

SERIES LR

DC-DC CONVERTERS

Wide Input Range/up to 3.33:1
Isolated Regulated up to 5 Watt
DC-DC Converters
Fully Regulated
All Units Shielded

This series of high efficiency, wide input range, encapsulated regulators come in 90 different models. These units feature a 500 VOLT DC input to output isolation in both single and dual output models. The LR Series will operate over a temperature range of -25° C to +70° C with no heat sink or electrical derating. These units are excellent for applications where input voltage varies dramatically, yet a high efficiency and output voltage regulation must be maintained.

TYPICAL CHARACTERISTICS:

- **Test conditions:** 25° C ambient.
- **Operating temperature:** -25° C to +70° C ambient.
- **Output voltage tolerance:** ±1% at typical input voltage
- **Output voltage temperature coefficient:** 0.02%/°C
- **Storage temperature:** -55° C to +125° C
- **Short circuit protection:** Temporary
- **Operating frequency:** 40 KHz, typ.

OPTIONS AVAILABLE

- Per Mil. Std. 883
- Expanded operating temp. (-55° C to +85° C)
- Stabilization Bake (125° C ambient)
- Temperature Cycle (-55° C to +125° C)
- Hi Temp, full power burn in (100% power, 125° C case temp)

FEATURES

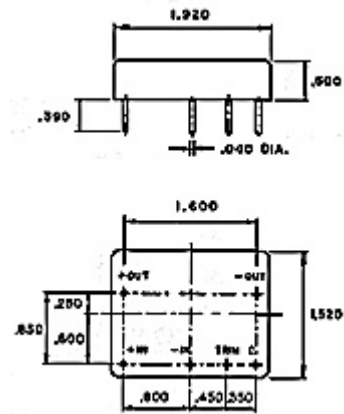
- Voltage regulation over input range of

Unit	Low	High
LRE	5V	15V
LRF	8V	24V
LRA	18V	36V
LRB	36V	60V
LRC	18V	60V

- Encapsulated semiconductor, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation = Typical values
- 5-15V DC = $\pm 1.5\%$
8-24V DC = $\pm 1.5\%$
18-36V DC = $\pm 1.0\%$
36-60V DC = $\pm 1.0\%$
18-60V DC = $\pm 1.5\%$
- High efficiency - up to 80%
- Will operate over a temperature range of -25°C to $+70^{\circ}\text{C}$ with no heat sink or electrical derating
- 6 sided shielding
- Isolation - 100 megohms at 500 volts DC
- External output trimming pin standard, $\pm 5\%$
- Single and dual isolated outputs
- Each unit is supplied with an external control pin. This "C" pin, when connected to the negative (-) input, will disable the unit, allowing for remote shutdown.

SERIES LR - SINGLE OUTPUT											
PICO Part Number	Input Volt. Range	Output Volt. DC	Max. Load Current (mA)	Max. Output Power (watts)	Eff. @ Full Load Typical (%)*	Input Current Full Load Typical (mA)*	Output Volt. Ripple@ Full LD. 1-1 MHz BW mv p-p	Output Volt. Tolerance (± %)*	** V LD. Reg. 25%-100% Load (± %)*	Line Regulation (± %)*	Price (US \$)

Series LR - Single Output

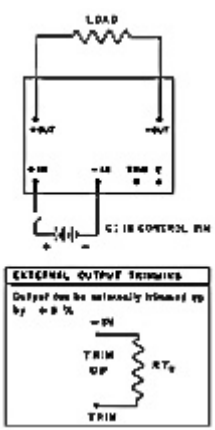


Typical Weight: 65 grams

Larger Size Drawing ^[1]

Use 50 K Ohm trim pot rated 1/4 Watt between trim pin and negative input. Trim down to raise output voltage

to a maximum of 5%. Do not go beyond 5%. Reducing the resistance value further could damage the module.



Larger Size Schematic ^[2]

SERIES LR - DUAL OUTPUT											
PICO Part Number	Input Volt. Range	Output Volt. DC Per Output	Max. Load Current (mA) Per Output	Max. Output Power (watts) Per Output	Eff. @ Full Load Typical (%)*	Input Current Full Load Typical (mA)*	Output Volt. Ripple@ Full LD. 1-1 MHz BW mv p-p	Output Volt. Tolerance (± %)*	** V LD. Reg. 25%-100% Load (± %)*	Line Regulation (± %)*	Price (US \$)
LRE5D	5-15	5	300	1.5	78	385	150	0.75	1.50	2.00	189.34
LRE9D	5-15	9	222	2.0	78	515	125	0.50	1.25	1.50	189.34
LRE12D	5-15	12	167	2.0	79	505	125	0.50	1.25	1.25	189.34
LRE15D	5-15	15	134	2.0	79	505	125	0.50	1.25	1.25	189.34
LRE24D	5-15	24	84	2.0	80	500	125	0.50	1.00	1.25	189.34
LRE28D	5-15	28	72	2.0	80	500	125	0.50	1.00	1.00	189.34
LRE48D	5-15	48	42	2.0	80	500	175	0.50	1.00	1.00	203.50
LRF5D	8-24	5	500	2.5	78	400	150	0.75	1.50	2.00	189.34
LRF9D	8-24	9	278	2.5	78	400	125	0.50	1.25	1.50	189.34
LRF12D	8-24	12	208	2.5	79	395	125	0.50	1.25	1.25	189.34
LRF15D	8-24	15	167	2.5	79	395	125	0.50	1.25	1.25	189.34
LRF24D	8-24	24	104	2.5	80	390	125	0.50	1.00	1.25	189.34
LRF28D	8-24	28	89	2.5	80	390	125	0.50	1.00	1.00	189.34
LRF48D	8-24	48	52	2.5	80	390	175	0.50	1.00	1.00	203.50
LRA5D	18-36	5	500	2.5	76	245	100	0.75	2.00	0.75	189.34
LRA9D	18-36	9	278	2.5	76	245	100	0.50	2.00	0.50	189.34
LRA12D	18-36	12	208	2.5	77	240	100	0.50	2.00	0.50	189.34
LRA15D	18-36	15	167	2.5	79	235	100	0.50	1.50	0.50	189.34
LRA24D	18-36	24	104	2.5	80	230	100	0.50	1.50	0.25	189.34
LRA28D	18-36	28	89	2.5	80	230	100	0.50	1.50	0.25	189.34
LRA48D	18-36	48	52	2.5	80	230	150	0.50	1.00	0.25	203.50
LRB5D	36-60	5	500	2.5	74	140	100	0.75	1.25	0.50	217.40
LRB9D	36-60	9	278	2.5	74	140	100	0.50	1.00	0.25	217.40
LRB12D	36-60	12	208	2.5	74	140	100	0.50	1.00	0.25	217.40
LRB15D	36-60	15	167	2.5	76	135	100	0.50	1.00	0.25	217.40
LRB24D	36-60	24	104	2.5	76	135	100	0.50	0.75	0.25	217.40
LRB28D	36-60	28	89	2.5	76	135	100	0.50	0.75	0.25	217.40
LRB48D	36-60	48	52	2.5	76	135	150	0.50	0.75	0.25	233.65

