

EP 10W – 12W - Wide Input Range DC-DC Converter

Features

10W ~ 12W DIL PACKAGE
9-18V, 18-36V, 36-75V
WIDE INPUT RANGE
100% BURN IN
HIGH EFFICIENCY
UL94V-0 PACKAGE MATERIAL
CUSTOM SOLUTIONS AVAILABLE
RoHS COMPLIANT



Specification

Output Specification

Voltage Setpoint Accuracy	+/-2% max.
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) ¹	100mVp-p max.
Line Regulation ²	+/-0.5% max.
Load Regulation ³	+/-0.5% max.
Output: 2.5V , 3.3V	+/-1% max.
Minimum Load	20% of Full Load
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Over Load Protection	110%~180%
Transient Response ⁴	350uS max.

Input Specification

Input Voltage Range	2:1 Input Range
Input Filter	Pi Network
Protection	Fuse Recommended
Start up time(Nominal input)	600ms max.

Environmental Specifications

Operating Temperature	-40°C to +100°C (with derating)
Case Temperature	+95°C max.
Storage Temperature	-55°C to +105°C
Humidity	95% max.
Cooling	Free-Air Convection

General Specifications

Efficiency	78% min.
Isolation Voltage ⁵	1500VDC min.
Isolation Resistance	109 ohms min.
Isolation Capacitance	2200pF max.
Switching Frequency	400KHz Typ.
MTBF ⁶	>600,000 Hours
Weight	18.5g Typ.
Case Material	Five-Side Shielded Case
Case Size	31.8mm*20.3mm*12.2mm
Potting Material	Epoxy (UL94V-0)
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A
Remote On/Off	-ON
	-Off
	-Off idle current

3.0...12V/DC or open circuit
(referenced to-Vin)

0...1.2V/DC or short circuit
pin 1 and pin 2/3
2.5mA

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² High Line to Low Line.

³ Load Regulation is for output load current change from 20% to 100%.

⁴ 25% Step Load Change

⁵ 1500VDC for 10 seconds.

⁶ MIL-HDBK-217F @25 °C , Ground Benign.

Selection Guide (1) 2:1 10W-12W Output

MODEL ⁷ NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁸ CURRENT(mA)		EFF (%) ⁹	PACKAGE	Capacitor Load max
				FULL LOAD	NO LOAD			
EP9-18-2.5S3000	9-18	2.5	3000	802	70	78	A	1000uF
EP9-18-3.3S3000	9-18	3.3	3000	1025	70	80	A	1000uF
EP9-18-05S2400	9-18	5	2400	1190	70	84	A	1000uF
EP9-18-12S1000	9-18	12	1000	1204	70	83	A	220uF
EP9-18-15S800	9-18	15	800	1204	70	83	A	220uF
EP9-18-05D1200	9-18	+/-5	+/-1200	1235	70	81	A	+/-670uF
EP9-18-12D500	9-18	+/-12	+/-500	1190	70	84	A	+/-100uF
EP9-18-15D400	9-18	+/-15	+/-400	1204	70	83	A	+/-47uF
EP18-36-2.5S3000	18-36	2.5	3000	401	35	78	A	1000uF
EP18-36-3.3S3000	18-36	3.3	3000	513	35	80	A	1000uF
EP18-36-05S2400	18-36	5	2400	602	35	83	A	1000uF
EP18-36-12S1000	18-36	12	1000	602	35	83	A	220uF
EP18-36-15S800	18-36	15	800	590	35	85	A	220uF
EP18-36-05D1200	18-36	+/-5	+/-1200	618	35	81	A	+/-670uF
EP18-36-12-D500	18-36	+/-12	+/-500	595	35	84	A	+/-100uF
EP18-36-15D400	18-36	+/-15	+/-400	595	35	84	A	+/-47uF
EP36-75-2.5S3000	36-75	2.5	3000	201	25	78	A	1000uF
EP36-75-3.3S3000	36-75	3.3	3000	252	25	83	A	1000uF
EP36-75-05S2400	36-75	5	2400	298	25	84	A	1000uF
EP36-75-12S1000	36-75	12	1000	301	25	83	A	220uF
EP36-75-15S800	36-75	15	800	294	25	85	A	220uF
EP36-75-05D1200	36-75	+/-5	+/-1200	309	25	81	A	+/-670uF
EP36-75-12D500	36-75	+/-12	+/-500	298	25	84	A	+/-100uF
EP36-75-15D400	36-75	+/-15	+/-400	298	25	84	A	+/-47uF

Note: Other input to output voltages may be available. Please contact factory.

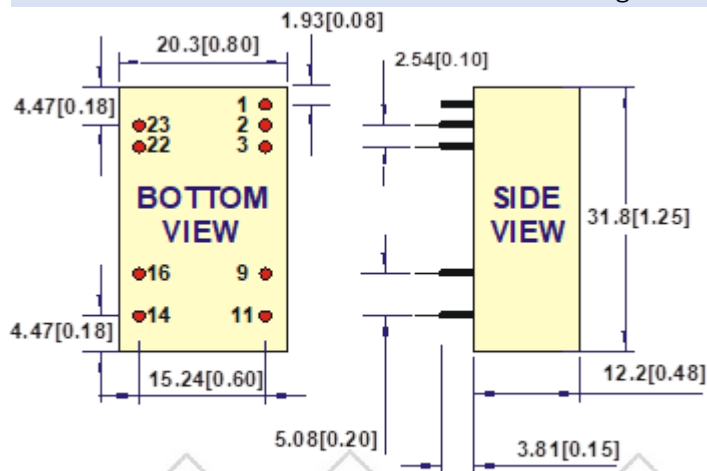
⁷ Isolation For 1500 VDC

⁸ NOMINAL INPUT VOLTAGE.

⁹ NOMINAL INPUT VOLTAGE, FULL LOAD.

Mechanical Dimensions & Recommended Footprint Details

Package "A"

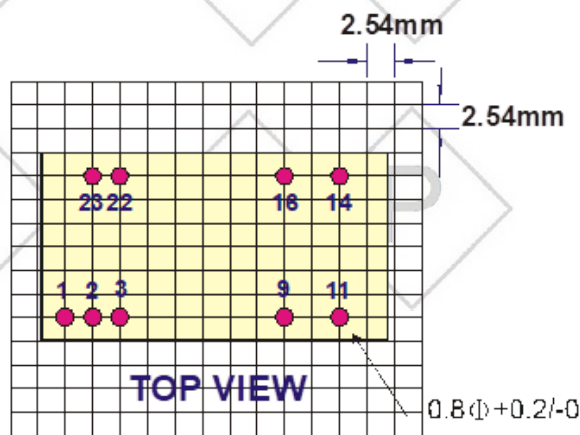


PIN	SINGLE	DUAL
1	Remote On/Off	Remote On/Off
2 & 3	-Vin	-Vin
9	NC	Common
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22&23	+Vin	+Vin

All dimensions are in mm[inches]

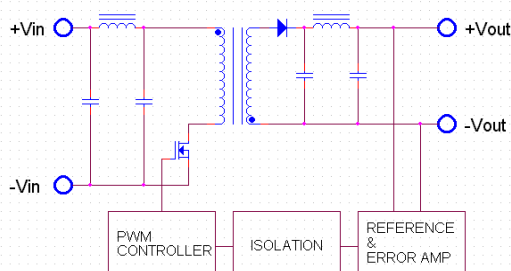
Remote On/Off Control

Control Input	PIN1	Control Common	PIN2&PIN3
Control Voltage		Converter Shutdown Idle Current	10mA
ON	>+2.5VDC or Open Circuit	Logic Compatibility	CMOS or Open Collector TTL
OFF	<+0.8VDC or Jumper to PIN2&PIN3		

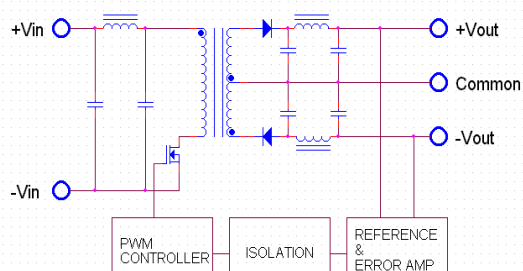


Simplified Schematic

SINGLE OUTPUT



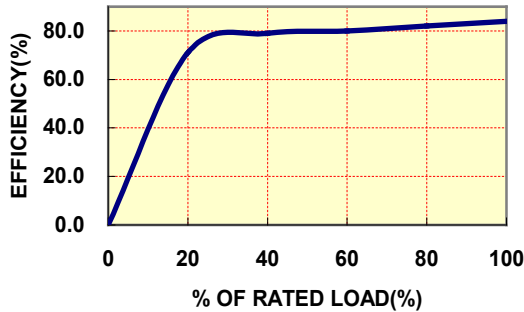
DUAL OUTPUT



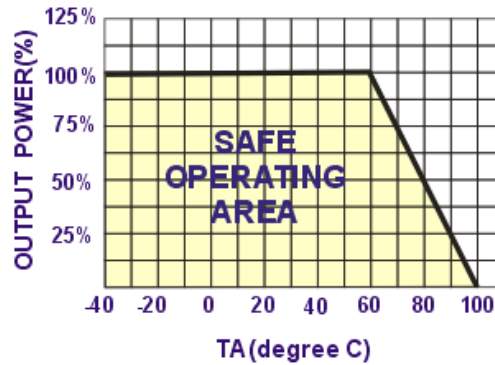
Typical Performance Curves

Specifications typical at $T_a=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise specified.

OUTPUT LOAD VS EFFICIENCY



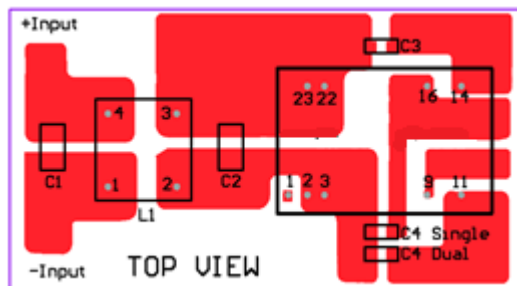
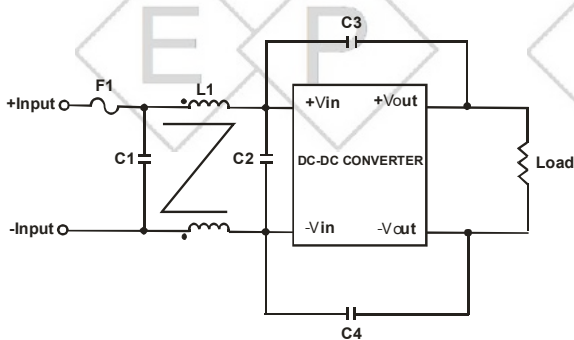
TEMPERATURE DERATING



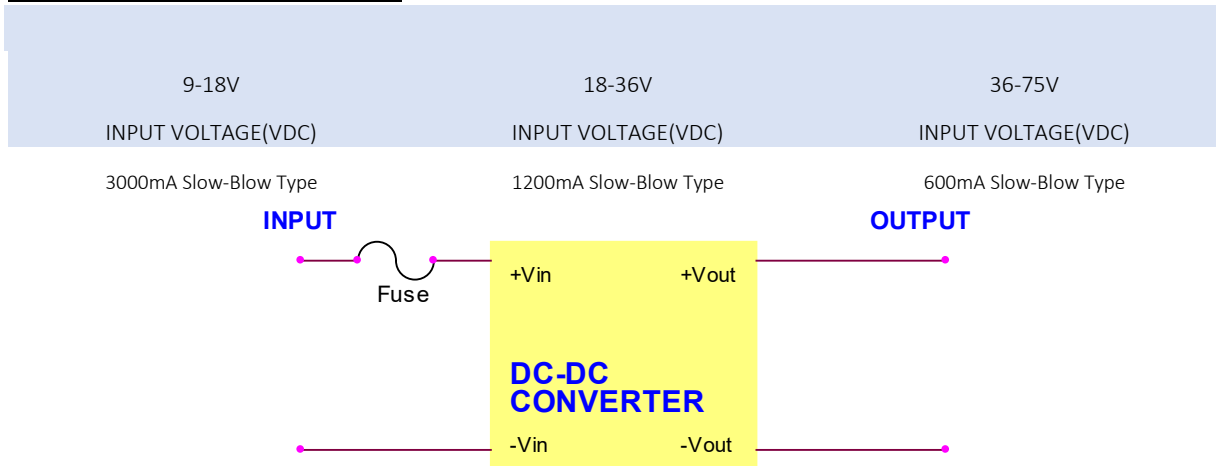
Recommended Filter for EN55022 Class B Compliance

The components used in the above figure, together with the manufacturer's part numbers for these components, are as follows:

	C1	C2	C3	C4	L1
EP-12W EP-9-**	3.3uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
EP-12W EP-18-**	4.7uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
EP-12W EP-36-**	2.2uF/100V 1812 MLCC	2.2uF/100V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke



Input Fuse Selection Guide



Note: Certain applications may require the installation of external fuse in front of the input

EP 10W - 12W Series Application Notes:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the EP 10W ~ 12W SERIES.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

We Can Offer EMC-Filter According To EN55011/22 Class A.

Spezifikationen können sich ohne Vorankündigung ändern.

Für etwaige fehlerhafte Angaben oder unvollständige Bezeichnungen kann keine Haftung übernommen werden.