

ESD15S-DCW SERIES

15W WIDE INPUT RANGE

E-STAR

FEATURES

- 15 WATTS OUTPUT POWER
- ULTRA COMPACT SIZE:1.0"x1.0"x0.4"
- INDUSTRY STANDARD PACKAGE
- 9V-18V,18V-36V,36V-75V WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- 3 YEARS WARRANTY



OUTPUT SPECIFICATIONS

Voltage Set-point Accuracy	+/-2% max
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 ⁵	500uS max

ENVIRONMENTAL SPECIFICATIONS

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

INPUT SPECIFICATIONS

Input Voltage Range	2:1
Input Filter	Pi Network
Remote ON/OFF Control	Table 1
Protection	Fuse Recommended

GENERAL SPECIFICATIONS

Efficiency	88% typical
Isolation Voltage ⁴	1500 VDC min
Isolation Resistance	10 ⁹ ohms min
Isolation Capacitance	2500pF max
Switching Frequency	400KHz typ.
Weight	15g typ.
Case Material	Six-Side Shielded Case
Case Size	25.4mm*25.4mm*9.9mm
Potting Material	Epoxy(UL94-V0)
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A
Safety Standard:	UL-60950-1 (designed to meet)
MTBF ⁶	>400000 Hours

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 For 10 seconds.

⁵ 25% Step Load Change.

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

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2011/06/21

● **SELECTION GUIDE**
2:1 15W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁷ CURRENT (mA)		EFF (%) ⁸	ISOLATION (VDC)	CAPACITOR LOAD MAX
				FULL LOAD	NO LOAD			
ESD15S-DCW1203.3	9-18	3.3	4000	1341	90	82	1500	1000uF
ESD15S-DCW1205	9-18	5	3000	1453	80	86	1500	1000uF
ESD15S-DCW1212	9-18	12	1250	1437	30	87	1500	470uF
ESD15S-DCW1215	9-18	15	1000	1420	30	88	1500	330uF
ESD15S-DCW2403.3	18-36	3.3	4000	671	70	82	1500	1000uF
ESD15S-DCW2405	18-36	5	3000	718	60	87	1500	1000uF
ESD15S-DCW2412	18-36	12	1250	718	30	87	1500	470uF
ESD15S-DCW2415	18-36	15	1000	710	30	88	1500	330uF
ESD15S-DCW4803.3	36-75	3.3	4000	336	45	82	1500	1000uF
ESD15S-DCW4805	36-75	5	3000	363	40	86	1500	1000uF
ESD15S-DCW4812	36-75	12	1250	363	30	86	1500	470uF
ESD15S-DCW4815	36-75	15	1000	359	30	87	1500	330uF

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

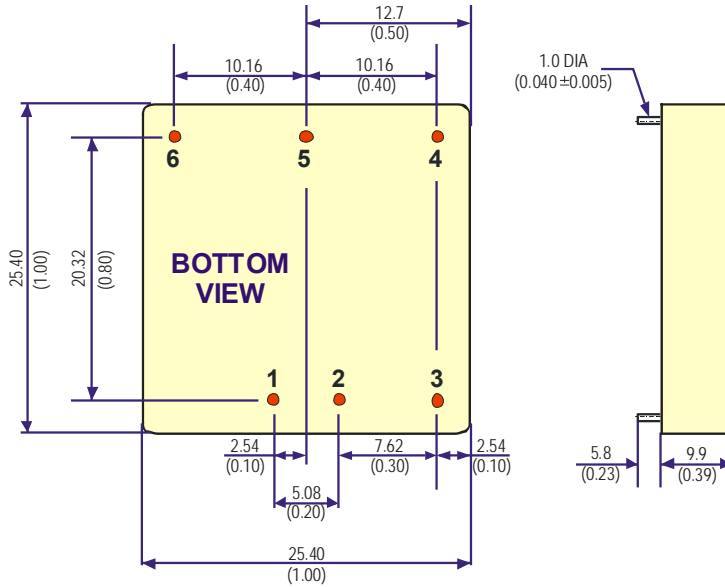
● **PART NUMBERS STRUCTURE**

Module Name	Difference
ESD15S-DCWx1x2	<p>ESD15S=Series Name</p> <p>W=Wide Input Range</p> <p>x1=Input Voltage(9~18V ; 18~36V ; 36~75V)</p> <p>x2=Output Voltage(03.3 ; 05 ; 12 ; 15)</p>

⁷ NOMINAL INPUT VOLTAGE.

⁸ NOMINAL INPUT VOLTAGE, FULL LOAD.

MECHANICAL DIMENSIONS



All dimensions in mm(inches).

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

NOTE:

Pin Size is Tolerance $1.0\Phi \pm 0.10\text{mm}$

All Dimensions In mm(Inches)

Tolerance .X or .XX= $\pm 0.8\text{mm}$

RECOMMENDED FOOTPRINT DETAILS

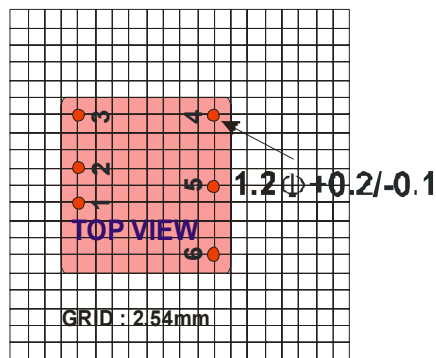
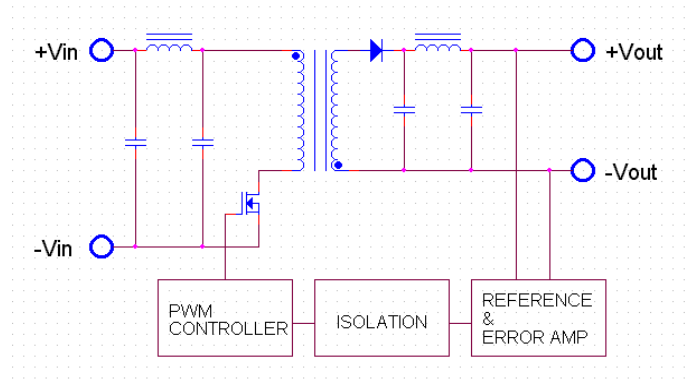


Table1 (Remote On/Off Control)

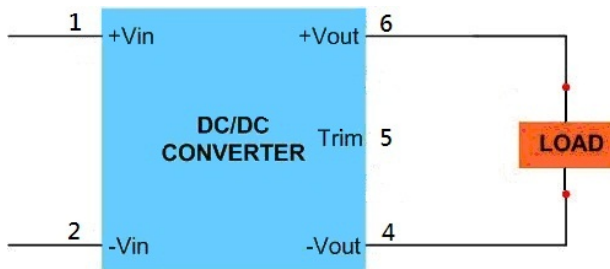
Remote On/Off Control			
Control Input	PIN3	Control Common	PIN2
Control Voltage		Converter Shutdown Idle Current	10mA
ON	>+2.5VDC or Open Circuit	Logic Compatibility	CMOS or Open
OFF	<+0.5VDC or Jumper to PIN2		Collector TTL

● SIMPLIFIED SCHEMATIC

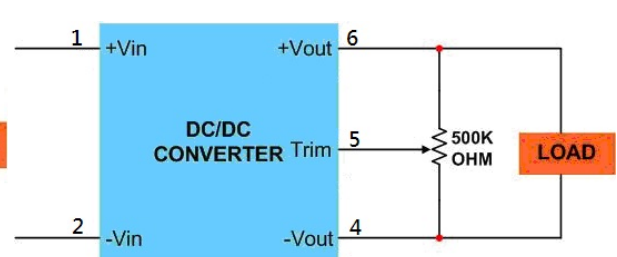


● TYPICAL APPLICATIONS

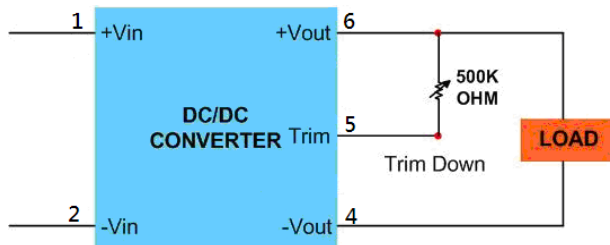
FIXED VOLTAGE OUTPUT



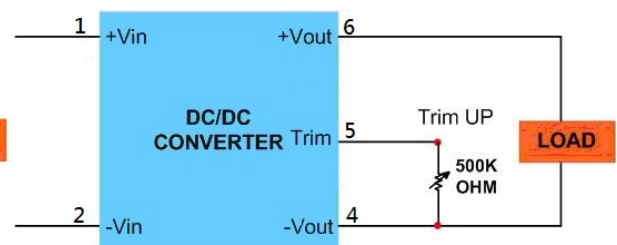
TRIM CONNECTIONS USING A TRIMPOT



FIXED-VALUE TRIM DOWN RESISTOR



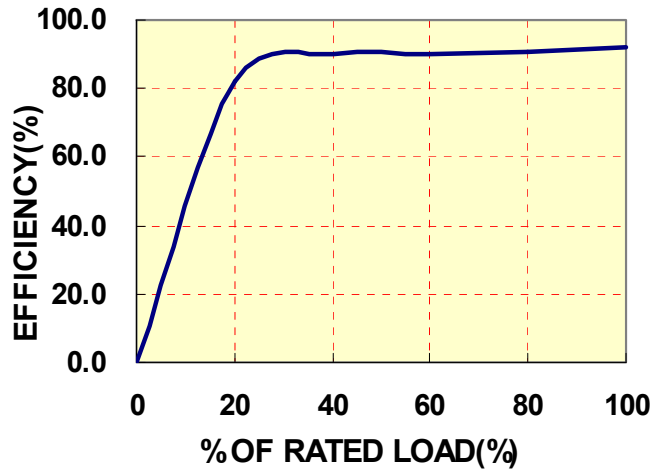
FIXED-VALUE TRIM UP RESISTOR



● TYPICAL PERFORMANCE CURVES

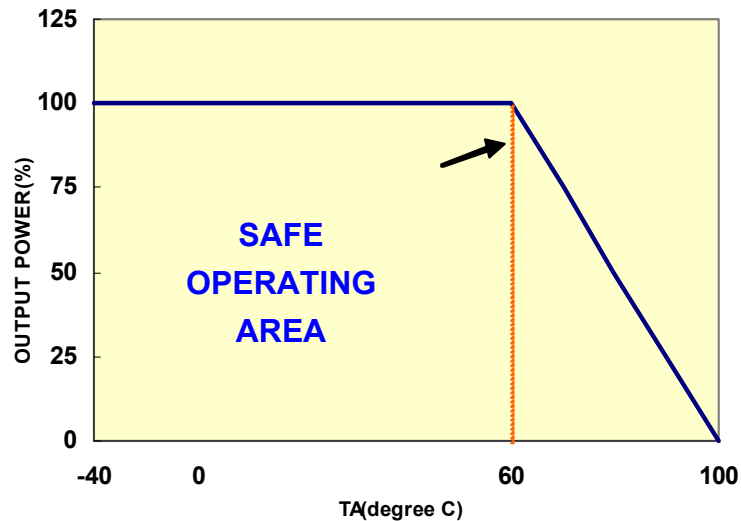
Specifications typical at $T_a=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise specified.

OUTPUT LOAD VS EFFICIENCY



● DERATING CURVE

TEMPERATURE DERATING



● INPUT FUSE SELECTION GUIDE

9-18V INPUT VOLTAGE(VDC)	18-36V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
4000 mA Slow-Blow Type	2000 mA Slow-Blow Type	1000 mA Slow-Blow Type

The diagram shows a DC-DC Converter block with four terminals: +Vin, -Vin, +Vout, and -Vout. A fuse is connected to the +Vin terminal. The input side is labeled 'INPUT' and the output side is labeled 'OUTPUT'.

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

ESD15S-DCW 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.

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 wiring. If the TRIM function is not required the pin may be left floating.

FOR MORE INFORMATION CALL:

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Home Page

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