



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 telecom 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			
Input		Output	
48 VDC (36-72V)	300 VDC (220-400V)	Voltage	Current
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

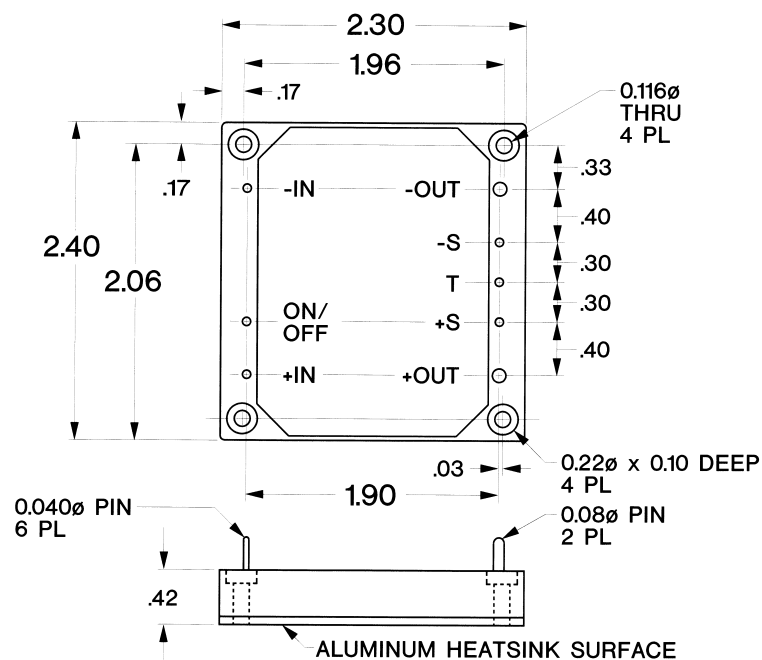
pV48 SERIES SPECIFICATIONS

INPUT		MIN	TYPICAL	MAX	CONDITIONS
	Input voltage	36VDC	48VDC	72VDC	
	Input reflected ripple		10%		full load, nominal line
	No load power dissipation		0.76W		nominal line
OUTPUT	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	
EFFICIENCY	5V Model		83%		full load, nominal line
	15V Model		87%		full load, nominal line
ISOLATION	Input to output	3000VDC			consult factory for procedure
	Input to case	1500VDC			
	Output to case	500VDC			
THERMAL	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	
WEIGHT			3.4oz. (96 grams)		
SIZE			0.42" x 2.40" x 2.30" (1.07cm x 6.10cm x 5.84cm)		

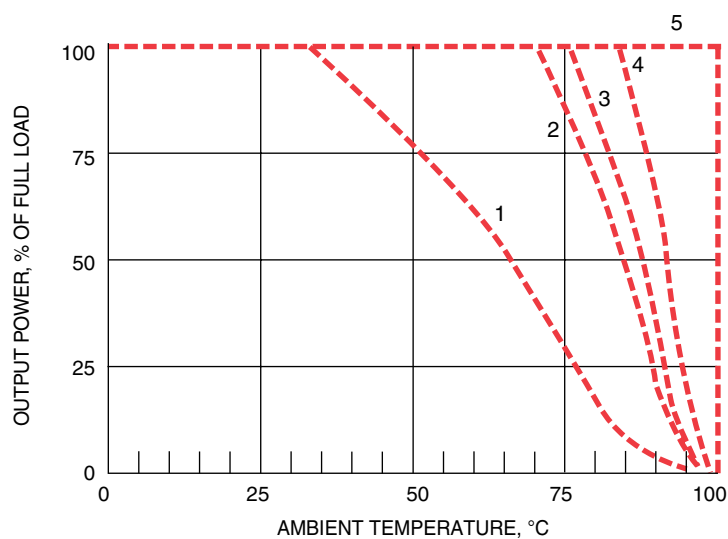
pV300 SERIES SPECIFICATIONS — PRELIMINARY

INPUT		MIN	TYPICAL	MAX	CONDITIONS
	Input voltage	220VDC	300VDC	400VDC	
	Input reflected ripple		10%		full load, nominal line
OUTPUT	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	
ISOLATION	Input to output	4500VDC			
	Input to case	2500VDC			
	Output to case	500VDC			
THERMAL	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	
WEIGHT			3.4oz. (96 grams)		
SIZE			0.42" x 2.40" x 2.30" (1.07cm x 6.10cm x 5.84cm)		

OUTLINE DRAWING



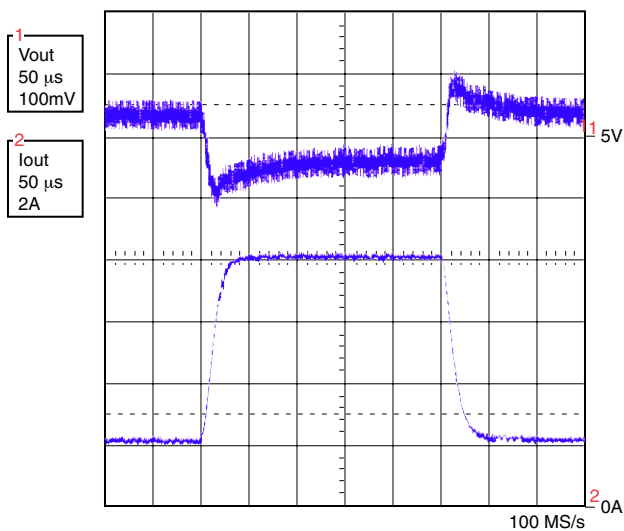
THERMAL PERFORMANCE



- 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 $T_c < 100^\circ\text{C}$

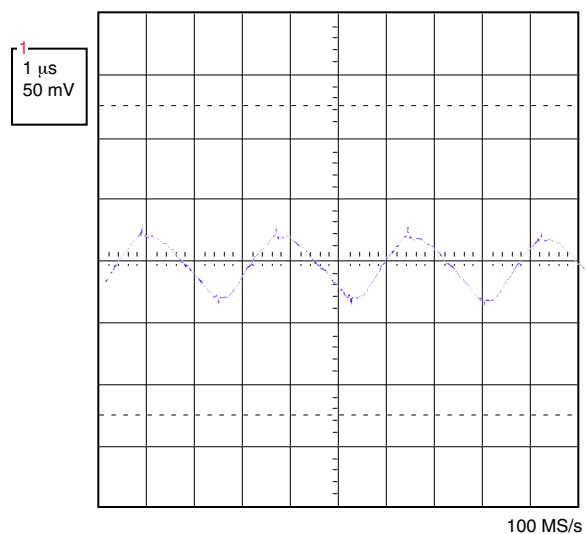
TRANSIENT RESPONSE & OUTPUT RIPPLE

Transient Response



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

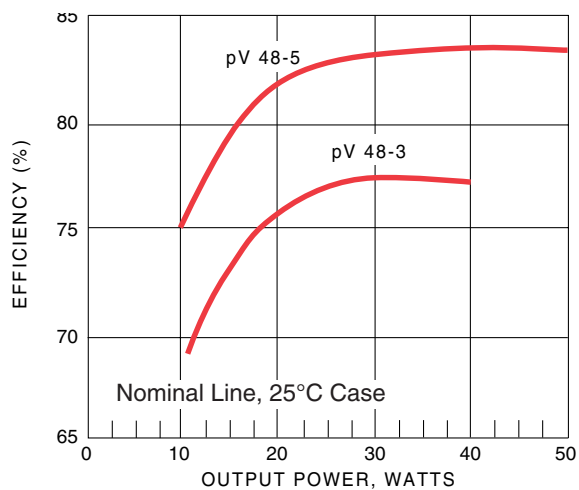
Output Ripple



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

EFFICIENCY

Efficiency—3 & 5V Output Models



Efficiency—12 & 24V Output Models

