



52142 MINIATURE VOLTAGE REGULATOR SERIES

PRELIMINARY*, APRIL 1987

LOW NOISE POSITIVE VOLTAGE REGULATORS

FEATURES:

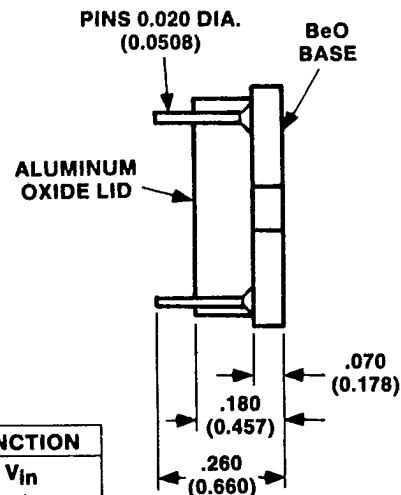
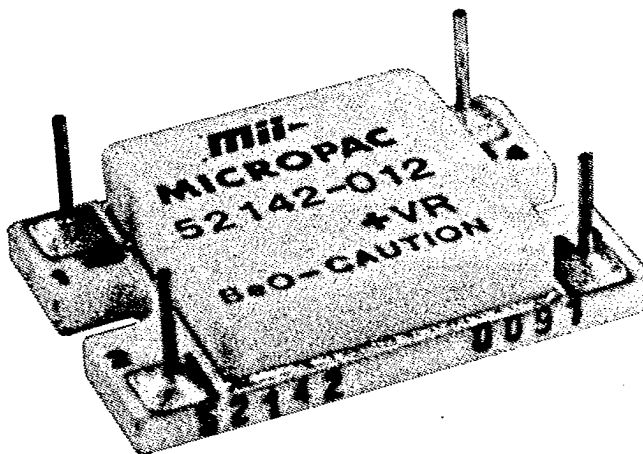
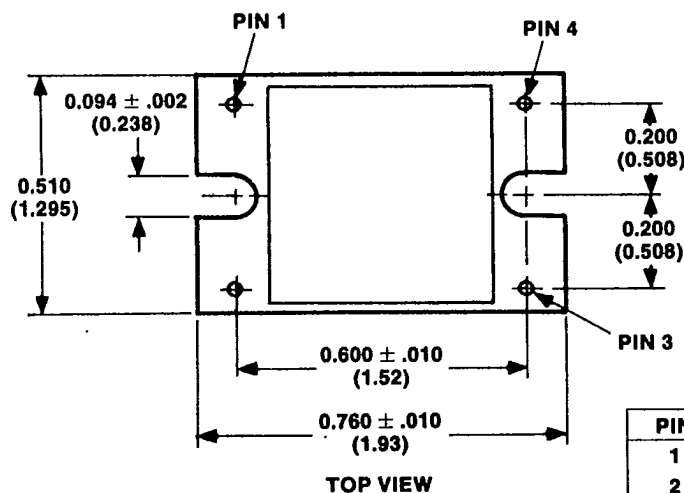
- Compact Size - $< 0.4 \text{ in}^2$ Footprint
- Isolated Case With Upward-Facing Pins
- Wide Range of Output Voltages Available - +12 to +28 Volt Models
- $< 3 \mu\text{V}$ Output Noise
- Full Military Temperature Operation: -55 to 125°C
- Military Environmental Screening Available

GENERAL DESCRIPTION

The 52142 series of positive voltage regulators offer low-noise performance in a compact unit with no protrusions through the mounting surface. These devices have internal short-circuit protection, current foldback, and current limiting circuitry. The flat BeO package base electrically isolates the device from the mounting surface, while providing excellent thermal conductivity. Additional components are not required; however, use of a filter capacitor at the input terminals of the device is recommended.

Applications include RF and microwave oscillators, RF amplifiers, and other low noise power supply requirements.

PACKAGE DIMENSIONS



PIN	FUNCTION
1	V_{in}
2	n/c
3	Common
4	V_o

Micropac Industries, Inc. • 905 E. Walnut St. • Garland, Texas 75040 • (214) 272-3571

*Information reflects goals for a product in design. Specifications are subject to change without notice.

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ABSOLUTE MAXIMUM RATINGS

Output Current, I_O	300 mA
Input Voltage, V_{IN}	38 V
Operating Case Temperature, T_C	-55 to 125°C
Junction Temperature, T_J	-55 to 150°C
Storage Temperature.....	-65 to +150°C
Lead Soldering Temperature, $t = 60$ sec.....	240°C
Power Dissipation, P_D	15 W ¹
¹ Derate at 120 mW/°C above 25°C	

ELECTRICAL CHARACTERISTICS* **$T_C = +25^\circ\text{C}$ unless otherwise specified**

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Temperature Coeff of Output Voltage	$V_{IN} = V_O + 3V$, $I_O = +150$ mA $-55 < T_C < 125^\circ\text{C}$		+0.004	+0.01	%/°C
Line Regulation ¹	$V_{IN} = V_O + 5V$, $\Delta V_{IN} = +5V$ $I_O = +50$ mA $-55 < T_C < 125^\circ\text{C}$			0.3	% V_O
Load Regulation ¹	$V_{IN} = V_O + 5V$, $I_O = 50$ mA $\Delta I_O = 100$ mA			0.5	% V_O
Quiescent Current	$V_{IN} = V_O + 5V$, $I_O = 0$ mA			35	mA
Short Circuit Current	$V_{IN} = V_O + 5V$			100	mA
Foldback Current	$V_{IN} = V_O + 5V$			350	mA
Input-Output Differential	$I_O = 300$ mA	3			V
Noise Voltage	$V_{IN} = V_O + 5V$, $I_O = 50$ mA 1-3 kHz, BW = 200 Hz 4-10 kHz, BW = 1 kHz 11-300 kHz, BW = 3 kHz			3	μV
Ripple Rejection	$V_{IN} = V_O + 5V$, $I_O = 300$ mA		-50		dB
Thermal Resistance, θ_{JC}			6.25		°C/W

¹Instantaneous regulation**ORDERING INFORMATION**

52142-XX

part	voltage
no.	

Standard voltages available: 12, 15, 16, 18, 24, and 28. Other voltages available upon request.

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