

Series E**μPOWER™****3 Watts Compact
Low-Profile Single/Dual DC-DC Converters****Features**

- Surface mount technology
- Up to 3 watts output power
- High power density
- High efficiency
- Low profile package
- High input/output isolation
- Short circuit protection
- Low output ripple & noise
- Single or dual outputs
- High MTBF
- 100% burned-in and tested
- Metal case shielding
- Vacuum encapsulated potting

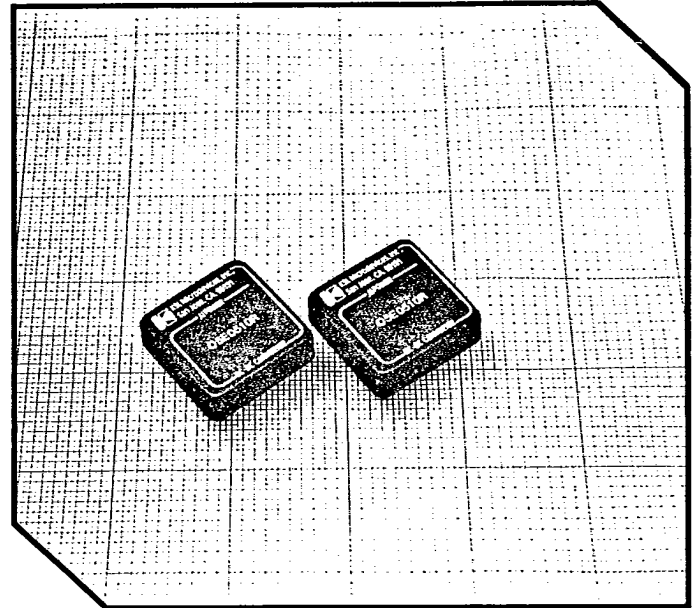
Specifications (Regulate Type)

- Input Voltage Range: $\pm 10\%$ at nominal
- Output Voltage Tolerance: $\pm 1\%$ at nominal
- Input Reflected Ripple: 1% of V_{in} max.
- Line Regulation: $\pm .05\%$ for $\pm 10\%$ line change
- Load Regulation: .05% (10% to 100% load)
- Output Ripple & Noise: 50mV p-p
- Input/Output Isolation: 150M Ω 500VDC min.
- Short Circuit Protection: current limiting
- Efficiency: 60% @ nominal voltage
- Transient Response: Less than 10 μ sec.
- MTBF: 300,000 hours
- Operating Temperature: -25°C to $+70^{\circ}\text{C}$
- Storage Temperature: -55°C to $+70^{\circ}\text{C}$
- Temperature Coefficient: 100ppm/ $^{\circ}\text{C}$
- Burn-In: 70 $^{\circ}\text{C}$ for 4 hours and tested
- Long Term Stability: 0.4%/khours

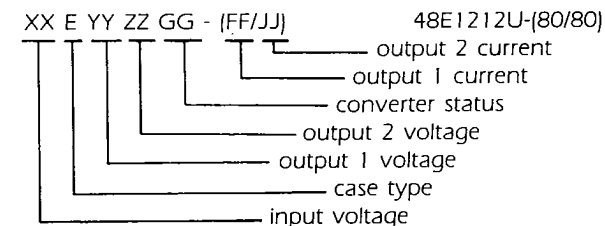
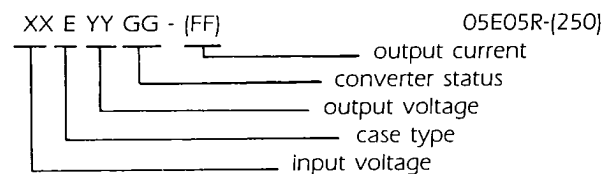
Special Options

- Case: EMI/RF Continuous Shielding Package
Six-sided enclosure grounded
- Stabilization Bake: MIL-STD-883B, method 1008.2
24 hours at $+125^{\circ}\text{C}$
- Burn-In: MIL-STD-883B, method 1015.4
96 hours at $+70^{\circ}\text{C}$ case temperature
- Temperature Cycle: MIL-STD-883B, method 1010.5
 $-55^{\circ}\text{C}/+125^{\circ}\text{C}$ 10 cycles minimum
- Thermal Shock: MIL-STD-883B, method 1011.4
 $-55^{\circ}\text{C}/5$ minutes, $+125^{\circ}\text{C}/5$ minutes

*Specifications subject to change without notice

**Part Number — Custom Designs**

KSL μPOWER converters are used in a wide variety of special custom design applications where alternate voltages, currents, pin-outs or multiple outputs are required.



Converter Status

U: Unregulated
R: Regulated
C: Custom circuit
P: Special pin-outs

S: Special specs
J: Hi-Rel screened
T: Triple outputs
Q: Quad outputs

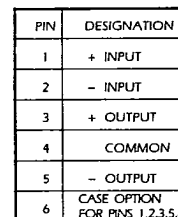
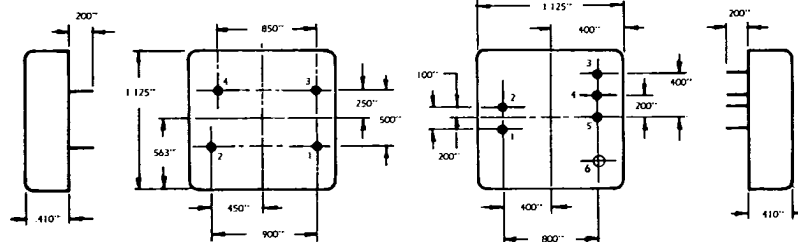
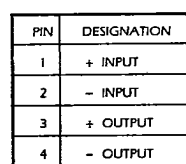
Applications

- Telecommunications Equipment
- Data Communications
- CAD/CAM and CAE Systems
- Process Control Equipment
- Medical/Instrumentation



MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	LOAD CURRENT*	MODEL	INPUT VOLTAGE	OUTPUT VOLTAGE	LOAD CURRENT*
05E05	+/- 5V	+/- 5V	600 mA	05E0505	+/- 5V	± 5V	± 300 mA
05E09	+/- 5V	+/- 9V	300 mA	05E0909	+/- 5V	± 9V	± 150 mA
05E12	+/- 5V	+/- 12V	250 mA	05E1212	+/- 5V	± 12V	± 125 mA
05E15	+/- 5V	+/- 15V	200 mA	05E1515	+/- 5V	± 15V	± 100 mA
05E24	+/- 5V	+/- 24V	120 mA	05E2424	+/- 5V	± 24V	± 60 mA
05E28	+/- 5V	+/- 28V	100 mA	05E2828	+/- 5V	± 28V	± 50 mA
12E05	+/- 12V	+/- 5V	600 mA	12E0505	+/- 12V	± 5V	± 300 mA
12E09	+/- 12V	+/- 9V	300 mA	12E0909	+/- 12V	± 9V	± 150 mA
12E12	+/- 12V	+/- 12V	250 mA	12E1212	+/- 12V	± 12V	± 125 mA
12E15	+/- 12V	+/- 15V	200 mA	12E1515	+/- 12V	± 15V	± 100 mA
12E24	+/- 12V	+/- 24V	120 mA	12E2424	+/- 12V	± 24V	± 60 mA
12E28	+/- 12V	+/- 28V	100 mA	12E2828	+/- 12V	± 28V	± 50 mA
15E05	+/- 15V	+/- 5V	600 mA	15E0505	+/- 15V	± 5V	± 300 mA
15E09	+/- 15V	+/- 9V	300 mA	15E0909	+/- 15V	± 9V	± 150 mA
15E12	+/- 15V	+/- 12V	250 mA	15E1212	+/- 15V	± 12V	± 125 mA
15E15	+/- 15V	+/- 15V	200 mA	15E1515	+/- 15V	± 15V	± 100 mA
15E24	+/- 15V	+/- 24V	120 mA	15E2424	+/- 15V	± 24V	± 60 mA
15E28	+/- 15V	+/- 28V	100 mA	15E2828	+/- 15V	± 28V	± 50 mA
24E05	+/- 24V	+/- 5V	600 mA	24E0505	+/- 24V	± 5V	± 300 mA
24E09	+/- 24V	+/- 9V	300 mA	24E0909	+/- 24V	± 9V	± 150 mA
24E12	+/- 24V	+/- 12V	250 mA	24E1212	+/- 24V	± 12V	± 125 mA
24E15	+/- 24V	+/- 15V	200 mA	24E1515	+/- 24V	± 15V	± 100 mA
24E24	+/- 24V	+/- 24V	120 mA	24E2424	+/- 24V	± 24V	± 60 mA
24E28	+/- 24V	+/- 28V	100 mA	24E2828	+/- 24V	± 28V	± 50 mA
48E05	+/- 48V	+/- 5V	600 mA	48E0505	+/- 48V	± 5V	± 300 mA
48E09	+/- 48V	+/- 9V	300 mA	48E0909	+/- 48V	± 9V	± 150 mA
48E12	+/- 48V	+/- 12V	250 mA	48E1212	+/- 48V	± 12V	± 125 mA
48E15	+/- 48V	+/- 15V	200 mA	48E1515	+/- 48V	± 15V	± 100 mA
48E24	+/- 48V	+/- 24V	120 mA	48E2424	+/- 48V	± 24V	± 60 mA
48E28	+/- 48V	+/- 28V	100 mA	48E2828	+/- 48V	± 28V	± 50 mA

BOTTOM VIEW



PINS: 0.04" x 0.20" long min.

Design Notes

[illegible]