

Series KR

DC to DC Converters

Single and Dual Output

Wide Input Range up to 3.33:1
Isolated Regulated up to 20 Watt DC to DC Converters
Full Regulated All Units Shielded

This series of high efficiency, wide input range, encapsulated regulators come in 51 different models. These units feature a 500 VOLT DC input to output isolation in both single and dual output models. The KR 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.

FEATURES

- Single and dual isolated outputs
- Voltage regulation over input range of

Unit	Low	High
KRA	18V	36V
KRB	36V	60V
KRC	18V	60V

- Encapsulated semiconductors, conservatively rated for maximum reliability.
- Load regulation (see table for typical variation at different loads)
- Line regulation = Typical values
18-36V DC = $\pm 1.5\%$
36-60V DC = $\pm 1.5\%$
18-60V DC = $\pm 3.0\%$
- High efficiency - up to 83%
- Will operate over a temperature range of -25° C to +70° C with no heat sink or electrical derating
- 6 sided shielding
- Isolation - 100 megohms at 500 volts DC
- External output trimming pin standard +5%
- 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.

TYPICAL CHARACTERISTICS:

Test conditions: 25° C ambient

Operating temperature: -25° C to +70° C ambient

Output voltage tolerance: $\pm 2.5\%$ at typical input voltage

Output voltage temperature coefficient: 0.02% / ° C

Storage temperature: -55° C to +125° C

Short circuit protection: Temporary

Operating frequency: 40Khtz, typical

OPTIONS AVAILABLE

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

SERIES KR - SINGLE OUTPUT

Pico Part Number	Input Voltage Range	Output Voltage DC	Max. Load Current mA	Max. Output Power (watts)	EFF.@ Full Load Typical (%)*	Input Current Full Load Typical (mA)*	Out Volt Ripple @ Full LD. 1-1MHz BW mv p-p	Out Volt Tolerance (± %)*	** VLD. Reg. 25%-100% Load (± %)*	Line Regulation* (± %)	Price (US \$)
KRA3.3S	18-36	3.3	6061	20	78	950	60	1.00	3.00	2.50	242.64
KRA5S	18-36	5	4000	20	78	950	60	0.75	2.50	1.50	242.64
KRA5.2S	18-36	5.2	3846	20	78	950	60	0.75	2.50	1.50	242.64
KRA9S	18-36	9	2222	20	80	925	60	0.50	1.25	0.75	242.64
KRA12S	18-36	12	1667	20	78	950	60	0.50	1.00	0.50	242.64
KRA15S	18-36	15	1333	20	78	950	60	0.50	1.00	0.50	242.64
KRA24S	18-36	24	833	20	81	915	60	0.50	0.50	0.25	242.64
KRA28S	18-36	28	714	20	82	905	60	0.50	0.50	0.25	242.64
KRA48S	18-36	48	417	20	83	890	80	0.50	0.50	0.25	242.64
KRA100S	18-36	100	200	20	83	890	100	0.50	0.50	0.25	325.98
KRB3.3S	36-60	3.3	6061	20	78	534	60	1.00	3.00	2.50	283.32
KRB5S	36-60	5	4000	20	78	535	60	0.75	2.50	1.00	283.32
KRB5.2AS	36-60	5.2	3846	20	78	535	60	0.75	2.50	1.00	283.32
KRB9S	36-60	9	2222	20	80	520	60	0.50	1.25	0.50	283.32
KRB12S	36-60	12	1667	20	78	535	60	0.50	1.00	0.50	283.32
KRB15S	36-60	15	1333	20	78	535	60	0.50	1.00	0.50	283.32
KRB24S	36-60	24	833	20	81	515	60	0.50	0.50	0.25	283.32
KRB28S	36-60	28	714	20	82	510	60	0.50	0.50	0.25	283.32
KRB48S	36-60	48	417	20	83	500	80	0.50	0.50	0.25	283.63
KRB100S	36-60	100	200	20	83	500	100	0.50	0.50	0.25	380.63

KRC3.3S	18-60	3.3	6061	20	78	657	60	1.00	3.0	2.50	302.95
KRC5S	18-60	5	4000	20	78	660	60	0.75	2.50	2.00	302.95
KRC5.2S	18-60	5.2	3846	20	78	660	60	0.75	2.50	2.00	302.95
KRC9S	18-60	9	2222	20	80	640	60	0.50	1.25	1.00	302.95
KRC12S	18-60	12	1667	20	78	660	60	0.50	1.00	0.75	302.95
KRC15S	18-60	15	1333	20	78	660	60	0.50	1.00	0.75	302.95
KRC24S	18-60	24	833	20	81	635	60	0.50	0.50	0.50	302.95
KRC28S	18-60	28	714	20	82	625	60	0.50	0.50	0.50	302.95
KRC48S	18-60	48	417	20	83	615	80	0.50	0.50	0.50	302.95
KRC100S	18-60	100	200	20	83	615	100	0.50	0.50	0.50	406.44
* Measurements taken with input voltage set at mid value											
** 10% minimum load require											

SERIES KR - DUAL OUTPUT											
Pico Part Number	Input Voltage Range	Output Voltage 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)*	Out Volt Ripple @ Full LD. 1-1MHz BW mv p-p	Out Volt Tolerance (± %)*	** VLD. Reg. 25%-100% Load (± %)*	Line Regulation (± %)	Price (US \$)
KRA5D	18-36	5	2000	10	78	950	60	0.75	2.50	1.50	277.71
KRA9D	18-36	9	1111	10	80	925	60	0.50	1.25	0.75	277.71
KRA12D	18-36	12	833	10	78	950	60	0.50	1.00	0.50	277.71
KRA15D	18-36	15	667	10	78	950	60	0.50	1.00	0.50	277.71
KRA24D	18-36	24	417	10	81	915	60	0.50	0.50	0.25	277.71
KRA28D	18-36	28	357	10	82	905	60	0.50	0.50	0.25	277.71
KRA48D	18-36	48	208	10	83	890	80	0.50	0.50	0.25	298.47
KRB5D	36-60	5	2000	10	78	535	60	0.75	2.50	1.00	318.38
KRB9D	36-60	9	1111	10	80	520	60	0.50	1.25	0.50	318.38
KRB12D	36-60	12	833	10	78	535	60	0.50	1.00	0.50	318.38
KRB15D	36-60	15	667	10	78	535	60	0.50	1.00	0.50	318.39
KRB24D	36-60	24	417	10	81	515	60	0.50	0.50	0.25	318.38
KRB28D	36-60	28	357	10	82	510	60	0.50	0.50	0.25	318.38
KRB48D	36-60	48	208	10	83	500	80	0.50	0.50	0.25	342.18

KRC5D	18-60	5	2000	10	78	660	60	0.75	2.50	2.00	338.01
KRC9D	18-60	9	1111	10	80	640	60	0.50	1.25	1.00	338.01
KRC12D	18-60	12	833	10	78	660	60	0.50	1.00	0.75	338.01
KRC15D	18-60	15	667	10	78	660	60	0.50	1.00	0.75	338.01
KRC24D	18-60	24	417	10	81	635	60	0.50	0.50	0.50	338.01
KRC28D	18-60	28	357	10	82	625	60	0.50	0.50	0.50	338.01
KRC48D	18-60	48	208	10	83	615	80	0.50	0.50	0.50	363.29

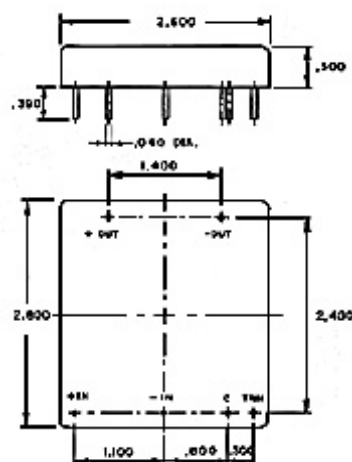
* Measurements taken with input voltage set at mid value
** 10% minimum load require

Series KR Single Output

Series KR Single Output

C: is control pin

NOTE: all radii typ. 7/64"

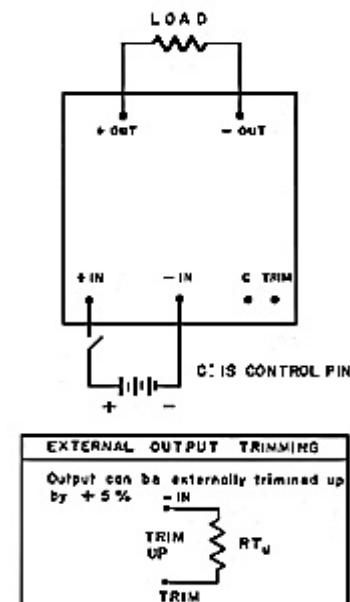


bottom view

[Larger Size Drawing](#)

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 unit.

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.



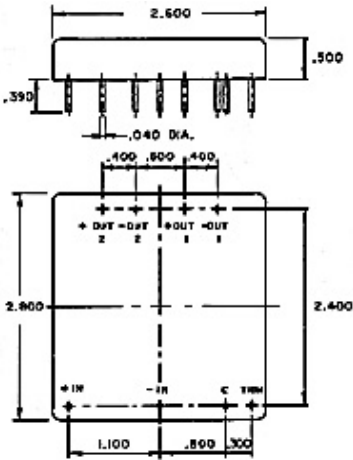
[Larger Size Schematic](#)

Typical Weight: 165 Grams

Series KR Dual Output

Series KR Dual Output

C: is control pin
NOTE: all radii typ. 7/64"

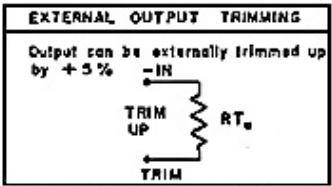
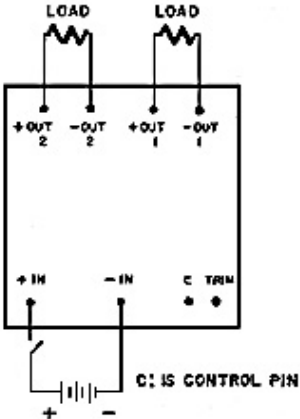


bottom view

[Larger Size Drawing](#)

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.

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.



[Larger Size Schematic](#)

Typical Weight: 165 Grams

For immediate engineering assistance or to place an order:

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