



Size: 60.70mm x 57.91mm x 13.30mm  
(2.39in. x 2.28in. x 0.52in.)

### MODEL SELECTION

Model Name	Vin(Vdc)	Vout(Vdc)	Io(Amps)	Watts
EPC-2.5SC48-A	36-75	2.5	15	37.5
EPD-2.5SC48-A	36-75	2.5	20	50
EPE-2.5SC48-A	36-75	2.5	30	75
EPK-2.5SC48-A	36-75	2.5	50	125

### FEATURES

- ▶ High Power Density - Up to 51W/in<sup>3</sup>
- ▶ Constant Frequency - 370kHz
- ▶ -40 to +85°C Operation
- ▶ 105°C Over Temperature
- ▶ High Efficiency
- ▶ Low Output Noise
- ▶ Industry-Standard Pinout
- ▶ Metal Baseplate
- ▶ 2:1 Input Voltage Range
- ▶ Thermal Protection
- ▶ Over Voltage Protection
- ▶ Current Limit/Short Circuit Protection
- ▶ Adjustable Output Voltage: 60% to 110% of V<sub>0,set</sub>
- ▶ Remote Sense
- ▶ Logic ON/OFF
- ▶ Safety Agency Approval

### SPECIAL FEATURES

- ▶ Long Lead(0.23in)-LL
- ▶ Negative Logic Control-Neg.  
(Remote Control For C-T)
- ▶ Threaded hole standoff-Td

### SPECIFICATION

#### ABSOLUTE MAXIMUM RATINGS:

Exceeding absolute maximum ratings may cause permanent damage and reduce reliability

PARAMETER	MIN	MAX	UNITS	CONDITIONS
Input Voltage		80	Vdc	Continuous
Transient Input Voltage		100	Vdc	100 msec max.
Input/Output Isolation		1500	Vdc	
Operating Case Temperature	-40	100	°C	
Storage Temperature	-40	110	°C	

#### INPUT SPECIFICATIONS:

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Operation Input Voltage (V <sub>i</sub> )	36	48	75	V	
Maximum Input Current (I <sub>i,max</sub> ):					V <sub>i</sub> = 0Vdc to 75Vdc I <sub>o</sub> = I <sub>o,max</sub>
EPC-2.5SC48-A			1.9	A	
EPD-2.5SC48-A			2.5	A	
EPE-2.5SC48-A			3.5	A	
EPK-2.5SC48-A			5.5	A	
Inrush Transient			1	A <sup>2</sup> t	
Input Reflected-Ripple Current:					5Hz~20MHz, 12uH Source Impedance
Peak to Peak		5		mAp-p	
Input Ripple Rejection		60		dB	@ 120Hz

**OUTPUT SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Output Voltage Set Point ( $V_{o,set}$ )	2.46	2.5	2.55	V	$T_c=25^\circ\text{C}$ , $V_i=48\text{V}$ , $I_o=I_{o,max}$
Line Regulation		0.01	0.1	%	$V_i=36\text{V to }75\text{V}$
Load Regulation		0.05	0.2	%	$I_o=0.5\text{A to }I_{o,max}$
Temperature Drift		15	50	mV	$T_c=-40^\circ\text{C to }100^\circ\text{C}$
Total Regulation			2.3		
Output Ripple and Noise Voltage:					5Hz to 20MHz
RMS			40	mVrms	
Peak to Peak	0		150	mV <sub>p-p</sub>	
External Load Capacitance			10,000	uF	Electrolytic capacitor
Output Current ( $I_o$ ):					
EPC-2.5SC48-A	0.5		15	A	At $I_o < I_{o,min}$ , the modules may exceed output ripple specifications
EPD-2.5SC48-A	0.5		20	A	
EPE-2.5SC48-A	0.5		30	A	
EPK-2.5SC48-A	0.5		50	A	
Output Current limit:					$V_o=90\%$ of $V_{o,set}$
EPC-2.5SC48-A		18	20	A	
EPD-2.5SC48-A		24	26	A	
EPE-2.5SC48-A		34	39	A	
EPK-2.5SC48-A		55	65	A	
Output Short Circuit Current			170	% $I_{o,max}$	$V_o=250\text{mV}$
Switching Frequency				kHz	
Efficiency:					
EPC-2.5SC48-A	76	78		%	$T_c=70^\circ\text{C}$ $V_i=48\text{V}$ $I_o=I_{o,max}$
EPD-2.5SC48-A	77	79		%	
EPE-2.5SC48-A	77	79		%	
EPK-2.5SC48-A	74	76		%	
Dynamic Response:					25%-50%-75% load
Peak Deviation		3		% $V_{o,set}$	0.1A/ $\mu\text{s}$
Settling Time			300	$\mu\text{s}$	$T_c=25^\circ\text{C}$ $V_i=48\text{V}$

**CONTROL SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	
Logic On/Off:					
Logic Low: Ion/off			1	mA	
Von/off			1.2	V	
Logic High: Ion/off			50	$\mu\text{A}$	
Von/of			15	V	
Turn-On Time		8	25	ms	
Output Remote Sense Range			0.5	V	
Output Voltage Trim Range	80		110	% $V_{o,set}$	
Over Voltage Protection	3.0		4.0	V	
Over Temperature Protection		105		$^\circ\text{C}$	

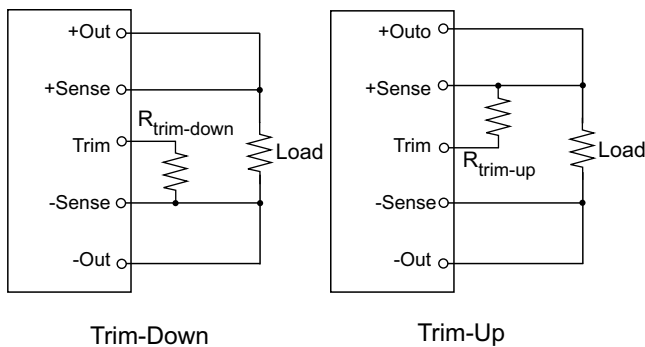
**ISOLATION SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Input to Output		1500		Vdc	
Input to Case		1500		Vdc	
Output to Case		500		Vdc	
Input to Output Capacity		2000		pF	
Isolation Resistance	10			Mohm	

**GENERAL SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
MTBF		1.3		Mhrs	Tc=40°C, Io=80% of Io,max
Weight		118		g	
Size		2.39x2.28x0.52		in <sup>3</sup>	

**TRIM CIRCUIT**



$$R_{trim-down} = ((100/\Delta\%) - 2) \text{ Kohms}$$

$$R_{trim-up} = \left( \frac{V_o(100 + \Delta\%)}{1.225\Delta\%} - \frac{100 + 2\Delta\%}{\Delta\%} \right) \text{ Kohms}$$

$\Delta\%$  = Desired Output Voltage Change

$V_o$  = Output Voltage

$R_{trim-up}$  = External Resistor Value to Increase  $V_o$

$R_{trim-down}$  = External Resistor Value to Decrease  $V_o$

**OUTLINE DRAWING**

