

MODEL SELECTION

Model Name	Vin(Vdc)	Vout(Vdc)	Io(Amps)	Watts
EPT-12SC48-A	36-75	12	2.5	30
EPB-12SC48-A	36-75	12	4.2	50
EPC-12SC48-	36-75	12	6.3	75
EPD-12SC48-A	36-75	12	8.3	100
EPE-12SC48-A	36-75	12	12.5	150
EPO-12SC48-A	36-75	12	16.7	200
EPP-12SC48-A	36-75	12	20	240

FEATURES

- ▶ High Power Density - Up to 98W/in<sup>3</sup>
- ▶ Constant Frequency - 370kHz
- ▶ -40 to +100°C Operation
- ▶ 105°C Over Temperature
- ▶ High Efficiency
- ▶ Low Output Noise
- ▶ Industry-Standard Pinout
- ▶ Metal Baseplate
- ▶ 2:1 Input Voltage Range
- ▶ Thermal Protection(100W and up only)
- ▶ 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



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

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>
EPT-12SC48-A			1.6	A	
EPB-12SC48-A			2.5	A	
EPC-12SC48-A			3.5	A	
EPD-12SC48-A			4.0	A	
EPE-12SC48-A			6.5	A	
EPO-12SC48-A			8.0	A	
EPP12SC48-A			10.5	A	
Inrush Transient			1	A <sup>2</sup> t	
Input Reflected-Ripple Current: Peak to Peak		5		mAp-p	5Hz~20MHz, 12uH Source Impedance
Input Ripple Rejection		60		dB	@ 120Hz

**DC-DC Converters,  
 EP SERIES 36~75Vdc Input**
**OUTPUT SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Output Voltage Set Point ( $V_{o,set}$ )	11.78	12.00	12.22	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		50	150	mV	$T_c=-40^\circ\text{C to }100^\circ\text{C}$
Total Regulation			1.5	%	
Output Ripple and Noise Voltage:					5Hz to 20MHz
RMS			50	mV <sub>rms</sub>	
Peak to Peak			200	mVp-p	
External Load Capacitance	0		6,800	uF	Electrolytic capacitor
Output Current( $I_o$ ):					At $I_o < I_{o,min}$ , the modules may exceed output ripple specifications
EPT-12SC48-A	0.3		2.5	A	
EPB-12SC48-A	0.3		4.2	A	
EPC-12SC48-A	0.3		6.3	A	
EPD-12SC48-A	0.3		8.3	A	
EPE-12SC48-A	0.3		12.5	A	
EPO-12SC48-A	0.3		16.7	A	
EPP12SC48-A	0.3		20.0	A	
Output Current limit::					$V_o=90\%$ of $V_{o,set}$
EPT-12SC48-A		7.5	8.5		
EPB-12SC48-A		4.8	5.8		
EPC-12SC48-A		7.2	8.8		
EPD-12SC48-A		9.6	10.8		
EPE-12SC48-A		14.4	16.3		
EPO-12SC48-A		18.3	21.7		
EPP-12SC48-A		22.0	26.0		
Output Short Circuit Current			170	% $I_{o,max}$	$V_o=250\text{mV}$
Switching Frequency		370		kHz	
Efficiency:					$T_c=70^\circ\text{C}$ $V_i=48\text{V}$ $I_o=I_{o,max}$
EPT-12SC48-A	82	85		%	
EPB-12SC48-A	84	87		%	
EPC-12SC48-A	84	87		%	
EPD-12SC48-A	84	86		%	
EPE-12SC48-A	86	88		%	
EPO-12SC48-A	85	87		%	
EPP-12SC48-A	84	86		%	
Dynamic Response:					25%-50%-75% load 0.1A/ $\mu\text{s}$ $T_c=25^\circ\text{C}$ $V_i=48\text{V}$
Peak Deviation		2		% $V_{o,set}$	
Settling Time			300	$\mu\text{s}$	

**CONTROL SPECIFICATIONS:**

PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
Logic On/Off:					
Logic Low: Ion/off			1	mA	Von/off=0V
Von/off			1.2	V	Ion/off<1mA
Logic High: Ion/off			50	$\mu\text{A}$	Von/off=15V
Von/of			15	V	Ion/off=0.0 $\mu\text{A}$
Turn-On Time		8	25	ms	$I_o=80\%$ of $I_{o,max}$ $V_o$ with +/- 1% $V_{o,set}$
Output Remote Sense Range			1.2	V	
Output Voltage Trim Range	60		110	% $V_{o,set}$	
Over Voltage Protection	13.5		16	V	Auto recovery
Over Temperature Protection		105		$^\circ\text{C}$	Auto recovery (100W,150W, 200W and 240W only)

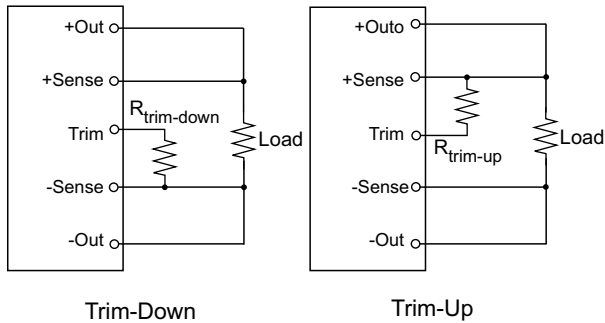
**ISOLATION SPECIFICATIONS:**

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**

