

SERIES OR / SOR

DC-DC CONVERTERS

Isolated Regulated up to 2.5 Watts

Wide Input - Low Profile .300"

Hi Reliability, Ultra-Miniature, Isolated DC-DC Converters

-25°C to 70°C Ambient Operating Temperature

Wide Input Range

Low Profile .300" Height

No Heat Sink or Electrical Derating Required

These Units Available for \$30 in OEM Quantities

This series of high efficiency wide input range, encapsulated regulators come in 84 different models. These units feature a 1,500 VOLT DC input to output isolation in both single and dual output models. The OR Series will operate over a temperature range from -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

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- Voltage regulation over input range of

Unit	Low	High
ORE	5V	15V
ORF	8V	24V
ORA	18V	36V

- Encapsulated semiconductors, 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 = $\pm 1.0\%$
- High efficiency - up to 80%
- Will operate over a temperature range of -25° C to +70° C with no heat sink or electrical derating
- Isolation - 100 megohms at 1,500 Volts DC
- 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.

TYPICAL CHARACTERISTICS:

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- **Test conditions:** 25° C ambient.
- **Operating temperature:** -25° C to +70° C ambient.
- **Output voltage tolerance:** $\pm 1\%$ at typical input voltage
- **Output voltage temperature coefficient:** 0.02%/°C
- **Storage temperature:** -55° C to +125° C
- **Short circuit protection:** Temporary

Options Available

- 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.)

SERIES OR / SOR - SINGLE OUTPUT

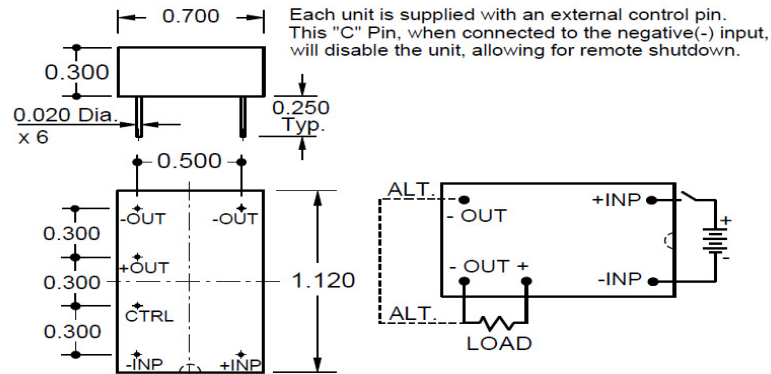
PICO PLUG-IN PART NUMBER	PICO SURFACE MOUNT PART NUMBER	Input Volt. Range	Output Volt. DC	Max. Load Current (mA)	Max. Output Power (watts)	Eff. @ Full Load Typical (%)*	Input Current @ Full Load Typical (mA)*	Output Ripple@ Full Load 1-1 MHz BW mv p-p	Output Volt. Toleranc e (± %)*	** V LD. Reg. 25%-100 % Load (± %)*	Line Regu- lation (± %)*	Price (US \$)
ORE3.3S	SORE3.3S	5-15	3.3	364	1.2	69	174	200	1.50	2.50	2.00	133.00
ORE5S	SORE5S	5-15	5	300	1.5	70	215	200	0.75	1.75	1.75	133.00
ORE5.2S	SORE5.2S	5-15	5.2	288	1.5	70	215	200	0.75	1.75	1.75	133.00
ORE9S	SORE9S	5-15	9	167	1.5	75	200	150	0.50	1.25	1.50	133.00
ORE12S	SORE12S	5-15	12	125	1.5	77	195	150	0.50	1.00	1.25	133.00
ORE15S	SORE15S	5-15	15	100	1.5	77	195	150	0.50	1.00	1.25	133.00
ORE24S	SORE24S	5-15	24	63	1.5	77	195	150	0.50	0.75	1.00	133.00
ORE28S	SORE28S	5-15	28	54	1.5	78	190	200	0.50	0.75	0.75	133.00
ORF3.3S	SORF3.3S	8-24	3.3	455	1.5	72	130	200	2.00	3.00	3.00	133.00
ORF5S	SORF5S	8-24	5	400	2.0	74	170	200	0.75	1.75	1.50	133.00
ORF5.2S	SORF5.2S	8-24	5.2	384	2.0	74	170	200	0.75	1.75	1.50	133.00
ORF9S	SORF9S	8-24	9	222	2.0	76	165	150	0.50	1.25	1.25	133.00
ORF12S	SORF12S	8-24	12	167	2.0	77	160	150	0.50	1.00	1.00	133.00
ORF15S	SORF15S	8-24	15	133	2.0	78	160	150	0.50	1.00	1.00	133.00
ORF24S	SORF24S	8-24	24	83	2.0	78	160	150	0.50	0.75	1.00	133.00
ORF28S	SORF28S	8-24	28	71	2.0	79	155	200	0.50	0.75	0.75	133.00
ORA3.3S	SORA3.3S	18-36	3.3	455	1.5	72	77	200	2.00	3.00	2.00	133.00
ORA5S	SORA5S	18-36	5	400	2.0	76	98	200	0.75	1.75	1.00	133.00
ORA5.2S	SORA5.2S	18-36	5.2	384	2.0	76	98	200	0.75	1.75	1.00	133.00
ORA9S	SORA9S	18-36	9	278	2.5	78	120	150	0.50	1.25	0.75	133.00
ORA12S	SORA12S	18-36	12	208	2.5	78	120	150	0.50	1.00	0.75	133.00
ORA15S	SORA15S	18-36	15	167	2.5	79	115	150	0.50	1.00	0.75	133.00
ORA24S	SORA24S	18-36	24	104	2.5	80	115	150	0.50	0.75	0.75	133.00
ORA28S	SORA28S	18-36	28	89	2.5	80	115	200	0.50	0.75	0.50	133.00

* Measurements taken with input voltage set at mid value.

** 10% minimum load required.

NOTE: The ripple is measured across with a 0.1µf ceramic capacitor. Operating frequency: 100 KHz fixed. Operating temperature: -25° C to +70° C ambient. Isolation input to output: 1,500VDC.

Series OR Single Output OR SERIES PLUG IN SINGLE OUTPUT

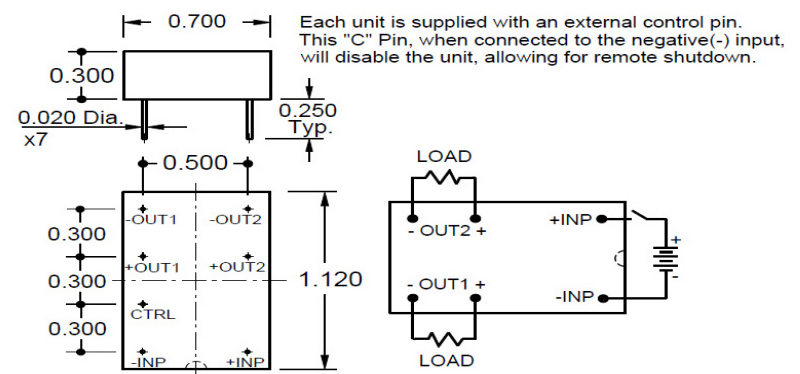


BOTTOM VIEW

NOTES: Typical Weight: 8.4 Grams
ALL DIMENSIONS ARE IN INCHES

[Larger Size Drawing](#)
Bottom View

Series OR Dual Output OR SERIES PLUG IN DUAL OUTPUT



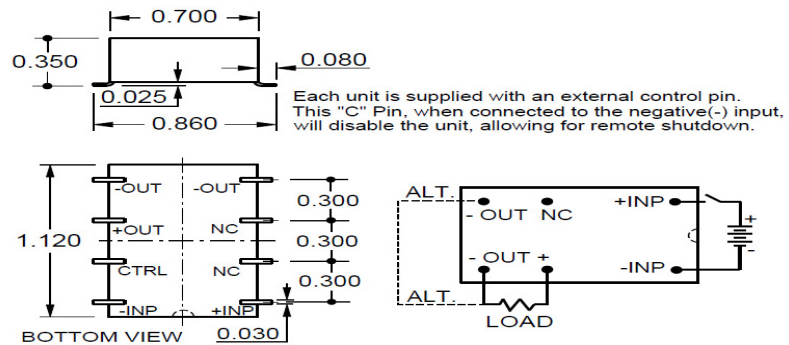
BOTTOM VIEW

NOTES: Typical Weight: 8.5 Grams
ALL DIMENSIONS ARE IN INCHES

[Larger Size Schematic](#)
Bottom View

Series SOR Single Output

SOR SERIES SURFACE MOUNT SINGLE OUTPUT

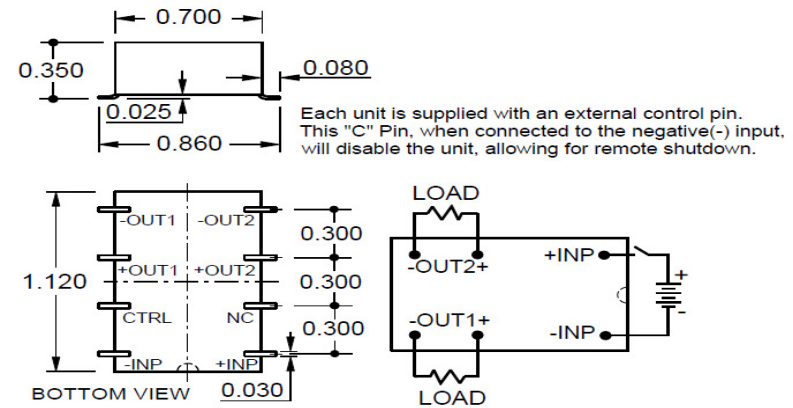


NOTES: Typical Weight: 10 Grams
ALL DIMENSIONS ARE IN INCHES

[Larger Size Drawing](#)
Bottom View

Series SOR Dual Output

SOR SERIES SURFACE MOUNT DUAL OUTPUT



NOTES: Typical Weight: 10 Grams
ALL DIMENSIONS ARE IN INCHES

[Larger Size Schematic](#)
Bottom View

SERIES OR / SOR - DUAL OUTPUT

PICO PLUG-IN PART NUMBER	PICO SURFACE MOUNT 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. Toleranc e (± %)*	** V LD. Reg. 25%-100 % Load (± %)*	Line Regu- lation (± %)*	Price (US \$)
ORE5D	SORE5D	5-15	5	150	0.75	70	215	200	0.75	1.75	1.75	163.26
ORE9D	SORE9D	5-15	9	84	0.75	75	200	150	0.50	1.25	1.50	163.26
ORE12D	SORE12D	5-15	12	63	0.75	77	195	150	0.50	1.00	1.25	163.26
ORE15D	SORE15D	5-15	15	50	0.75	77	195	150	0.50	1.00	1.25	163.26
ORE24D	SORE24D	5-15	24	32	0.75	77	195	150	0.50	0.75	1.00	163.26
ORE28D	SORE28D	5-15	28	27	0.75	78	190	200	0.50	0.75	0.75	163.26
ORF5D	SORF5D	8-24	5	200	1.00	74	170	200	0.75	1.75	1.50	163.26
ORF9D	SORF9D	8-24	9	111	1.00	76	165	150	0.50	1.25	1.25	163.26
ORF12D	SORF12D	8-24	12	84	1.00	77	160	150	0.50	1.00	1.00	163.26
ORF15D	SORF15D	8-24	15	67	1.00	78	160	150	0.50	1.00	1.00	163.26
ORF24D	SORF24D	8-24	24	42	1.00	78	160	150	0.50	0.75	1.00	163.26
ORF28D	SORF28D	8-24	28	36	1.00	79	155	200	0.50	0.75	0.75	163.26
ORA5D	SORA5D	18-36	5	200	1.00	76	98	200	0.75	1.75	1.00	163.26
ORA9D	SORA9D	18-36	9	139	1.25	78	120	150	0.50	1.25	0.75	163.26
ORA12D	SORA12D	18-36	12	104	1.25	78	120	150	0.50	1.00	0.75	163.26
ORA15D	SORA15D	18-36	15	84	1.25	79	115	150	0.50	1.00	0.75	163.26
ORA24D	SORA24D	18-36	24	52	1.25	80	115	150	0.50	0.75	0.75	163.26
ORA28D	SORA28D	18-36	28	45	1.25	80	115	200	0.50	0.75	0.50	163.26

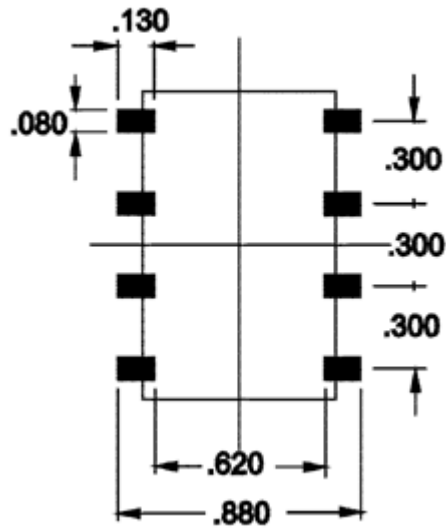
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RECOMMENDED LAND PATTERN DIMENSION

Series SOR



Ordering Instructions:

- No minimum.

Net 30 days F.O.B. Pelham, NY

Delivery--stock to one week for sample orders.

For immediate engineering assistance or to place an order:

Call Toll Free: 800-431-1064

PICO Electronics, Inc.

143 Sparks Ave. Pelham, NY 10803

Tel: 914-738-1400 or Fax: 914-738-8225