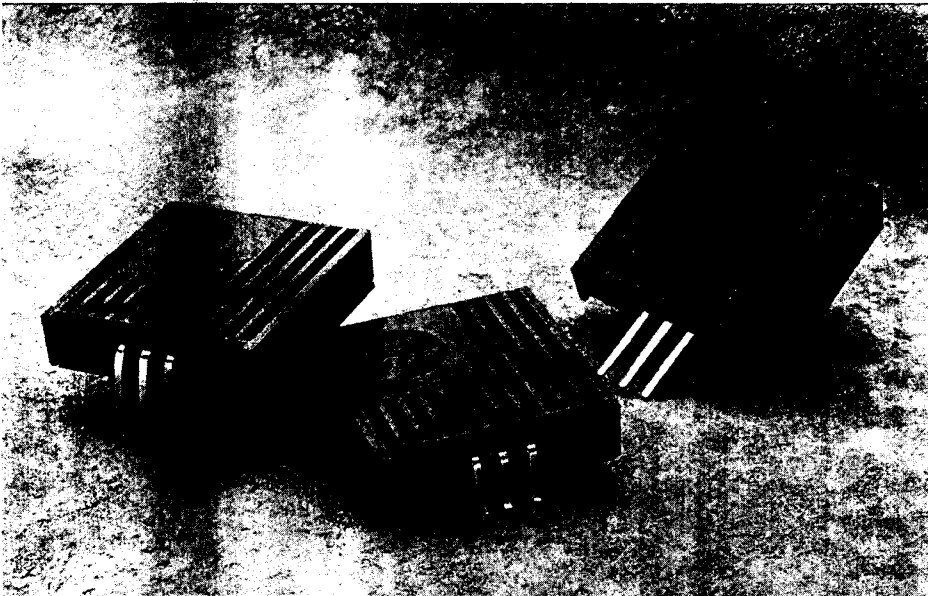




POWER TRENDS

**78SR 105yC
78SR 109yC
78SR 112yC**

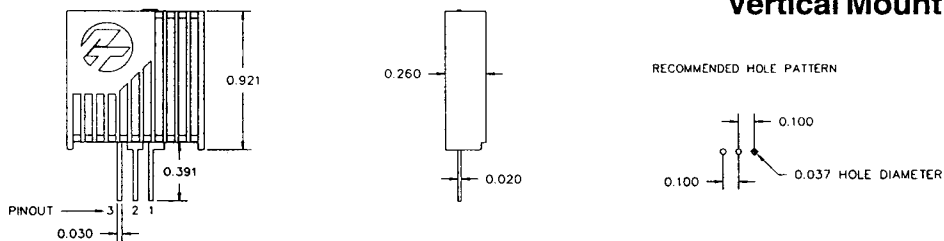
1.5 AMP POSITIVE STEP-DOWN INTEGRATED SWITCHING REGULATOR



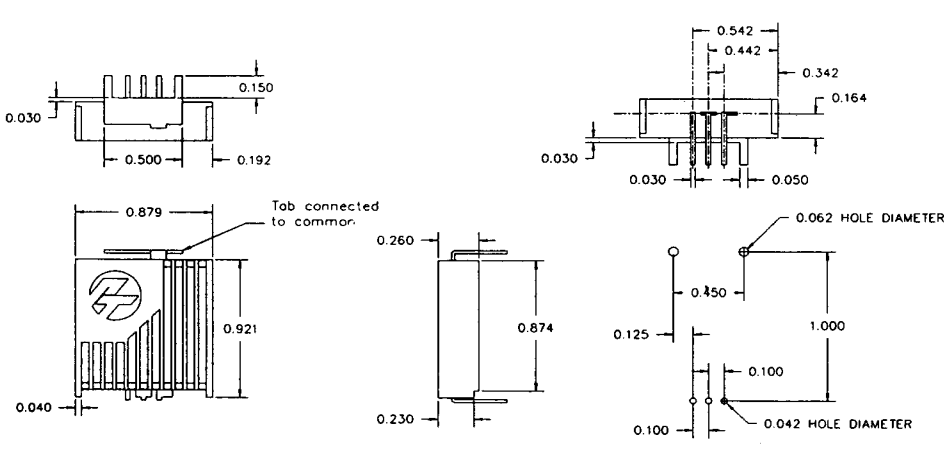
Trendsetter™ 78SR "C" Series is a new line of 3-Terminal Integrated Switching Regulators (ISR's) that are as easy to use as linear 3-terminal regulators. These ISR's have a maximum output current of 1.5 Amps and an output voltage that is laser trimmed to industry standard voltages. They have excellent line and load regulation with internal short circuit and over-temperature protection.

- State-of-the-Art Power Density >90 Watts per Cubic Inch
- High Efficiency >85%
- Self-Contained Inductor
- Internal Short Circuit and Over-Temperature Protection
- Pin Compatible with Existing Linear 3-Terminal, "78" Series Regulators

Vertical Mount



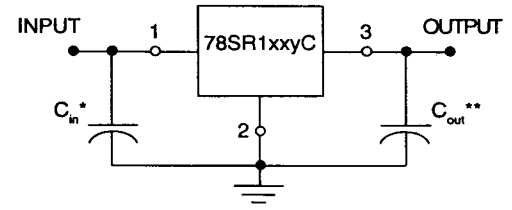
Horizontal Mount



Pin-Out Information

| 78SR "C" Series Positive Regulators | | | |
|-------------------------------------|---|--------|----------|
| Pin | 1 | INPUT | (right) |
| | 2 | COMMON | (center) |
| | 3 | OUTPUT | (left) |
| (As viewed from the finned side) | | | |

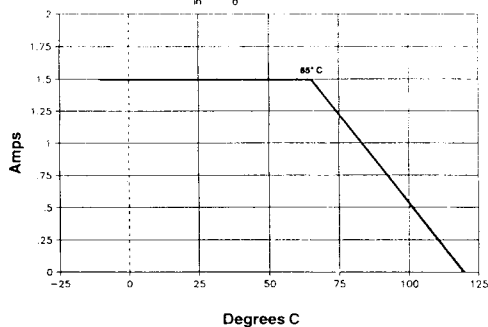
Standard Application



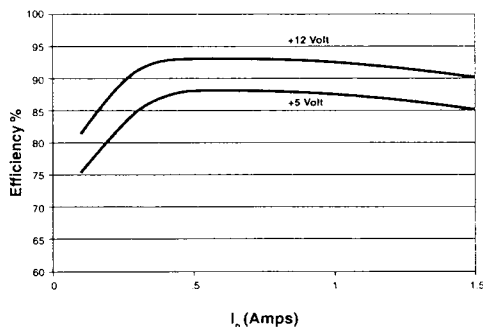
* Optional low ESR electrolytic
** Optional ceramic (1μF)

Performance Data

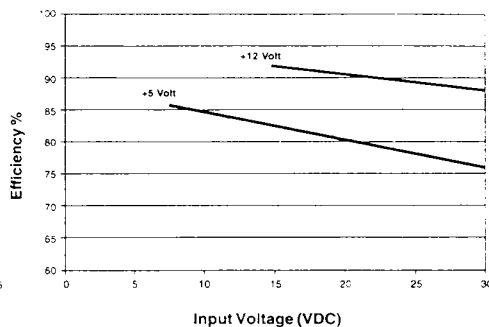
Temperature Derating
Output Current vs Operating Ambient Temperature
@ $V_{in} = V_o + 3$ Volts



Efficiency vs Load
@ $V_{in} = V_o + 5$ Volts



Efficiency vs Input Voltage
@ $I_o = 1.5$ Amp



Specifications

| Characteristics ($T_a=25^\circ\text{C}$ unless noted) | Symbols | Conditions | 78SR1xx y C | | | Units |
|---|---------------------|---|-----------------------|-------------|-----------|------------------|
| | | | Min | Typ | Max | |
| Output Current | I_o | Over V_{in} range | 0.1 | - | 1.5 | Amps |
| Current Limit | I_{cl} | $V_{in}=V_o+3V$ | - | 1.8 | - | Amps |
| Short Circuit Current | I_{sc} | $V_{in}=V_o+3V$ | - | 3.5 | - | Amps |
| Input Voltage Range | V_{in} | $I_o=1.5$ Amp $I_o=1.5$ Amp | $V_o=5V$ $V_o=12V$ | - | 30 | Volts |
| Reflected Ripple | I_{rr} | $V_{in}=V_o+5V, I_o=1$ Amp $Z_{source}=1.0\Omega$ | - | 15 | - | mA_{pp} |
| Static Voltage Tolerance | ΔV_o | Over V_{in} range, $I_o=1$ Amp $T_a=-40$ to $+65^\circ\text{C}$ | - | ± 1.0 | ± 2.0 | $\%V_o$ |
| Ripple Rejection | RR | Over V_{in} range | - | 45 | - | db |
| Line Regulation | Reg_{line} | Over V_{in} range | - | ± 0.2 | ± 0.4 | $\%V_o$ |
| Load Regulation | Reg_{load} | $0.15 \leq I_o \leq 1.5$ Amp | - | ± 0.1 | ± 0.2 | $\%V_o$ |
| Ripple/Noise | V_n | $V_{in}=8V, I_o=1.5$ A, $V_o=5V$ $V_{in}=15V, I_o=1.5$ A, $V_o=12V$ | - | 50 80 | - | mV_{pp} |
| Transient Response | t_{tr} | 50% load change $V_o \leq 1\%$ recovery | - | - | 100 | μsec |
| Operating Temperature | T_a | $V_{in}=V_o+3V, I_o=1.5$ Amp | -40 | - | +65 | $^\circ\text{C}$ |
| Storage Temperature | T_s | - | -65 | - | +150 | $^\circ\text{C}$ |
| Efficiency | η | $V_{in}=10V, V_o=5$ Volts, $I_o=1$ Amp $V_{in}=17V, V_o=12$ Volts, $I_o=1$ Amp | - | 85 90 | - | $\%$ |
| Switching Frequency | f_o | - | - | 650 | - | KHz |
| EMI/RFI | - | Over V_{in} range, $I_o=1.5$ Amp | Meets FCC Class B | | | - |
| Mechanical Shock | - | - | - | - | 50 | G's |
| Weight | - | - | - | 0.25 7.0 | - | Ounces Grams |
| Relative Humidity | - | Non-condensing | 0 | - | 95 | $\%$ |

(Specifications subject to change without prior notice)

Ordering Information

78SR1 **xx** **y** C 1.5 Amp Positive Integrated Switching Regulator

| | |
|----------------------------|-----------------------------|
| xx = Output Voltage | y = Package Style |
| 05 = 5.0 Volts | V = Vertical Mount |
| 09 = 9.0 Volts | H = Horizontal Mount |
| 12 = 12 Volts | |

POWER TRENDS

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