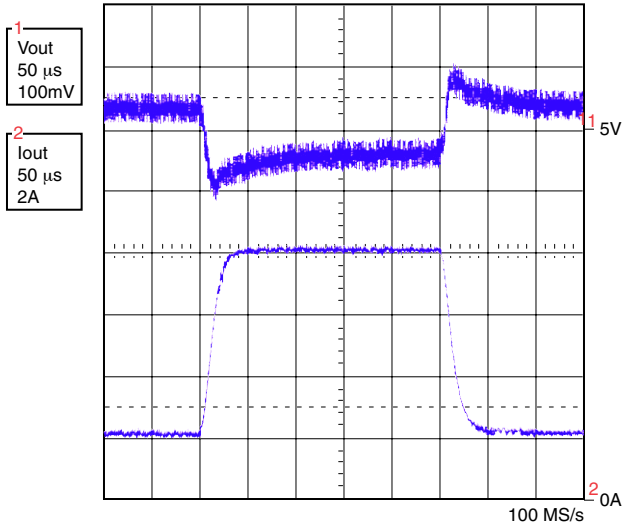
## THERMAL PERFORMANCE



- 1 - With No Heatsink and No Airflow
- 2 - With 2003 Heatsink and No Airflow or, with a 2.9°C/W Heatsink
- 3 - With 2003 Heatsink and 200 LFM Airflow or, with a 2.4°C/W Heatsink
- 4 - With 2003 Heatsink and 400 LFM Airflow or with a 1.6°C/W Heatsink
- 5 - Output Power vs. Case Temperature. No Derating Required for Tc<100°C

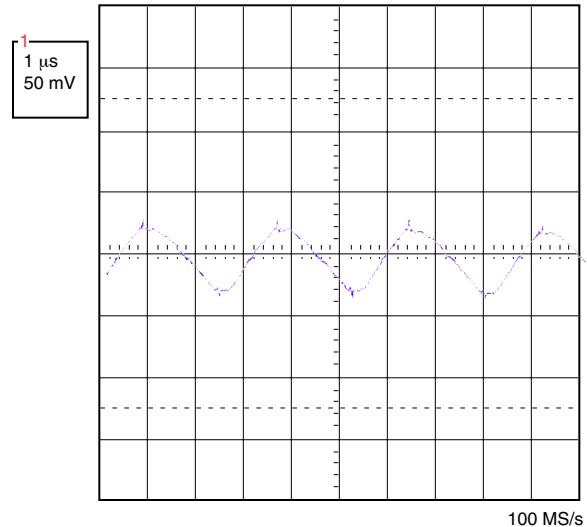
TRANSIENT RESPONSE & OUTPUT RIPPLE

Transient Response



MODEL pV48-5  
LOAD STEP 2A-8A-2A. CURRENT SLEW RATE 0.5A/μS.

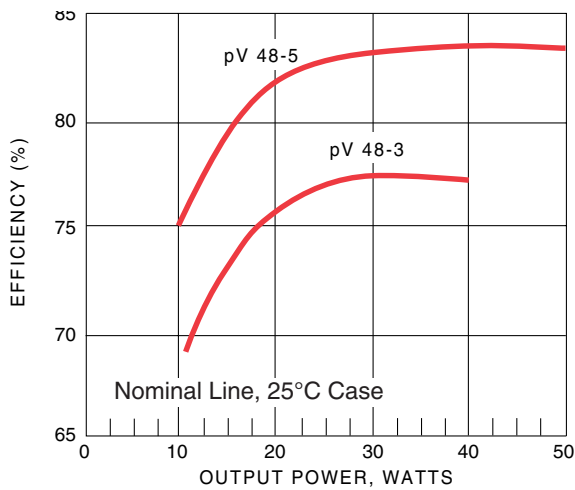
Output Ripple



MODEL pV48-5.  
DSO, 400MHZ ANALOG BW, 100 MS/s SAMPLING.

EFFICIENCY

Efficiency—3 & 5V Output Models



Efficiency—12 & 24V Output Models

