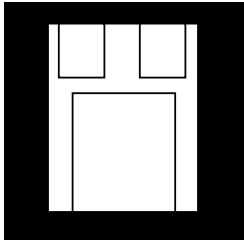


HERMETIC SURFACE MOUNT FIXED VOLTAGE NEGATIVE REGULATORS



Three Terminal, Fixed Voltage, 1.5 Amp
Precision Negative Regulators In Hermetic
Surface Mount Package

FEATURES

- Hermetic Surface Mount Package
- Output Voltages: -5V, -12V, -15V
- Output Voltages Set Internally To $\pm 1\%$
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Hi-Rel Screened

DESCRIPTION

These three terminal negative regulators are 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 over 1.5 amps of output current. These units feature internally trimmed output voltages to $\pm 1\%$ 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

Input to Output Voltage Differential		-35 V
Operating Junction Temperature Range		- 55°C to + 150°C
Storage Temperature Range		- 55°C to + 150°C
Typical Power/Thermal Characteristics:		
Rated Power @ 25°C		
T_C		17.5W
T_A		3W
Thermal Resistance:		
θ_{JC}		3.5°C/W
θ_{JA}		42°C/W
Lead Temperature at Case (5 sec)		225°C

3.5

ELECTRICAL CHARACTERISTICS -5 Volt $V_{IN} = -10V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions		Min.	Max.	Unit
Output Voltage	V _{OUT}	T _A = 25°C		-4.95	-5.05	V
		V _{IN} = -7.5V to -20V	•	-4.85	-5.15	V
Line Regulation (Note 1)	V _{RLINE}	V _{IN} = -7.5V to -20V	•	12	mV	
			•	25	mV	
		V _{IN} = -8.0V to -12V	•	5	mV	
Load Regulation (Note 1)	V _{RLLOAD}	I _O = 5mA to 1.5 Amp	•	20	mV	
			•	25	mV	
		I _O = 250mA to 750 mA	•	15	mV	
Standby Current Drain	I _{SCD}		•	30	mV	
			•	2.5	mA	
Standby Current Drain Change With Line	ΔI _{SCD} (Line)	V _{IN} = -7.0V to -20V	•	3.0	mA	
Standby Current Drain Change With Load	ΔI _{SCD} (Load)	I _O = 5mA to 1000mA	•	0.4	mA	
Dropout Voltage	V _{DO}	ΔV _{OUT} = 100mV, I _O = 1.0A	•	2.5	V	
Peak Output Current	I _{O(pk)}	T _A = 25°C		1.5	A	
Short Circuit Current (Note 2)	I _{DS}	V _{IN} = -35V	•	1.2	A	
Ripple Rejection	ΔV _{IN}	f = 120 Hz, ΔV _{IN} = -10V		63	dB	
	ΔV _{OUT}	(Note 3)	•	60	dB	
Output Noise Voltage (Note 3)	N _O	T _A = 25°C, f = 10 Hz to 100KHz		40	μV/V RMS	
Long Term Stability (Note 3)	ΔV _{OUT} Δt	T _A = 25°C, t = 1000 hrs.		75	mV	

ELECTRICAL CHARACTERISTICS -12 Volt $V_{IN} = -19V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions		Min.	Max.	Unit
Output Voltage	V _{OUT}	T _A = 25°C		-11.88	-12.12	V
		V _{IN} = -14.5V to -27V	•	-11.64	-12.36	V
Line Regulation (Note 1)	V _{RLINE}	V _{IN} = -14.5V to -27V	•		20	mV
			•		50	mV
		V _{IN} = -16V to -22V	•		10	mV
Load Regulation (Note 1)	V _{RLOAD}	I _O = 5mA to 1.5 Amp	•		32	mV
			•		60	mV
		I _O = 250mA to 750 mA	•		16	mV
Standby Current Drain	I _{SCD}		•		3.5	mA
			•		4.0	mA
Standby Current Drain Change With Line	ΔI _{SCD} (Line)	V _{IN} = -14.5V to -27V	•		0.8	mA
Standby Current Drain Change With Load	ΔI _{SCD} (Load)	I _O = 5mA to 1000mA	•		0.5	mA
Dropout Voltage	V _{DO}	ΔV _{OUT} = 100mV, I _O = 1.0A	•		1.8	V
Peak Output Current	I _{O (pk)}	T _A = 25°C, I _O = 5mA to 1A		1.5	3.3	A
Short Circuit Current (Note 2)	I _{DS}	V _{IN} = -35V			1.2	A
			•		2.8	A
Ripple Rejection	ΔV _{IN}	f = 120 Hz, ΔV _{IN} = -10V		56		dB
	ΔV _{OUT}	(Note 3)	•	53		dB
Output Noise Voltage (Note 3)	N _O	T _A = 25°C, f = 10 Hz to 100KHz			40	μV/V RMS
Long Term Stability (Note 3)	ΔV _{OUT} Δt	T _A = 25°C, t = 1000 hrs.			120	mV

Notes:

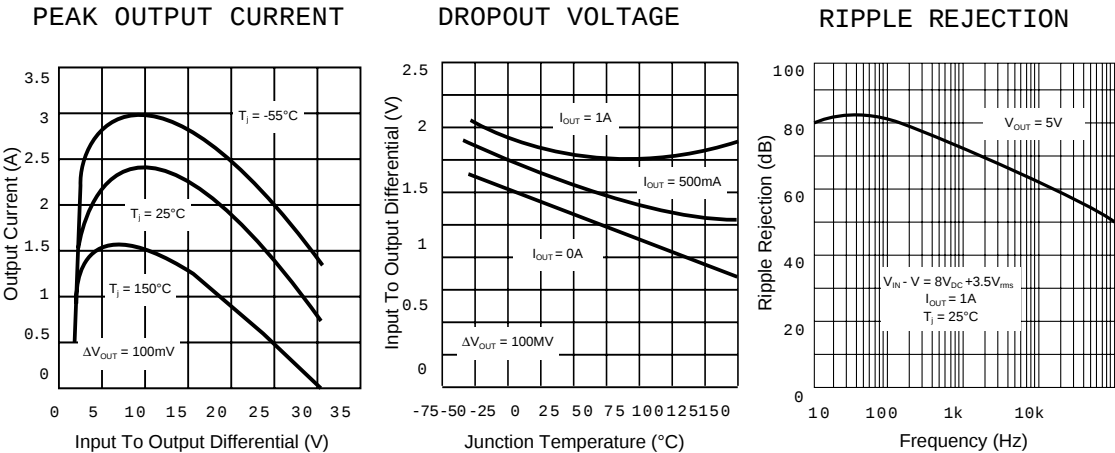
1. Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
2. Short Circuit protection is only assured up to $V_{IN} = -35V$.
3. If not tested, shall be guaranteed to the specified limits.
The • denotes the specifications which apply over the full operating temperature range.

ELECTRICAL CHARACTERISTICS -15 Volt $V_{IN} = -23V, I_O = 500mA, -55^{\circ}C \leq T_A \leq 125^{\circ}C$ (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	V_{OUT}	$T_A = 25^{\circ}C$	-14.85	-15.15	V
		$V_{IN} = -17.5V$ to $-30V$	•	-14.55	V
Line Regulation (Note 1)	V_{RLINE}	$V_{IN} = -17.5V$ to $-30V$	•	25	mV
			•	50	mV
		$V_{IN} = -20V$ to $-26V$	•	15	mV
Load Regulation (Note 1)	V_{RLOAD}	$I_O = 5mA$ to 1.5 Amp	•	35	mV
			•	75	mV
		$I_O = 250mA$ to 750 mA	•	21	mV
Standby Current Drain	I_{SCD}		•	6.0	mA
			•	6.5	mA
Standby Current Drain Change With Line	ΔI_{SCD} (Line)	$V_{IN} = -17.5V$ to $-30V$	•	0.8	mA
Standby Current Drain Change With Load	ΔI_{SCD} (Load)	$I_O = 5mA$ to $1000mA$	•	0.5	mA
Dropout Voltage	V_{DO}	$\Delta V_{OUT} = 100mV, I_O = 1.0A$	•	2.5	V
Peak Output Current	$I_{O(pk)}$	$T_A = 25^{\circ}C$	1.5	3.3	A
Short Circuit Current (Note 2)	I_{DS}	$V_{IN} = -35V$	•	1.2	A
			•	2.8	A
Ripple Rejection	$\frac{\Delta V_{IN}}{\Delta V_{OUT}}$ (Note 3)	$f = 120$ Hz, $\Delta V_{IN} = -10V$	53		dB
		(Note 3)	•	50	dB
Output Noise Voltage (Note 3)	N_O	$T_A = 25^{\circ}C, f = 10$ Hz to $100KHz$		40	$\mu V/V$ RMS
Long Term Stability (Note 3)	$\frac{\Delta V_{OUT}}{\Delta t}$	$T_A = 25^{\circ}C, t = 1000$ hrs.		150	mV

- Notes:**
- 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.
 - 2. Short Circuit protection is only assured up to $V_{IN} = -35V$.
 - 3. If not tested, shall be guaranteed to the specified limits.
- The • denotes the specifications which apply over the full operating temperature range.

TYPICAL PERFORMANCE CHARACTERISTICS

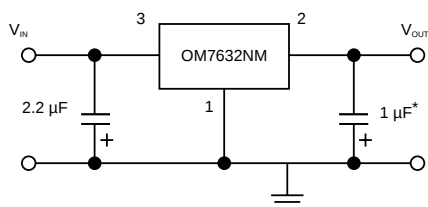


TYPICAL PERFORMANCE CHARACTERISTICS

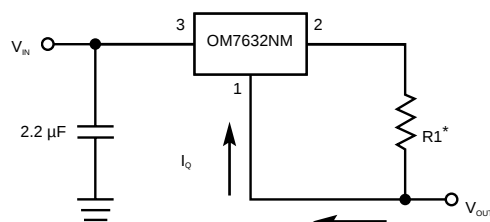
Input bypass capacitors are recommended for stable operation of the OM7632NM series of regulators over the input voltage and output current ranges. Output bypass capacitors will improve the transient response of the regulator.

The bypass capacitors, ($2.2\mu\text{F}$ on the input, $1\mu\text{F}$ on the output) should be ceramic or solid tantalum which have good high frequency characteristics. If aluminum electrolytics are used, their values should be $10\mu\text{F}$ or larger. The bypass capacitors should be mounted with the shortest leads and, if possible, directly across the regulator terminals.

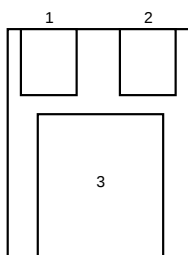
FIXED OUTPUT REGULATOR



BASIC CURRENT REGULATOR

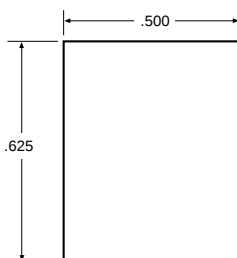


PIN CONNECTION

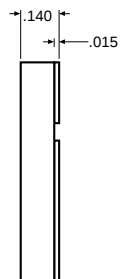


Pin 1: Ground
Pin 2: Out
Pin 3: In

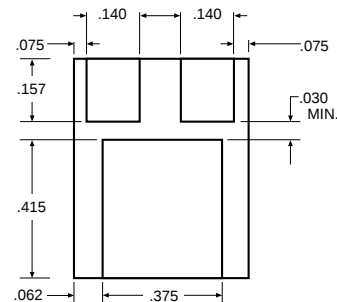
MECHANICAL OUTLINE



TOP VIEW



SIDE VIEW



BOTTOM VIEW