

SERIES NR**Isolated Regulated up to 30 Watt
DC-DC Converters****Wide Input Range/up to 72V DC****30 Triple Output Models****Highly Regulated****No Heat Sink Required****No Heat Sink
or Electrical
Derating Required****Low Profile
Less Than
0.5" Height**

- 30 Triple Output Models
- 72 V Input Voltage
- 0.2% Line Regulation
- Continuous Short Circuit Protection

**SERIES NR—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. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 10%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
NRA5S	18-36	5	4000	20	78	1068	50	0.5	0.3	0.2	260.00
NRA9S	18-36	9	2777	25	80	1302	50	0.5	0.2	0.2	260.00
NRA12S	18-36	12	2083	25	81	1286	50	0.5	0.2	0.2	260.00
NRA15S	18-36	15	1666	25	83	1255	50	0.5	0.2	0.2	260.00
NRA24S	18-36	24	1042	25	84	1240	50	0.5	0.2	0.2	260.00
NRA28S	18-36	28	893	25	85	1225	50	0.5	0.2	0.2	260.00
NRB5S	36-72	5	4400	22	78	588	50	0.5	0.3	0.2	289.00
NRB9S	36-72	9	2777	25	83	628	50	0.5	0.2	0.2	289.00
NRB12S	36-72	12	2083	25	83	628	50	0.5	0.2	0.2	289.00
NRB15S	36-72	15	2000	30	85	735	50	0.5	0.2	0.2	289.00
NRB24S	36-72	24	1250	30	86	727	50	0.5	0.2	0.2	289.00
NRB28S	36-72	28	1071	30	87	718	50	0.5	0.2	0.2	289.00

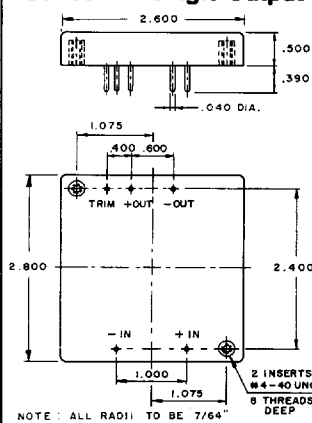
‡ 10% minimum load required.

SERIES NR—DUAL OUTPUT

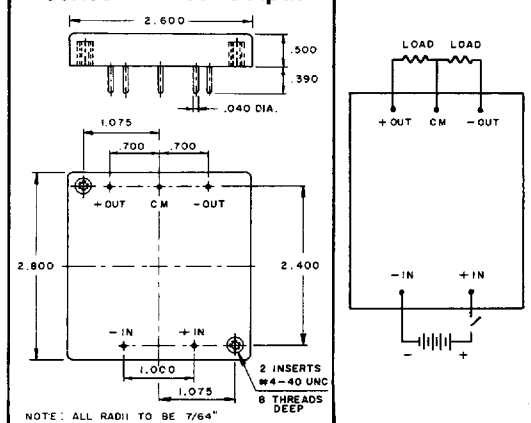
PICO PART NUMBER	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUT VOLT TOLERANCE (±%)	V LD. REG. 25%-100% LOAD (±%)	LINE REGULATION (±%)	PRICE 1-24
NRA5D	18-36	± 5	2000	10.0	78	1068	50	0.5	0.3	0.2	310.00
NRA9D	18-36	± 9	1390	12.5	80	1302	50	0.5	0.2	0.2	310.00
NRA12D	18-36	± 12	1042	12.5	81	1286	50	0.5	0.2	0.2	310.00
NRA15D	18-36	± 15	833	12.5	83	1255	50	0.5	0.2	0.2	310.00
NRB5D	36-72	± 5	2200	11.0	78	588	50	0.5	0.3	0.2	339.00
NRB9D	36-72	± 9	1390	12.5	80	651	50	0.5	0.2	0.2	339.00
NRB12D	36-72	± 12	1042	12.5	82	635	50	0.5	0.2	0.2	339.00
NRB15D	36-72	± 15	833	12.5	84	620	50	0.5	0.2	0.2	339.00

‡ 10% minimum load required.

*Measurements taken with input voltage set at mid value.

Series NR—Single Output

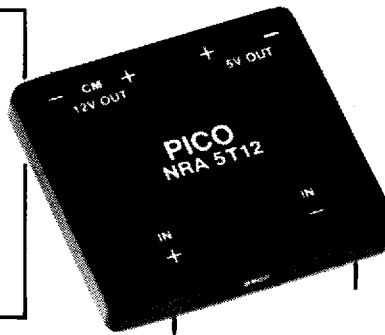
Typical Weight: 175 Grams

Series NR—Dual Output**Series NR—Dual Output**

Typical Weight: 175 Grams

**Delivery—
stock to one week****PICO
Electronics,
Inc.**453 N. MacQuesten Pkwy.
Mt. Vernon, N.Y. 10552914-699-5514
FAX 914-699-5565

This series of high efficiency wide input range, encapsulated regulators come in 50 different models including 30 Triple Output Models to ease board designs. These units feature a 500 Volt DC input to output isolation in both single, dual and triple output models. The NR Series will operate over an ambient temperature range of -25°C to $+70^{\circ}\text{C}$ 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.



SERIES NR T-57-11

TYPICAL CHARACTERISTICS:

Test conditions: 25°C ambient

Operating temperature: -25°C to $+70^{\circ}\text{C}$, ambient

Output voltage tolerance:

0.5% main outputs

Output voltage temperature coefficient: $0.01\%/^{\circ}\text{C}$

Storage temperature: -55°C to 125°C

Short circuit protection: Continuous

Operating frequency: 30 Khtz, typ.

SERIES NR TRIPLE OUTPUT

PICO PART NUMBER	INPUT VOLTAGE RANGE	MAIN OUTPUT VOLTAGE					AUXILIARY OUTPUT VOLTAGE					EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT FULL LOAD TYPICAL (mA)	PRICE 1-24
		OUTPUT VOLTAGE DC OUTPUT	MAX. LOAD CURRENT mA OUTPUT	MAX. OUTPUT POWER (watts) OUTPUT	V. LD. REG. 25%-100% LOAD ($\pm\%$)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p	OUTPUT VOLTAGE DC PER OUTPUT	MAX. LOAD CURRENT mA PER OUTPUT	MAX. OUTPUT POWER (watts) PER OUTPUT	VOLT. LOAD REG. 25%-100% LOAD ($\pm\%$)	OUT VOLT RIPPLE @ FULL LD. 1-1 MHz BW mv p-p			
NRA5T12	18-36	5	3000	15	0.2	50	± 12	208	2.5	5	50	78	1068	360.00
NRA5T15	18-36	5	3000	15	0.2	50	± 15	167	2.5	5	50	78	1068	360.00
NRA9T5	18-36	9	2220	20	0.2	50	± 5	500	2.5	5	50	80	1302	360.00
NRA9T12	18-36	9	2220	20	0.2	50	± 12	208	2.5	5	50	80	1302	360.00
NRA9T15	18-36	9	2220	20	0.2	50	± 15	167	2.5	5	50	80	1302	360.00
NRA12T5	18-36	12	1660	20	0.2	50	± 5	500	2.5	5	50	81	1286	360.00
NRA12T15	18-36	12	1660	20	0.2	50	± 15	167	2.5	5	50	81	1286	360.00
NRA15T5	18-36	15	1330	20	0.2	50	± 5	500	2.5	5	50	83	1255	360.00
NRA15T12	18-36	15	1330	20	0.2	50	± 12	208	2.5	5	50	83	1255	360.00
NRA24T5	18-36	24	830	20	0.2	50	± 5	500	2.5	5	50	84	1240	360.00
NRA24T12	18-36	24	830	20	0.2	50	± 12	208	2.5	5	50	84	1240	360.00
NRA24T15	18-36	24	830	20	0.2	50	± 15	167	2.5	5	50	84	1240	360.00
NRA28T5	18-36	28	714	20	0.2	50	± 5	500	2.5	5	50	85	1225	360.00
NRA28T12	18-36	28	714	20	0.2	50	± 12	208	2.5	5	50	85	1225	360.00
NRA28T15	18-36	28	714	20	0.2	50	± 15	167	2.5	5	50	85	1225	360.00
NRB5T12	36-72	5	3400	17	0.2	50	± 12	208	2.5	5	50	78	588	389.00
NRB5T15	36-72	5	3400	17	0.2	50	± 15	167	2.5	5	50	78	588	389.00
NRB9T5	36-72	9	2220	20	0.2	50	± 5	500	2.5	5	50	80	651	389.00
NRB9T12	36-72	9	2220	20	0.2	50	± 12	208	2.5	5	50	80	651	389.00
NRB9T15	36-72	9	2220	20	0.2	50	± 15	167	2.5	5	50	80	651	389.00
NRB12T5	36-72	12	1660	20	0.2	50	± 5	500	2.5	5	50	84	620	389.00
NRB12T15	36-72	12	1660	20	0.2	50	± 15	167	2.5	5	50	84	620	389.00
NRB15T5	36-72	15	1667	25	0.2	50	± 5	500	2.5	5	50	85	735	389.00
NRB15T12	36-72	15	1667	25	0.2	50	± 12	208	2.5	5	50	85	735	389.00
NRB24T5	36-72	24	1042	25	0.2	50	± 5	500	2.5	5	50	86	727	389.00
NRB24T12	36-72	24	1042	25	0.2	50	± 12	208	2.5	5	50	86	727	389.00
NRB24T15	36-72	24	1042	25	0.2	50	± 15	167	2.5	5	50	86	727	389.00
NRB28T5	36-72	28	893	25	0.2	50	± 5	500	2.5	5	50	87	718	389.00
NRB28T12	36-72	28	893	25	0.2	50	± 12	208	2.5	5	50	87	718	389.00
NRB28T15	36-72	28	893	25	0.2	50	± 15	167	2.5	5	50	87	718	389.00

Common Characteristics

Main Output Voltage Tolerance $\pm 0.5\%$

Main Line Regulation $\pm 0.2\%$

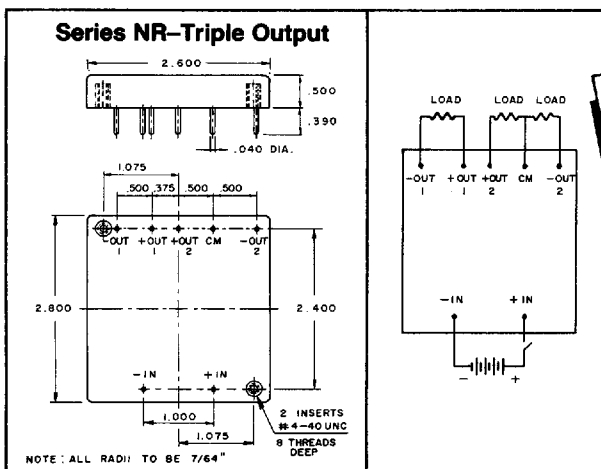
Common Characteristics

Auxiliary Output Voltage Tolerance $\pm 4\%$

Auxiliary Line Regulation $\pm 0.2\%$

‡ 10% minimum load required.

*Measurements taken with input voltage set at mid value.



Typical Weight: 175 Grams

30 Triple Output Models

Delivery—stock to one week

OPTIONS AVAILABLE

- Expanded operating temp (-55°C to $+85^{\circ}\text{C}$)
- Stabilization Bake (125°C ambient)
- Temperature Cycle (-55°C to $+125^{\circ}\text{C}$)
- Hi Temp, full power burn in (100% power, 125°C case temp)

For immediate engineering assistance or to place an order—
Call Toll Free 800-431-1064

PICO Electronics, Inc.

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Mt. Vernon, New York 10552

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