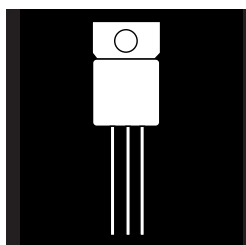


ISOLATED HERMETIC TO-257AA ADJUSTABLE VOLTAGE REGULATOR



**Three Terminal, Adjustable Voltage, 1.5 Amp
Precision Negative Regulator In Hermetic
JEDEC TO-257AA Package**

FEATURES

- Isolated Hermetic Package, JEDEC TO-257AA Outline
- Adjustable Output Voltage
- Eliminates Stocking Fixed Voltages
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Screened To MIL-STD -883
- Similar To Industry Standard P/N LM137

DESCRIPTION

This three terminal negative regulator is supplied in a hermetically sealed metal package whose outline is similar to the industry standard TO-220 plastic 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 1.0 amp of output current. This unit features output voltages that can be trimmed using external resistors, from -1.2 volts to -37 volts.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Input-Output Voltage Differential 40V

Operating Junction Temperature Range -55°C to +150°C

Storage Temperature Range -65° 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

3.3

Note: This device is also available in a non-isolated JEDEC TO-257AA package.
Use part number OM7603NT for non-isolated unit.

ELECTRICAL CHARACTERISTICS -55°C T_A 125°C, $I_L = 8\text{mA}$ (unless otherwise specified)

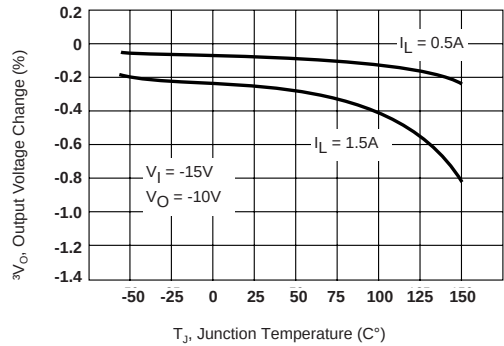
Parameter	Symbol	Test Conditions		Min.	Max.	Unit
Reference Voltage	V_{REF}	$V_{DIFF} = 3.0\text{V}$, $T_A = 25^\circ\text{C}$ $V_{DIFF} = 3.0\text{V}$ $V_{DIFF} = 40\text{V}$	• •	-1.262 -1.280 -1.280	-1.238 -1.220 -1.220	V
Line Regulation (Note 1)	R_{LINE}	3.0 V V_{DIFF} 40V, $T_A = 25^\circ\text{C}$ 3.0V V_{DIFF} 40V	•	-4.5 -13.8	4.5 13.8	mV
Load Regulation (Note 1)	R_{LOAD}	$V_{DIFF} = 5\text{V}$, 8mA I_L 1.5A $V_{DIFF} = 12\text{V}$, 8mA I_L 1.5A, $T_A = 25^\circ\text{C}$ $V_{DIFF} = 40\text{V}$, 8mA I_L 1.5A, $T_A = 25^\circ\text{C}$ $V_{DIFF} = 40\text{V}$, 8mA I_L 1.5A	• • •	-25 -25 -25 -50	25 25 25 50	mV
Thermal Regulation	V_{RTH}	$V_{in} = -14.6\text{V}$, $I_L = 1.5\text{A}$ $P_d = 20\text{ Watts}$, $t = 10\text{ ms}$, $T_A = 25^\circ\text{C}$		-5	5	mV
Ripple Rejection (Note 2)	R_N	$f = 120\text{ Hz}$, $V_{out} = V_{ref}$ $C_{Adj} = 10\text{ }\mu\text{F}$, $I_{out} = 100\text{ mA}$	•	66		dB
Adjustment Pin Current	I_{Adj}	$V_{DIFF} = 3.0\text{V}$ $V_{DIFF} = 40\text{V}$	• •		100 100	μA
Adjustment Pin Current Change	$^3I_{Adj}$ (line)	3V V_{DIFF} 40V	•	-5	5	μA
	$^3I_{Adj}$ (load)	$V_{DIFF} = 5\text{V}$, 8mA I_L 1.5A	•	-5	5	μA
Mimumum Load Current	I_{Lmin}	$V_{DIFF} = 3.0\text{V}$, $V_{out} = -1.4\text{V}$ (forced) $V_{DIFF} = 10\text{V}$, $V_{out} = -1.4\text{V}$ (forced) $V_{DIFF} = 40\text{V}$, $V_{out} = -1.4\text{V}$ (forced)	• • •		3.0 3.0 5.0	mA
Current Limit (Note 2)	I_{CL}	$V_{DIFF} = 5\text{V}$ $V_{DIFF} = 40\text{V}$, $T_A = 25^\circ\text{C}$	•	1.5 0.24	3.5 1.2	A

Notes:

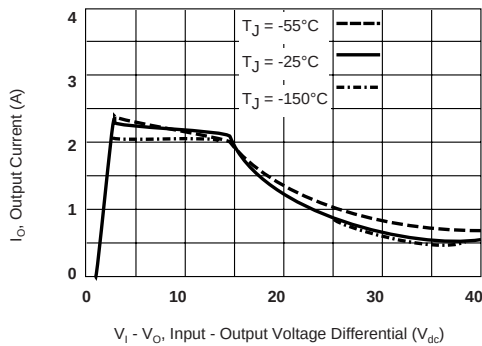
1. Load and Line Regulation are specified at a constant junction temperature. Pulse testing with low duty cycle is used. Changes in output voltage due to heating effects must be taken into account separately.
2. If not tested, shall be guaranteed to the specified limits.
3. The • denotes the specifications which apply over the full operating temperature range.

TYPICAL PERFORMANCE APPLICATIONS

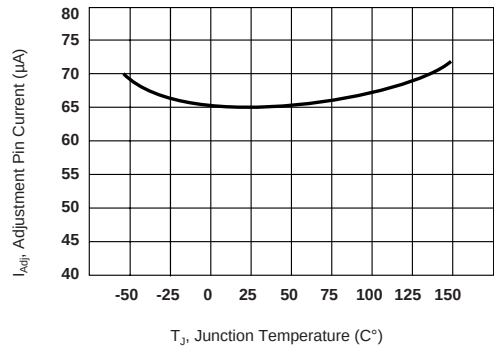
LOAD REGULATION



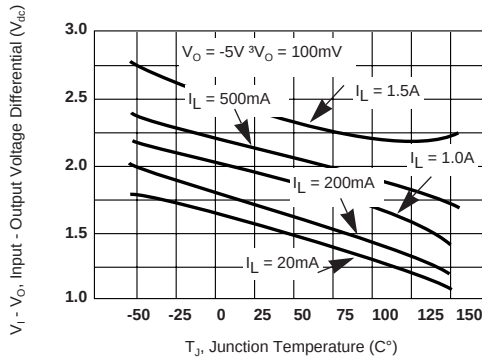
CURRENT LIMIT



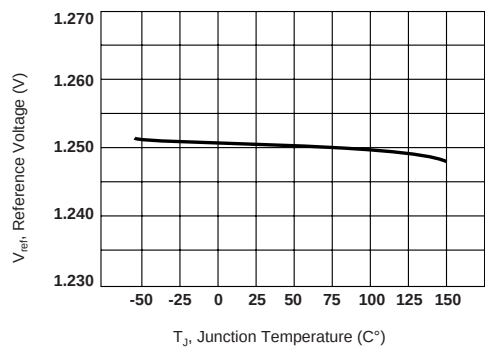
ADJUSTMENT PIN CURRENT



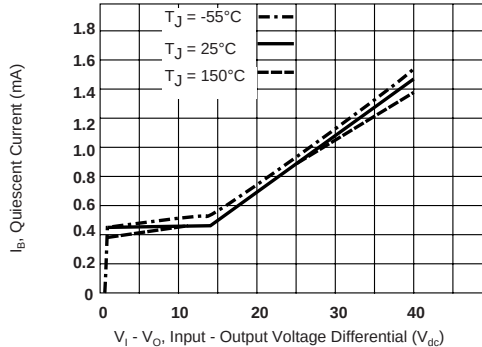
DROPOUT VOLTAGE



TEMPERATURE STABILITY

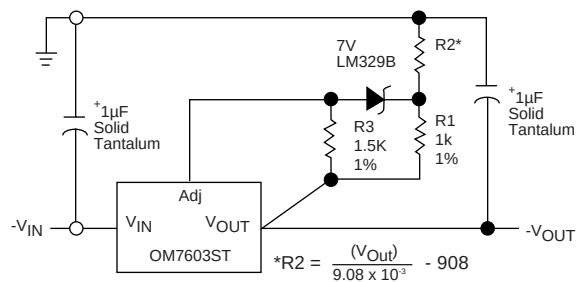


MINIMUM OPERATING CURRENT

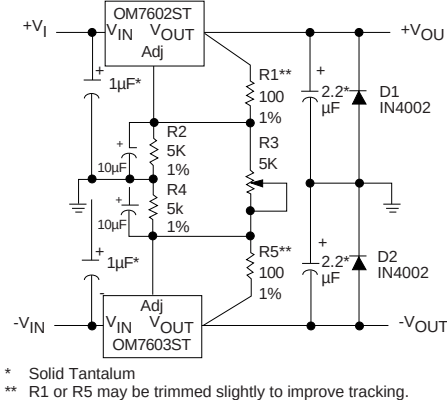


TYPICAL APPLICATIONS

HIGH STABILITY REGULATOR



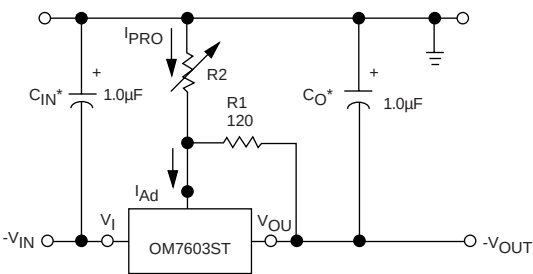
DUAL TRACKING SUPPLY ±1.25V TO ±20V



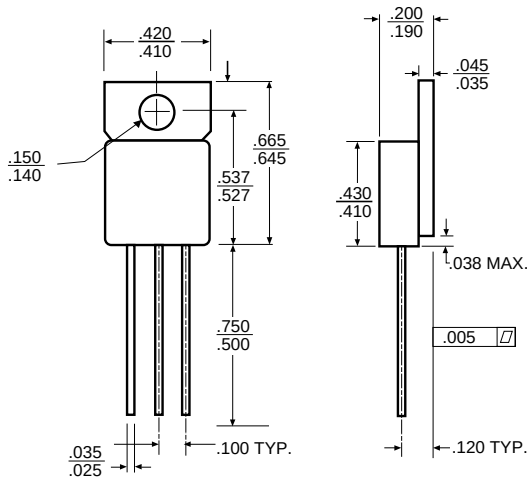
STANDARD APPLICATION

- * C_{IN} is required if regulator is located more than 4 inches from power supply filter. A 1µF solid tantalum or 10µF aluminum electrolytic is recommended.
- ** C_O is necessary for stability. A 1µF solid tantalum or 10µF aluminum electrolytic is recommended.

$V_{OUT} = -1.25V (1 + \frac{R2}{R1})$



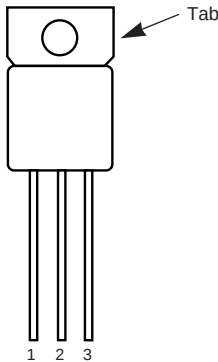
MECHANICAL OUTLINE



NOTES

- Case is metal/hermetically sealed
- Isolated Tab

PIN CONNECTION



ISOLATED	NON-ISOLATED
Front View	Front View
Pin 1: Adjust	Pin 1: Adjust
Pin 2: Input	Pin 2: Input
Pin 3: Output	Pin 3: Output
Tab: Isolated	Tab: Input