

ESD075~12S/D SERIES

10W ~ 12W WIDE INPUT RANGE



FEATURES

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



OUTPUT SPECIFICATIONS		INPUT SPECIFICATIONS	
Voltage Setpoint Accuracy	+/-2% max	Input Voltage Range	2:1 Input Range
Temperature Coefficient	+/-0.05%/°C	Input Filter	Pi Network
Ripple & Noise(20MHz BW) ¹	100mVp-p max	Protection	Fuse Recommended
Line Regulation ²	+/-0.5% max	GENERAL SPECIFICATIONS	
Load Regulation ³	+/-0.5% max	Efficiency	78% min
Minimum Load	20% of Full Load	Isolation Voltage ⁴	1500VDC min
Short Circuit Protection	Continuous	Isolation Resistance	10 ⁹ ohms min
Short Circuit Restart	Automatic	Isolation Capacitance	2200pF max
Over Load Protection	110%~180%	Switching Frequency	400KHz Typ
Transient Response ⁵	350uS max	MTBF ⁶	>600,000 Hours
ENVIRONMENTAL SPECIFICATIONS		Weight	18.5g Typ
Operating Temperature	-40 °C to +85 °C (with derating)	Case Material	Five-Side Shielded Case
Case Temperature	+95 °C max	Case Size	31.8mm*20.3mm*12.2mm
Storage Temperature	-55 °C to +105 °C	Potting Material	Epoxy (UL94V-0)
Humidity	95% max	Conducted Emissions	EN55022 Class A
Cooling	Free-Air Convection	Radiated Emissions	EN55022 Class A
		Remote On/Off	
		-ON	3.0...12V/DC or open circuit (referenced to-Vin)
		-Off	0...1.2V/DC or short circuit pin 1 and pin 2/3
		-Off idle current	2.5mA

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 20% to 100%.

⁴ 1500VDC for 10 seconds.

⁵ 25% Step Load Change.

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			
ESD075S-CW1202.5A	9-18	2.5	3000	802	70	78	A	1000uF
ESD10S-CW1203.3A	9-18	3.3	3000	1025	70	80	A	1000uF
ESD12S-CW1205A	9-18	5	2400	1190	70	84	A	1000uF
ESD12S-CW1212A	9-18	12	1000	1204	70	83	A	220uF
ESD12S-CW1215A	9-18	15	800	1204	70	83	A	220uF
ESD12D-CW1205A	9-18	+/-5	+/-1200	1235	70	81	A	+/-670uF
ESD12D-CW1212A	9-18	+/-12	+/-500	1190	70	84	A	+/-100uF
ESD12D-CW1215A	9-18	+/-15	+/-400	1204	70	83	A	+/-47uF
ESD075S-CW2402.5A	18-36	2.5	3000	401	35	78	A	1000uF
ESD10S-CW2403.3A	18-36	3.3	3000	513	35	80	A	1000uF
ESD12S-CW2405A	18-36	5	2400	602	35	83	A	1000uF
ESD12S-CW2412A	18-36	12	1000	602	35	83	A	220uF
ESD12S-CW2415A	18-36	15	800	590	35	85	A	220uF
ESD12D-CW2405A	18-36	+/-5	+/-1200	618	35	81	A	+/-670uF
ESD12D-CW2412A	18-36	+/-12	+/-500	595	35	84	A	+/-100uF
ESD12D-CW2415A	18-36	+/-15	+/-400	595	35	84	A	+/-47uF
ESD075S-CW4802.5A	36-75	2.5	3000	201	25	78	A	1000uF
ESD10S-CW4803.3A	36-75	3.3	3000	252	25	83	A	1000uF
ESD12S-CW4805A	36-75	5	2400	298	25	84	A	1000uF
ESD12S-CW4812A	36-75	12	1000	301	25	83	A	220uF
ESD12S-CW4815A	36-75	15	800	294	25	85	A	220uF
ESD12D-CW4805A	36-75	+/-5	+/-1200	309	25	81	A	+/-670uF
ESD12D-CW4812A	36-75	+/-12	+/-500	298	25	84	A	+/-100uF
ESD12D-CW4815A	36-75	+/-15	+/-400	298	25	84	A	+/-47uF

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

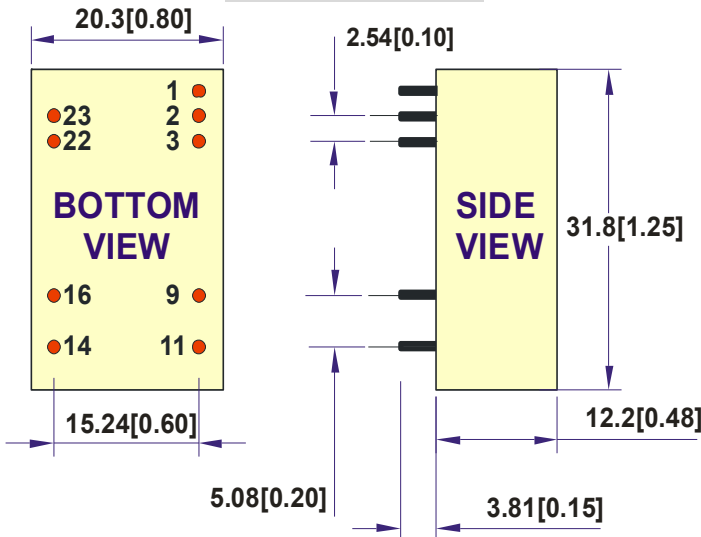
⁷ CW*_*****A12M AND CW*_*****A10M (Isolation For 1500 VDC)

⁸ NOMINAL INPUT VOLTAGE.

⁹ NOMINAL INPUT VOLTAGE, FULL LOAD.

MECHANICAL DIMENSIONS

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

NOTE: Pin Size is Tolerance $0.6\Phi \pm 0.05\text{mm}$
 All Dimensions In mm(Inches)
 Tolerance .X or .XX= $\pm 0.5\text{mm}$

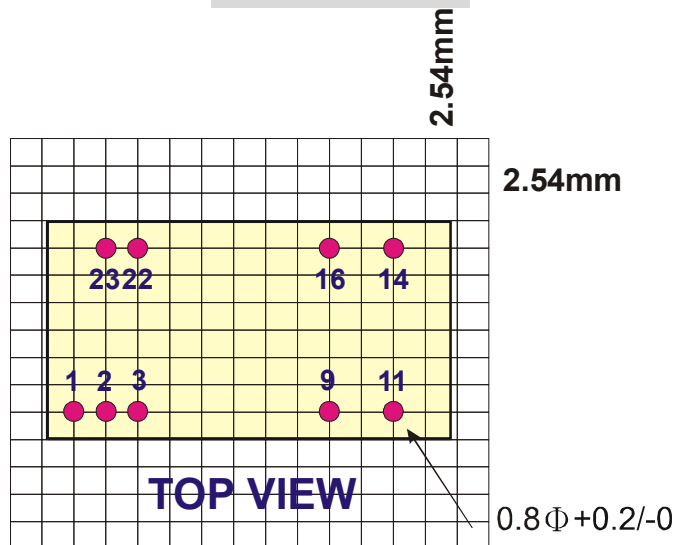
All dimensions are in mm[inches]

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
OFF	<+0.8VDC or Jumper to PIN2&PIN3		Collector TTL

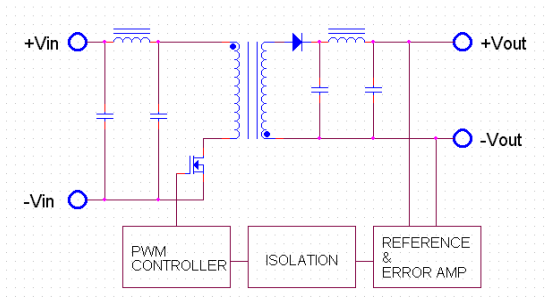
RECOMMENDED FOOTPRINT DETAILS

PACKAGE "A"

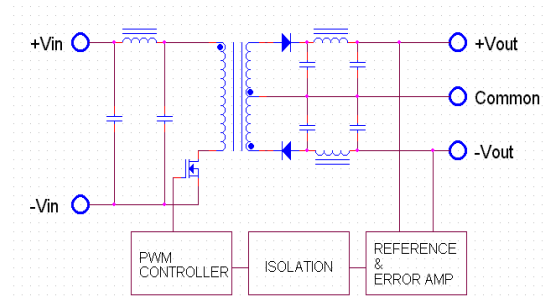


● SIMPLIFIED SCHEMATIC

SINGLE OUTPUT



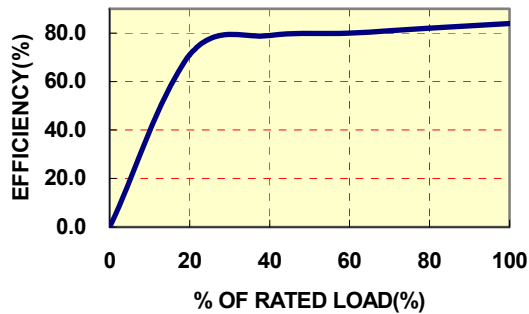
DUAL OUTPUT



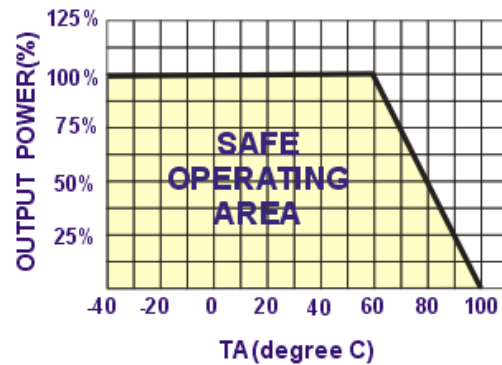
● TYPICAL PERFORMANCE CURVES

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

OUTPUT LOAD VS EFFICIENCY



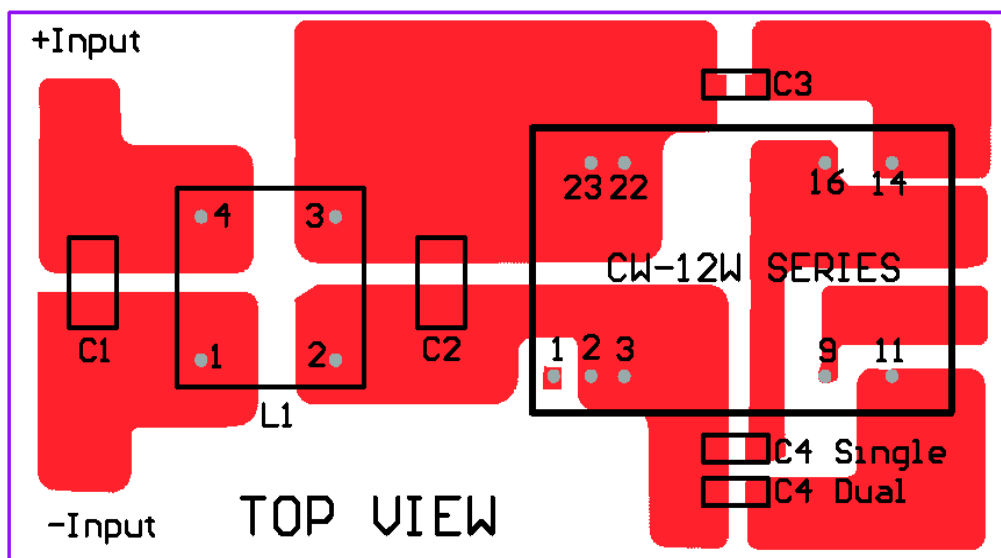
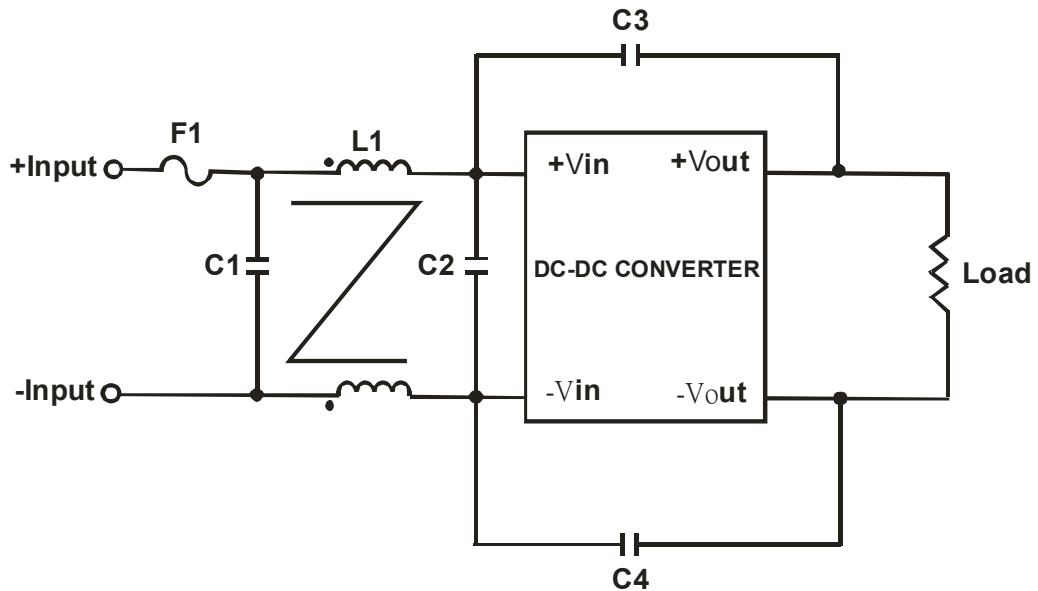
TEMPERATURE DERATING



● 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
ESD12-12W ESD12-CW12**	3.3uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
ESD12-12W ESD12-CW12**	4.7uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
ESD12-12W ESD12-CW12**	2.2uF/100V 1812 MLCC	2.2uF/100V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke



Recommended EN55022 Class B Filter Circuit Layout

● INPUT FUSE SELECTION GUIDE

9-18V INPUT VOLTAGE(VDC)	18-36V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
3000mA Slow-Blow Type	1200mA Slow-Blow Type	600mA Slow-Blow Type

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

**ESD075/12S/D-CW 7.5W ~ 12W SERIES APPLICATION NOTES:
EXTERNAL CAPACITANCE REQUIREMENTS:**

No external capacitance is required for operation of the CW 7.5W ~ 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.

FOR MORE INFORMATION CALL:

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