

LR SERIES

4.5W REGULATED

DANUBE

FEATURES

- DUAL IN LINE PACKAGE
- UP TO 4.5W REGULATED OUTPUT POWER
- NO EXTERNAL COMPONENTS REQUIRED
- 100% BURNED IN
- HIGH EFFICIENCY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE



OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy	+/-3% max
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) ¹	100mVp-p max
Line Regulation ²	+/-1% max
Load Regulation ³	+/-1% max
Minimum Load	10% of Full Load
Short Circuit Protection	Current Limit Protection
Short Circuit Restart	Automatic
Transient Response ⁵	200uS max

INPUT SPECIFICATIONS

Input Voltage Range	+/-10% max
Input Filter	Pi Network
Protection	Fuse Recommended

GENERAL SPECIFICATIONS

Efficiency	58% min
Isolation Voltage ⁴	1500VDC min
Isolation Resistance	10 ⁹ ohms min
Isolation Capacitance	120pF max
Switching Frequency	50 KHz min
MTBF ⁶	>750,000 Hours
Weight	31.2g Typ
Case Material	Five-Sided Shield Case
Case Size	50.8mm*25.4mm*11.2mm
Potting Material	Epoxy(UL94-V0)
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-25°C to +71°C
Storage Temperature	-55°C to +125°C
Humidity	95% max
Cooling	Free-Air Convection

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 @25°C, Ground Benign.

● **SELECTION GUIDE**
4.5W OUTPUT

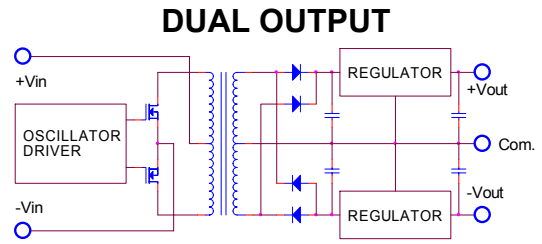
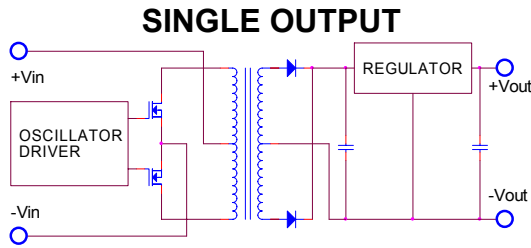
MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁷		EFF (%) ⁸	ISOLATION (VDC)
				CURRENT(mA)			
				FULL LOAD	NO LOAD		
LRS-0505	4.5-5.5	5	800	1269	100	63	1500
LRS-0512	4.5-5.5	12	375	1384	100	65	1500
LRS-0515	4.5-5.5	15	300	1406	100	64	1500
LRD-0505	4.5-5.5	+/-5	+/-400	1290	100	62	1500
LRD-0512	4.5-5.5	+/-12	+/-188	1384	100	65	1500
LRD-0515	4.5-5.5	+/-15	+/-150	1406	100	64	1500
LRS-1205	10.8-13.2	5	800	546	50	61	1500
LRS-1212	10.8-13.2	12	375	568	50	66	1500
LRS-1215	10.8-13.2	15	300	543	50	69	1500
LRD-1205	10.8-13.2	+/-5	+/-400	555	50	60	1500
LRD-1212	10.8-13.2	+/-12	+/-188	585	50	64	1500
LRD-1215	10.8-13.2	+/-15	+/-150	543	50	69	1500
LRS-2405	21.6-26.4	5	800	264	30	63	1500
LRS-2412	21.6-26.4	12	375	271	30	69	1500
LRS-2415	21.6-26.4	15	300	271	30	69	1500
LRD-2405	21.6-26.4	+/-5	+/-400	277	30	60	1500
LRD-2412	21.6-26.4	+/-12	+/-188	271	30	69	1500
LRD-2415	21.6-26.4	+/-15	+/-150	271	30	69	1500

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

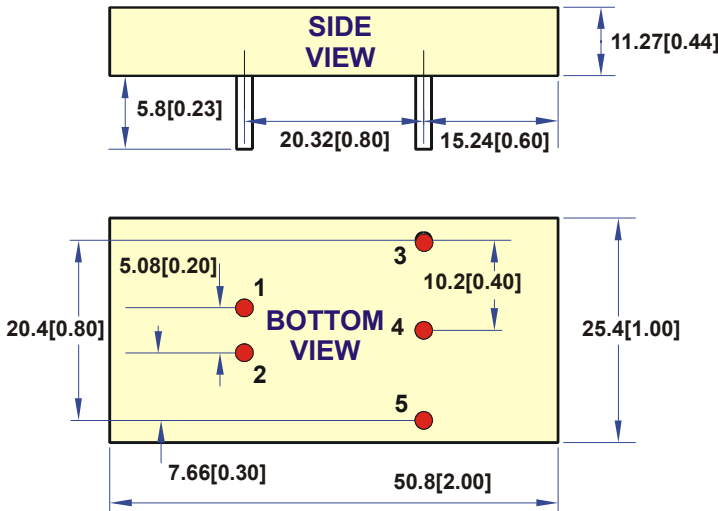
⁷ NOMINAL INPUT VOLTAGE.

⁸ NOMINAL INPUT VOLTAGE, FULL LOAD.

● SIMPLIFIED SCHEMATIC



● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



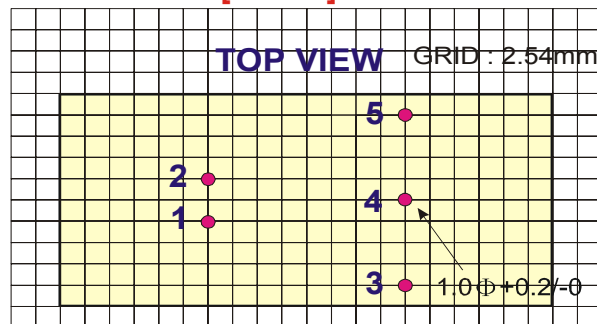
PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	NO PIN	Common
5	-Vout	-Vout

NOTE: Pin Size is Tolerance $0.8\Phi \pm 0.10\text{mm}$

All Dimensions In mm(Inches)

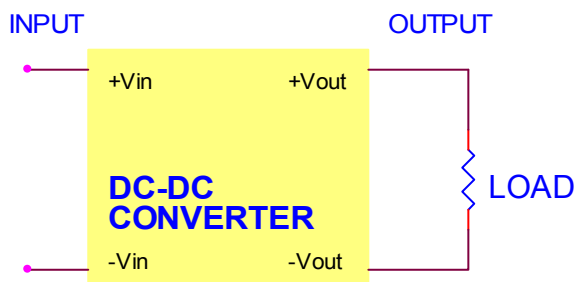
Tolerance .X or .XX = $\pm 0.80\text{mm}$

All dimensions are in millimeters[inches]

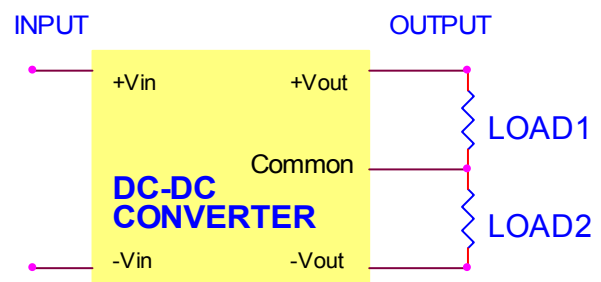


● TYPICAL APPLICATIONS

SINGLE OUTPUT



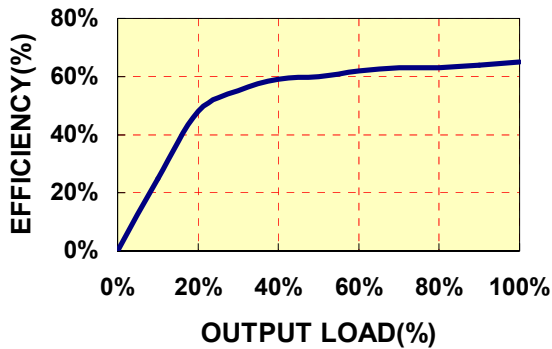
DUAL OUTPUT



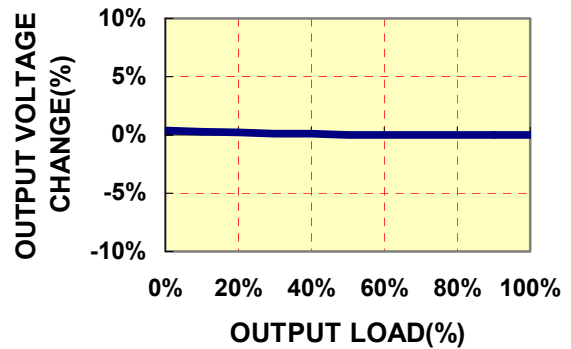
● TYPICAL PERFORMANCE CURVES

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

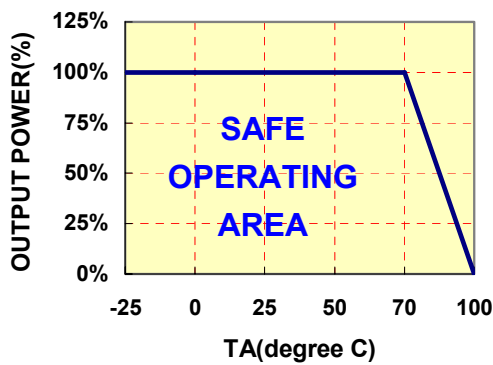
OUTPUT LOAD VS EFFICIENCY



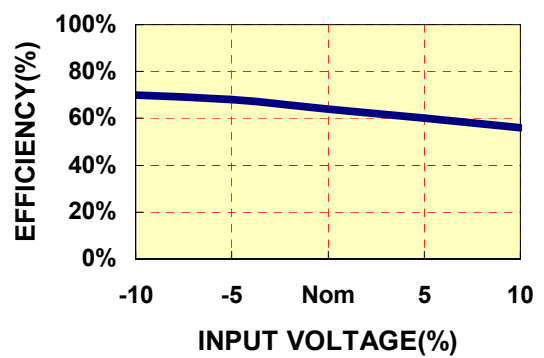
OUTPUT LOAD VS OUTPUT VOLTAGE



TEMPERATURE DERATING



INPUT VOLTAGE VS EFFICIENCY



● INPUT FUSE SELECTION GUIDE

4.5-5.5V INPUT VOLTAGE(VDC)	10.8-13.2V INPUT VOLTAGE(VDC)	21.6-26.4V INPUT VOLTAGE(VDC)
2100mA Slow-Blow Type	900mA Slow-Blow Type	500mA Slow-Blow Type

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

LR SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the LR 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.

Additional output capacitance may be added for increased filtering, but should not exceed 220uF.

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

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.

FOR MORE INFORMATION CALL:

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Home Page

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