450 Watt EVD Series
DC/DC CONVERTER

Green Watt Power
Division of Calex Mfg. Co. Inc.
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ROHS COMPLIANT

Description

The EVD 450 Watt series is a ruggedized series of DC-DC converters suitable for electric vehicle, marine, industrial and other applications which draw power from a bank of batteries or other high voltage DC power source. It is used to supply power to accessories, lights, instruments, etc.

- Fully Isolated
- High Reliability
- High Efficiency
- Withstand Output Load Surges
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Input Reverse Polarity Protection
- Enable/Remote On/Off
- Very Low Quiescent Current
- IP66 Enclosure
- RoHS Compliant
- 5 Year Warranty

Model Selection

Model Number	Input Voltage Range	Input Current (Max)	Output Voltage (VDC)	Output Current (Max)	Efficiency
EVD-48-S-450-14	30 - 65 VDC	10A	14.2	32A	90%
EVD-72-S-450-13	60 - 90 VDC	10A	13.5	33A	90%
EVD-102-S-450-13	80 - 126 VDC	10A	13.5	33A	90%

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Specifications

Input Parameters - 48V				
	Min	Typ	Max	Units
Input Voltage Range	30	48	65	VDC
Input Current			10	A
Reflected Ripple Current DC to 200 kHz			0.4	A P-P
Quiescent Current		8	12	µA
Input Over Voltage (Max)	77V continuously 103V for 1 second			
Input Filter	Internal Capacitor			

Input Parameters -72V				
	Min	Typ	Max	Units
Input Voltage Range	60	72	90	VDC
Input Current			10	A
Reflected Ripple Current DC to 200 kHz			0.4	A P-P
Quiescent Current		8	12	µA
Input Over Voltage (Max)	107V continuously 143V for 1 second			
Input Filter	Internal Capacitor			

Input Parameters - 102V				
	Min	Typ	Max	Units
Input Voltage Range	80	102	126	VDC
Input Current			10	A
Reflected Ripple Current DC to 200 kHz			0.4	A P-P
Quiescent Current		8	12	µA
Input Over Voltage (Max)	150V continuously 200V for 1 second			
Input Filter	Internal Capacitor			

Output Parameters				
	Min	Typ	Max	Units
Output Voltage Accuracy		±1.0	±3.0	%
Load Regulation Io = 20% to 100%			5	%
Peak Surge Current (5 mSec)			50	A
Line Regulation for V_{IN} Change of 10%			±0.02	%
Ripple & Noise (20MHz) (3)		140	250	mV P-P
Temperature Coefficient			0.03	% / ºC
Over Voltage Protection	20V Continuously, 25V for 1sec			
Over Current Protection	Hiccup Mode			
Short Circuit Protection	Hiccup Mode			
Reverse Battery Protection	-16V for 5 minutes			

Remote On/Off	
Converter On	Enable (ON/OFF) Connected to +V_{IN}. * Activates from 3 to 6 VDC, referenced to -V_{IN} up to +V_{IN} MAX.

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General Specification				
	Min	Typ	Max	Units
Capacitive Load			10000	µF
Isolation Voltages 60 Seconds Input to Case Input to Output Output to Case	 2250 2250 500			VDC
Isolation Resistance 500VDC	10			Mohms
Isolation Capacitance		3300		pF
PWM Frequency		>50		kHz
Operating Temperature (Ambient)	-40		+85	ºC
Storage Temperature	-40		+85	ºC
Baseplate Temperature (Maximum)			+100	ºC
Humidity	0		90	%
MTBF MIL-HDBK-217F @ 25ºC Ground Benign	150			kHours
Cooling	Baseplate temperature cannot exceed specified maximum, under all operating conditions in application.			
Case Size	7.48 x 2.99 x 1.71 inches 190.0 x 76.0 x 43.5 mm			
Case Material	Metal			
Agency Approvals:	Designed to meet UL583			

Notes:
(1) All specifications are stated at 25ºC ambient and typical input line.
(2) Ingress protection to IP66, excluding connectors.
(3) Output terminated with 1µF ceramic and 15µF tantalum capacitor.
(4) Vibration to withstand 6G in x,y and z axis from 0 to 200Hz for 1 minute.
(6) Remote ON/OFF to be referenced to -Input Terminal
(7) Specification is subject to change without notice.
(8) See Green Watt Power website for RoHS statement. www.greenwattpower.com/pdf/rohs.pdf

EMC Requirments (Designed to meet)

- EMC Emmisions: EN12895, EN55022
- EMC Immunity: EN12895
- ESD: En12895 (±4KV Contact, ±15KV Air)

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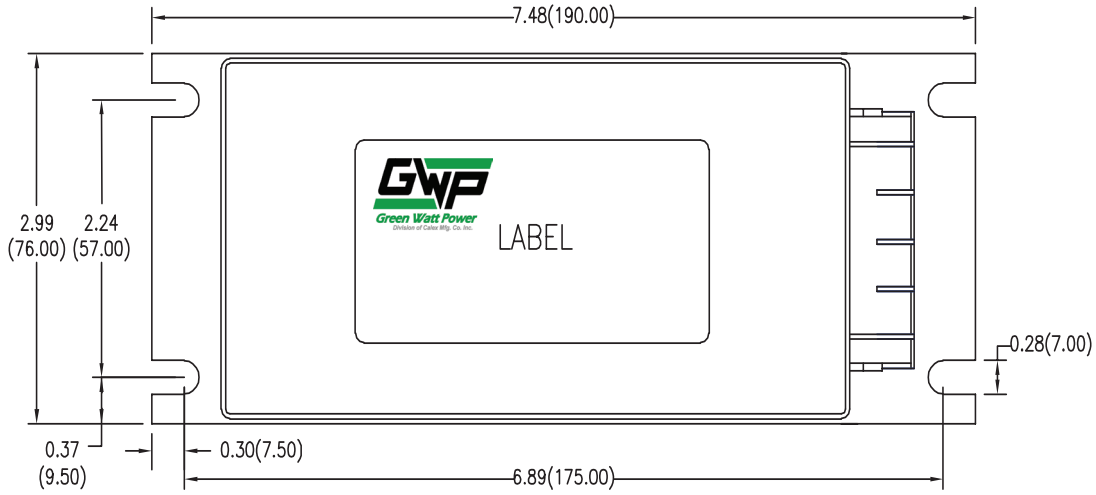
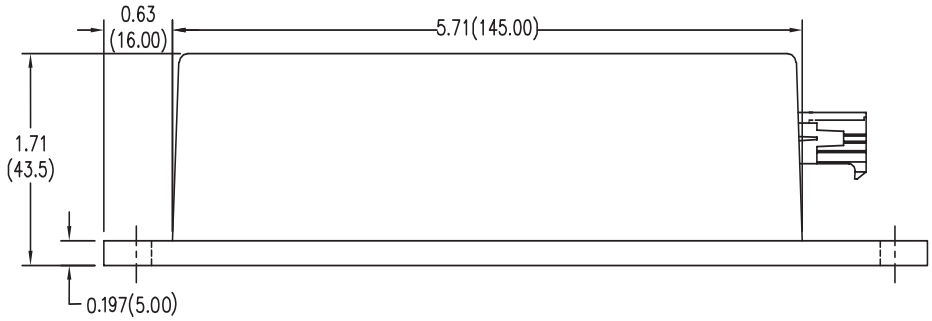
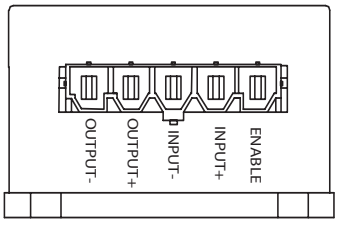
Case Specifications







All dimensions are inches (mm)
Tolerance ±0.01 (0.254) unless otherwise noted

* Notes:
1. Connector is Molex 42820 Series or equivalent. Mating connector is Molex 42816 Series or equivalent
2. Output is enabled when enable wire 3 to 6VDC or higher referenced to the -V_{IN} wire. If enable feature is not required enable wire should be connected to +V_{IN} wire.