Electronic Products
Elektronisches Knowhow aus einer Hand

EPLH Serie 40-80 Watt - Wide Input Range

DC-DC Converter

Features

40W-80W DIL PACKAGE
INDUSTRY STANDARD PACKAGE
9V-18V,18V-36V,36V-75V
WIDE INPUT RANGE
100% BURNED IN
EFFICIENCY UP TO 93%
UL 94V-0 PACKAGE MATERIAL
CUSTOM SOLUTIONS AVAILABLE

Specification

Output Specification	Voltage Setpoint Accuracy	+/-2% max
	Over Voltage Protection	Built-in
	Temperature Coefficient	+/-0.03%/°C
	Ripple & Noise(20MHz BW) [1]	100mVp-p max
	Line Regulation [2]	+/-0.5% max
	Load Regulation [3]	+/-0.5% max
	Minimum load	10% of Full Load
	Short Circuit Protection	Continuous
	Short Circuit Restart	Automatic
	External Trim Adj. Range	+/-10%
	Over Load Protection	150% typ.
	Transient Response[4]	500uS max
Input Specification	Input Voltage Range	2:1
	Input Filter	Pi Network
	Protection	Fuse Recommended
	OVLO(Over Voltage Lockout)	See Page 3
	UVLO(Under Voltage Lockout)	See Page 3
	OVLO & UVLO Circuit Restart	Automatic
Environmental Specifications	Operating Temperature(40W~60W)	-40°C to +55°C
	Operating Temperature(80W)	-40°C to +40°C
	Operating Temperature(with Heat Sink) (80W)	-40°C to +50°C
	Case Temperature	+100°C max
	Storage Temperature	-55°C to +100°C
	Humidity	95% max
	Cooling	Free-Air Convection
General Specifications	Efficiency	92% typ.
	Isolation Voltage [5]	1500 VDC min
	Isolation Resistance	109 ohms min
	Isolation Capacitance	2500pF max
	Switching Frequency	250KHz typ.
	Weight	67g typ.
	Case Material	Six-Side Shielded Case
	Case Size	50.8mm*50.8mm*11mm
	Potting Material	Epoxy(UL94-V0)
	Conducted Emissions	EN55022 Class A
	Radiated Emissions	EN55022 Class A

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD, AND 25 °C UNLESS OTHERWISE NOTED

[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 10% to 100%.
[4] 50% Step Load Change.
[5] For 10 seconds

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Selection Guide 2:1 40-60W Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[6] CURRENT(mA) FULL LOAD	INPUT[6] CURRENT(mA) NO LOAD	EFF (%)[7]	CAPACITOR LOAD (Max)
EPLH-1205	9-18	5	12000	5505	160	91	1000uF
EPLH-1212	9-18	12	5000	5430	160	92	220uF
EPLH-1215	9-18	15	4000	5430	160	92	100uF
EPLH-2403.3	18-36	3.3	12000	1812	100	92	1000uF
EPLH-2405	18-36	5	12000	2778	100	90	1000uF
EPLH-2412	18-36	12	5000	2701	100	93	220uF
EPLH-2415	18-36	15	4000	2690	100	93	100uF
EPLH-4803.3	36-75	3.3	12000	906	50	92	1000uF
EPLH-4805	36-75	5	12000	1354	50	92	1000uF
EPLH-4812	36-75	12	5000	1356	50	92	220uF
EPLH-4815	36-75	15	4000	1358	80	92	100uF

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

Selection Guide 2:1 80W Output

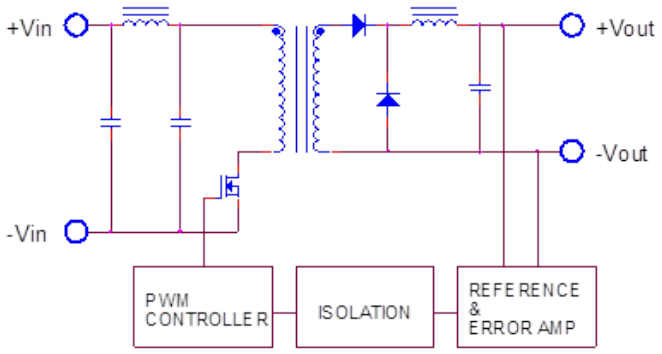
MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[8] CURRENT(mA) FULL LOAD	INPUT[8] CURRENT(mA) NO LOAD	EFF (%)[9]	CAPACITOR LOAD (Max)
EPLH-2405-80	18-36	5	16000	3623	100	92	1000uF
EPLH-2412-80	18-36	12	6666	3623	100	92	220uF
EPLH-2415-80	18-36	15	5333	3623	100	92	100uF
EPLH-4805-80	36-75	5	16000	1812	50	92	1000uF
EPLH-4812-80	36-75	12	6666	1812	50	92	220uF
EPLH-4815-80	36-75	15	5333	1812	50	92	100uF

Part Numbers Structure

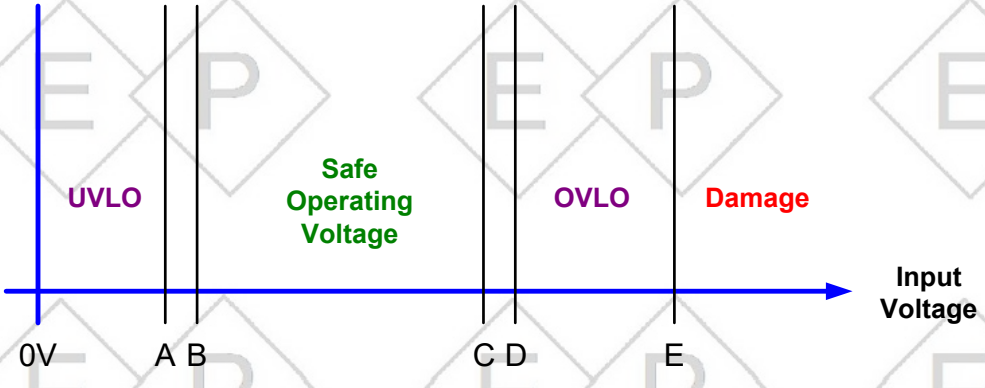
Model Name	Difference
EPLH-x1x2-(80)(HS)	EPLH=Series Name x1=Input voltage(9~18V ; 18~36V ; 36~75V) x2=Output voltage(03.3 ; 05 ; 12 ; 15) (80)= 80 Watt HS=With Heat Sink zzz= 0~9, A~Z or blank for market purpose.

[6] NOMINAL INPUT VOLTAGE.
[7] NOMINAL INPUT VOLTAGE,FULL LOAD.
[8] NOMINAL INPUT VOLTAGE.
[9] NOMINAL INPUT VOLTAGE,FULL LOAD.

Simplified Schematic



Input Operating Voltage



	A	B	C	D	E
EPLH-12*****	8V typ.	9V	18V	20V typ.	25V
EPLH-24*****	16V typ.	18V	36V	40V typ.	50V
EPLH-48*****	34V typ.	36V	75V	80V typ.	100V

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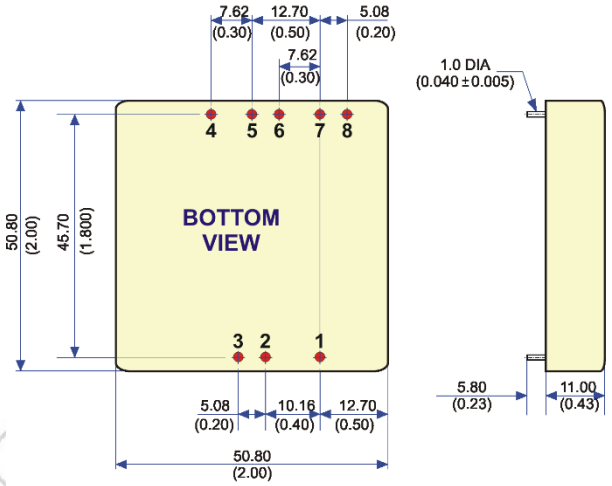
Mechanical Dimensions

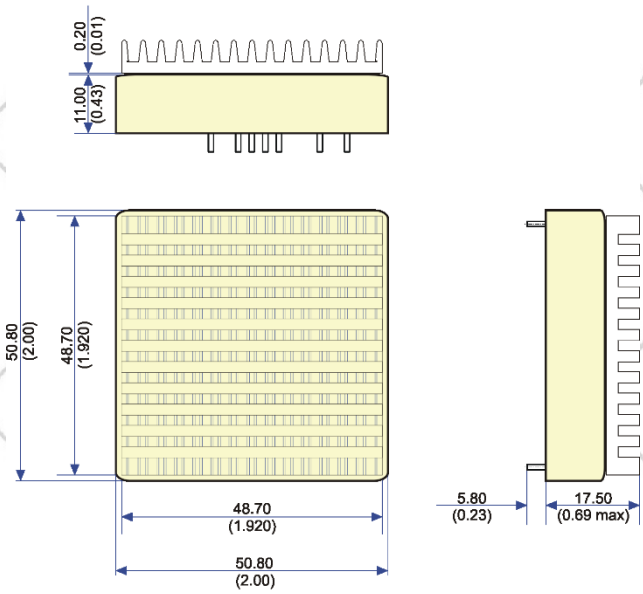
No Heat-sink



PIN	SINGLE
1	Remote On/Off
2	-Vin
3	+Vin
4	-Sense
5	+Sense
6	+Vout
7	-Vout
8	Trim

NOTE: Pin Size is Tolerance
1.0Φ ±0.10mm
All Dimensions In mm(Inches)
Tolerance .X or .XX= ±0.5mm

With Heat-sink



All dimensions are in mm [inches]

Remote On/Off Control

Control Input	PIN1	Control Common	PIN2
Control Voltage		Converter Shutdown Idle Current	10mA
ON	>+2.5VDC or Open Circuit	Logic Compatibility	CMOS or Open Collector TTL
OFF	<+0.5VDC or Jumper to PIN2		

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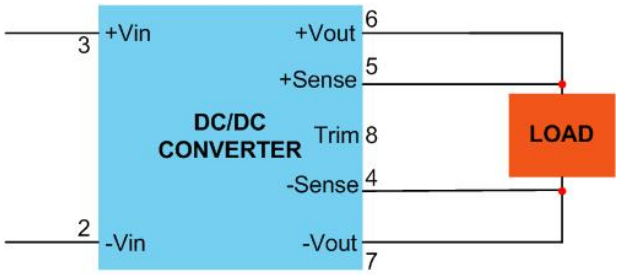
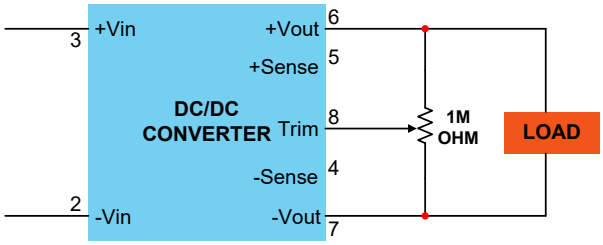
Typical Applications

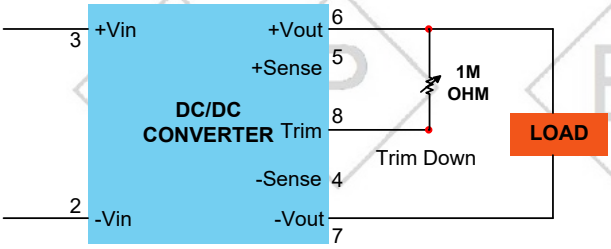
FIXED VOLTAGE OUTPUT



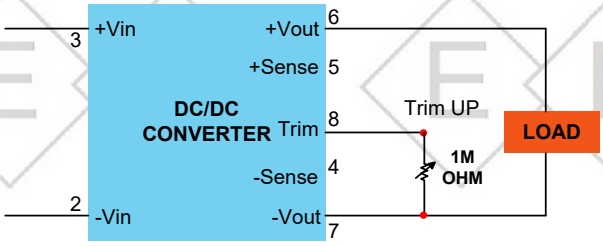
TRIM CONNECTIONS USING A TRIMPOT



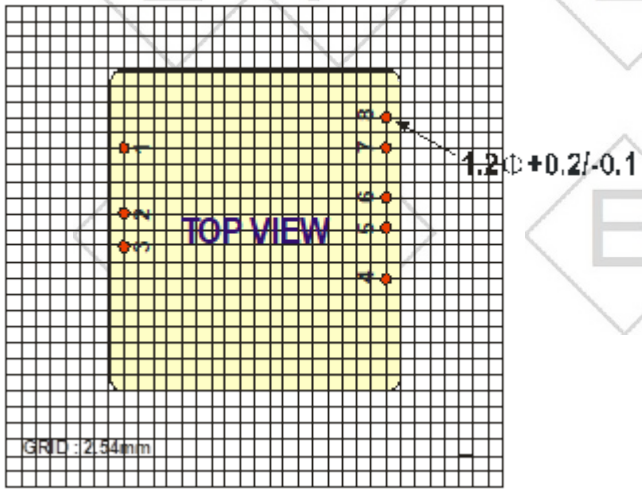
FIXED-VALUE TRIM DOWN RESISTOR



FIXED-VALUE TRIM UP RESISTOR



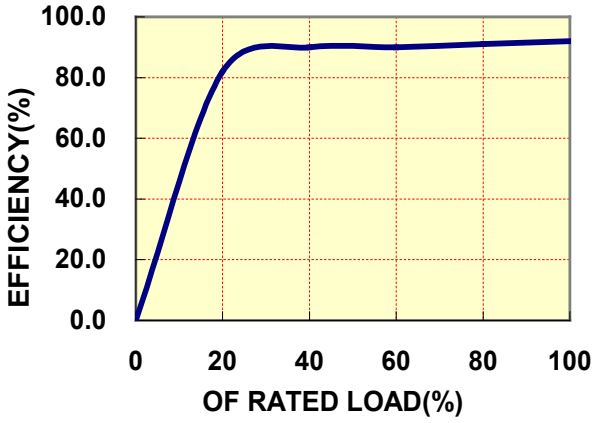
Recommended Footprint Details



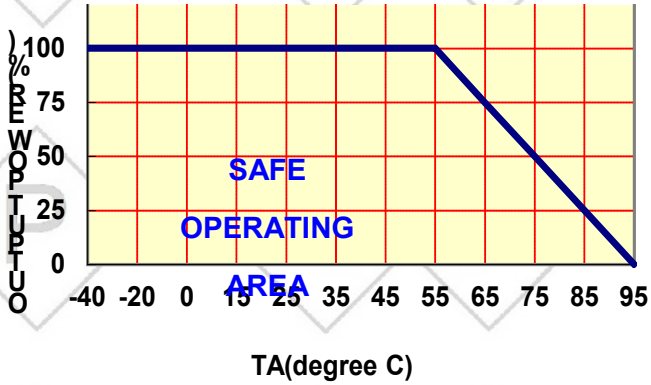
Typical Performance Curves

Specifications typical at Ta=25 °C, nominal input voltage , rated output current unless otherwise specified.

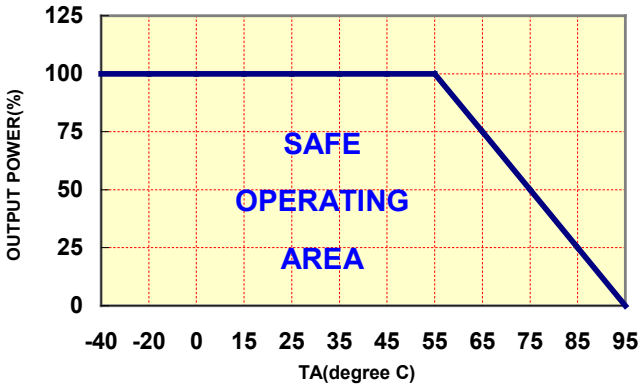
OUTPUT LOAD VS EFFICIENCY



TEMPERATURE DERATING(40W~60W)



TEMPERATURE DERATING(80W)



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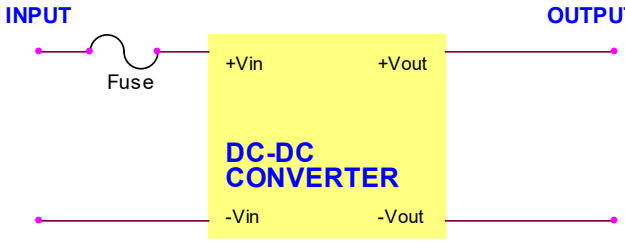
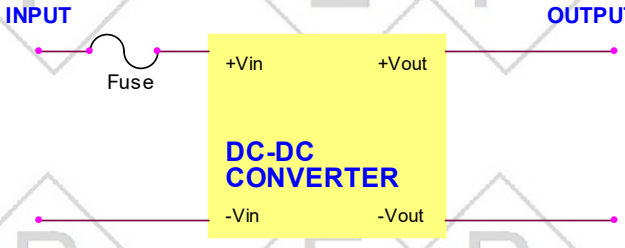
Input Fuse Selection Guide(40W~60W)

9-18V	18-36V	36-75V
INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)
15000mA Slow-Blow Type	9000mA Slow-Blow Type	4000mA Slow-Blow Type



Input Fuse Selection Guide(80W)

18-36V	36-75V
INPUT VOLTAGE(VDC)	INPUT VOLTAGE(VDC)
10000mA Slow-Blow Type	5000mA Slow-Blow Type



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

EPLH Series Application Notes:

EXTERNAL CAPACITANCE REQUIREMENTS:
External output capacitance is not required for operation, however it is recommended that 10uF MLCC and 0.1uF ceramic capacitance be selected for reduced system noise.
Additional output capacitance may be added for increased filtering, but should not exceed 1000uF.

Negative Outputs:
A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting –OUT as the negative output.

Remote ON/OFF:
The remote ON/OFF pin may be left floating if this function is not use. It is recommended to drive this pin with an open collector arrangement or a relay contact. When the ON/OFF pin is pulled low with respect to the –Vin , the converter is placed in a low power drain state.

Output TRIM:
The TRIM pin may be used to adjust the output +/-10% from the nominal setting .this function allows adjustment for voltage drops in the system