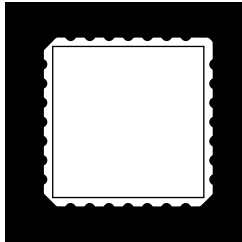


# SURFACE MOUNT POSITIVE FIXED VOLTAGE REGULATOR



**Three Terminal, Fixed Voltage, 1.0 Amp Precision Positive Regulator In A Hermetic Surface Mount Package**

## FEATURES

- Hermetic Surface Mount Package
- Output Voltages: +5V, +12V, +15V
- Output Voltages Set Internally To  $\pm 2\%$
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Hi-Rel Screened

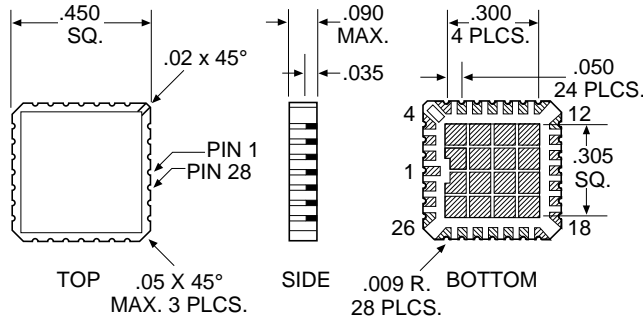
## DESCRIPTION

This three terminal positive regulator is supplied in a hermetically sealed surface mount package. All protective features are designed into the circuit, including thermal shutdown, current limiting and safe-area control. With heat sinking, they can deliver 1.0 amp of output current. This unit features internally trimmed voltages to  $\pm 2\%$  of nominal voltage. Standard voltages are +5V, +12V, and +15V. These units are ideally suited for Military applications where a hermetic surface mount package is required.

## ABSOLUTE MAXIMUM RATINGS @ 25°C

Power Dissipation ( $P_D$ ) (Internally Limited)	10 W
Input - Output Voltage Differential	35 V
Operating Junction Temperature Range	- 55°C to + 150°C
Storage Temperature Range	- 65°C to + 150°C
Lead Temperature (Soldering 10 Seconds)	280°C
Thermal Resistance: Junction-to-Case	18°C/W

## MECHANICAL OUTLINE



### Pin Connection

Pin 1, 15 thru 28: IN  
 Pin 2, 3, 13, and 14: GND  
 Pin 4 thru 12: OUT

3.5

**ELECTRICAL CHARACTERISTICS**  $I_O = 500\text{mA}$ ,  $-55^\circ\text{C}$   $T_A$   $125^\circ\text{C}$  (unless otherwise specified.)  
 OM7805SM:  $V_{IN} = 10\text{V}$ ; OM7812SM:  $V_{IN} = 19\text{V}$ ; OM7815SM:  $V_{IN} = 23\text{V}$ .

Parameter	Part Number	Conditions	Min.	Max.	Units
Output Voltage, $V_{OUT}$	OM7805SM	$V_{IN} = 7.5\text{V to }20\text{V}$	• 4.85	5.15	V
	OM7812SM	$V_{IN} = 14.5\text{V to }27\text{V}$	• 11.64	12.36	V
	OM7815SM	$V_{IN} = 18.5\text{V to }30\text{V}$	• 14.55	15.45	V
Line Regulation, $V_{RLINE}$ (Note 1)	OM7805SM	$V_{IN} = 7.5\text{V to }20\text{V}$	•	10	mV
		$V_{IN} = 8.0\text{V to }12\text{V}$	•	24	mV
	OM7812SM	$V_{IN} = 14.5\text{V to }27\text{V}$	•	8	mV
		$V_{IN} = 16\text{V to }22\text{V}$	•	20	mV
	OM7815SM	$V_{IN} = 17.5\text{V to }30\text{V}$	•	36	mV
		$V_{IN} = 20\text{V to }26\text{V}$	•	100	mV
Load Regulation, $V_{RLOAD}$ (Note 1)	OM7805SM	$I_O = 5\text{mA to }1.0\text{Amp}$	•	16	mV
		$I_O = 250\text{mA to }750\text{mA}$	•	33	mV
	OM7812SM	$I_O = 5\text{mA to }1.5\text{Amp}$	•	15	mV
		$I_O = 250\text{mA to }750\text{mA}$	•	30	mV
	OM7815SM	$I_O = 5\text{mA to }1.0\text{Amp}$	•	42	mV
		$I_O = 250\text{mA to }750\text{mA}$	•	80	mV
Standby Current Drain, $I_{SCD}$			•	46	mV
			•	86	mV
Standby Current Drain Change With Line, $I_{SCD}$ (Line)	OM7805SM	$V_{IN} = 7.5\text{V to }20\text{V}$	•	40	mV
	OM7812SM	$V_{IN} = 15\text{V to }30\text{V}$	•	80	mV
	OM7815SM	$V_{IN} = 18.5\text{V to }30\text{V}$	•	80	mV
Standby Current Drain Change With Load, $I_{SCD}$ (Load)		$I_O = 5\text{mA to }1000\text{mA}$	•	80	mV
Dropout Voltage		$T_A = 25^\circ\text{C}$ , $V_{OUT} = 100\text{mV}$ , $I_O = 1.0\text{A}$		7.2	mA
Peak Output Current, $I_{O(pk)}$		$T_A = 25^\circ\text{C}$	•	8.0	mA
Short Circuit Current, $I_{DS}$ (Note 2)		$V_{IN} = 35\text{V}$	•	1.0	mA
			•	2.0	mA
			•		
Ripple Rejection  $\frac{V_{IN}}{V_{OUT}}$	OM7805SM	$f = 120\text{Hz}$ , $V_{IN} = 10\text{V}$	•	63	dB
	OM7812SM	$f = 120\text{Hz}$ , $V_{IN} = 10\text{V}$	•	60	dB
	OM7815SM	$f = 120\text{Hz}$ , $V_{IN} = 10\text{V}$	•	59	dB
RMS Output Noise, $N_O$ (Note 3)		$T_A = 25^\circ\text{C}$ , $f = 10\text{Hz to }100\text{kHz}$		54	dB
Long Term Stability (Note 3)  $\frac{V_{IN}}{t}$	OM7805SM	$T_A = 25^\circ\text{C}$ , $t = 1000$ hrs.		52	dB
	OM7812SM			40	$\mu\text{V/V rms}$
	OM7815SM			75	mV
				120	mV
				150	mV

**Note 1:** Load and line regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.

**Note 2:** Short Circuit protection is only assured up to  $V_{IN} = 35\text{V}$

**Note 3:** If not tested, shall be guaranteed to the specified limits.

The • denotes the specifications which apply over the full operating temperature range. If not noted  $T_A = 25^\circ\text{C}$