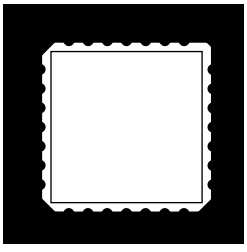
SURFACE MOUNT NEGATIVE FIXED VOLTAGE REGULATOR



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

FEATURES

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

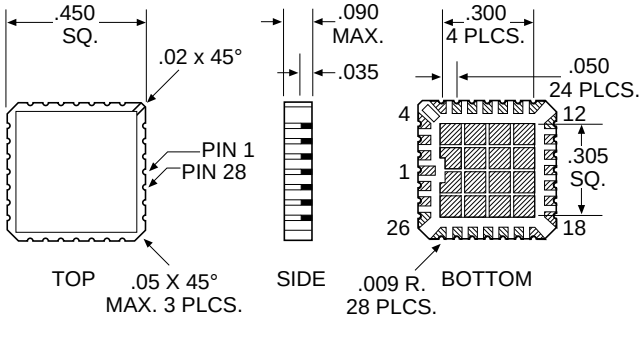
DESCRIPTION

This three terminal negative 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 ±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:	OUT
Pin 2, 3, 13, and 14:	GND
Pin 4 thru 12:	IN

3.5

ELECTRICAL CHARACTERISTICS

I_O = 500mA, -55°C ≤T_A ≤ 125°C (unless otherwise specified.)
OM7905SM: V_{IN} = -10V; OM7912SM: V_{IN} = -19V; OM7915SM: V_{IN} = -23V.

Parameter	Part Number	Conditions		Min.	Max.	Units
Output Voltage, V_{OUT}	OM7905SM	V_{IN} = -7.5V to -20V	•	-5.15	-4.85	V
	OM7912SM	V_{IN} = -14.5V to -27V	•	-12.36	-11.64	V
	OM7915SM	V_{IN} = -17.5V to -30V	•	-15.45	-14.55	V
Line Regulation, V_{RLINE} (Note 1)	OM7905SM	V_{IN} = -7.5V to -20V			20	mV
			•		35	mV
		V_{IN} = -8.0V to -12V			12	mV
			•		20	mV
	OM7912SM	V_{IN} = -14.5V to -27V			33	mV
			•		80	mV
		V_{IN} = -16V to -22V			24	mV
			•		70	mV
	OM7915SM	V_{IN} = -17.5V to -30V			41	mV
			•		82	mV
		V_{IN} = -20V to -26V			36	mV
			•		60	mV
Load Regulation, V_{RLOAD} (Note 1)	OM7905SM	I_O = -5mA to -1.0Amp			35	mV
			•		50	mV
		I_O = -250mA to -750mA			25	mV
			•		45	mV
	OM7912SM	I_O = -5mA to -1.0Amp			55	mV
			•		70	mV
		I_O = -250mA to -750mA			26	mV
			•		55	mV
	OM7915SM	I_O = -5mA to -1.0Amp			60	mV
			•		110	mV
		I_O = -250mA to -750mA			34	mV
			•		70	mV
Standby Current Drain, I_{SCD}	OM7905SM				3.0	mA
			•		3.5	mA
	OM7912SM				4.2	mA
			•		4.6	mA
	OM7915SM				7.2	mA
			•		8.0	mA
Standby Current Drain Change With Line, ΔI_{SCD} (Line)	OM7905SM	V_{IN} = -7.0V to -20V	•		0.6	mA
	OM7912SM	V_{IN} = -14.5V to -27V	•		1.0	mA
	OM7915SM	V_{IN} = -17.5V to -30V			1.0	mA
Standby Current Drain Change With Load, ΔI_{SCD} (Load)		I_O = 5mA to 1000mA	•		0.6	mA
Dropout Voltage		ΔV_{OUT} = 100mV, I_O = 1.0A	•		2.5	V
Peak Output Current, $I_{O\,(pk)}$		T_A = 25°C		.70	2.0	A
Short Circuit Current, I_{DS} (Note 2)		V_{IN} = -35V			1.0	A
			•		2.0	A
Ripple Rejection $\frac{\Delta V_{IN}}{\Delta V_{OUT}}$	OM7905SM	f = 120Hz, ΔV_{IN} = -10V		63		dB
			•	60		dB
	OM7912SM	f = 120Hz, ΔV_{IN} = 10V		56		dB
			•	53		dB
	OM7915SM	f = 120Hz, ΔV_{IN} = 10V		53		dB
			•	50		dB
RMS Output Noise, N_O (Note 3)		T_A = 25°C, f = 10Hz to 100kHz			40	µV/V rms
Long Term Stability (Note 3) $\frac{\Delta V_{IN}}{\Delta t}$	OM7905SM	T_A = 25°C, t = 1000 hrs.			75	mV
	OM7912SM				120	mV
	OM7915SM				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} = -35V.

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°C