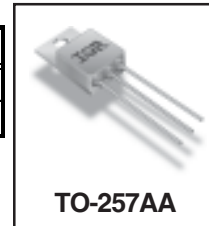


**Adjustable Positive Linear Regulator  
 Thru-Hole (TO-257AA)**

**OM7602ST  
 OM7602NT  
 1.5A**

**Product Summary**

Part Number	Input Voltage Range	Adjustable Output Voltage	Package
OM7602ST	4.25V to 41.25V	1.2V to 37V	TO-257 (Isolated)
OM7602NT	4.25V to 41.25V	1.2V to 37V	TO-257 (Non-Isolated)



**Description**

This three terminal positive regulator is supplied in a hermetically sealed metal package. All protective features are designed into the circuit, including thermal shutdown, current-limiting, and safe-area control. With heat sinking, these devices can deliver up to 1.5 amps of output current. This unit also features output voltages that can be trimmed from 1.2 volt to 37 volts using external resistors.

**Features:**

- Adjustable Output Voltage
- Eliminates Stocking Fixed Voltages
- Built-In Thermal Oveload Protection
- Short Circuit Current Limiting
- Isolated / Non-Isolated Hermetic TO-257AA Package ensures High Reliability

**Absolute Maximum Ratings @ T<sub>c</sub> = 25°C**

Parameter	Symbol	Value	Units
Input-Output Voltage Differential	V <sub>I-O</sub>	40	V
Input Voltage Range	V <sub>IN</sub>	4.25 to 41.25	
Output Voltage Range	V <sub>OUT</sub>	1.2 to 37	
Output Current	I <sub>OUT</sub>	1.5	A
Power Dissipation @ T <sub>C</sub> = 86°C	P <sub>DC</sub>	17.5	W
Power Dissipation @ T <sub>A</sub> = 25°C	P <sub>DA</sub>	3.0	
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	3.5	°C/W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	42	
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	
Lead Temperature Soldering (10 seconds maximum)	T <sub>L</sub>	300	

**Electrical Characteristics -55°C ≤ T<sub>A</sub> ≤ 125°C, I<sub>L</sub> = 8.0mA (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min.	Max.	Units
Reference Voltage	V <sub>REF</sub>	V <sub>DIFF</sub> = 3.0V, T <sub>A</sub> = 25°C	1.2	1.3	V
		V <sub>DIFF</sub> = 3.3V ③	1.2	1.3	
		V <sub>DIFF</sub> = 40V ③	1.2	1.3	
Line Regulation ①	R <sub>LINE</sub>	3.0V ≤ V <sub>DIFF</sub> ≤ 40V, V <sub>OUT</sub> = V <sub>REF</sub> , T <sub>A</sub> = 25°C	-9.0	9.0	mV
		3.3V ≤ V <sub>DIFF</sub> ≤ 40V, V <sub>OUT</sub> = V <sub>REF</sub> ③	-23	23	
Load Regulation ①	R <sub>LOAD</sub>	V <sub>DIFF</sub> = 3.0V, 10mA ≤ I <sub>L</sub> ≤ 1.5A, T <sub>A</sub> = 25°C	-15	15	
		V <sub>DIFF</sub> = 3.3V, 10mA ≤ I <sub>L</sub> ≤ 1.5A ③	-15	15	
		V <sub>DIFF</sub> = 40V, 10mA ≤ I <sub>L</sub> ≤ 300mA, T <sub>A</sub> = 25°C	-15	15	
		V <sub>DIFF</sub> = 40V, 10mA ≤ I <sub>L</sub> ≤ 195mA ③	-15	15	
Thermal Regulation	V <sub>RTH</sub>	V <sub>IN</sub> = 14.6V, I <sub>L</sub> = 1.5A, P <sub>D</sub> = 20W, t = 20ms, T <sub>A</sub> = 25°C	-16	16	
Ripple Rejection ②	R <sub>N</sub>	f = 120Hz, V <sub>OUT</sub> = V <sub>REF</sub> , C <sub>ADJ</sub> = 10μF ③	66	-	dB
Adjustment Pin Current	I <sub>ADJ</sub>	V <sub>DIFF</sub> = 3.0V, T <sub>A</sub> = 25°C	-	100	μA
		V <sub>DIFF</sub> = 3.3V ③	-	100	
		V <sub>DIFF</sub> = 40V ③	-	100	
Adjustment Pin Current Change	ΔI <sub>ADJ</sub>	V <sub>DIFF</sub> = 3.0V, 10mA ≤ I <sub>L</sub> ≤ 1.5A, T <sub>A</sub> = 25°C	-5.0	5.0	
		V <sub>DIFF</sub> = 3.3V, 10mA ≤ I <sub>L</sub> ≤ 1.5A ③	-5.0	5.0	
		V <sub>DIFF</sub> = 40V, 10mA ≤ I <sub>L</sub> ≤ 300mA, T <sub>A</sub> = 25°C	-5.0	5.0	
		V <sub>DIFF</sub> = 40V, 10mA ≤ I <sub>L</sub> ≤ 195mA ③	-5.0	5.0	
		3.0V ≤ V <sub>DIFF</sub> ≤ 40V, T <sub>A</sub> = 25°C	-5.0	5.0	
Minimum Load Current	I <sub>LMIN</sub>	V <sub>DIFF</sub> = 3.0V, V <sub>OUT</sub> = 1.4V (forced), T <sub>A</sub> = 25°C	-	5.0	
		V <sub>DIFF</sub> = 3.3V, V <sub>OUT</sub> = 1.4V (forced) ③	-	5.0	
		V <sub>DIFF</sub> = 40V, V <sub>OUT</sub> = 1.4V (forced) ③	-	5.0	
Current Limit ②	I <sub>CL</sub>	V <sub>DIFF</sub> = 15V ③	1.5	3.5	A
		V <sub>DIFF</sub> = 40V, T <sub>A</sub> = 25°C	0.18	1.5	

**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 specific limits.
- ③ The specifications are applied over the full operating temperature range.

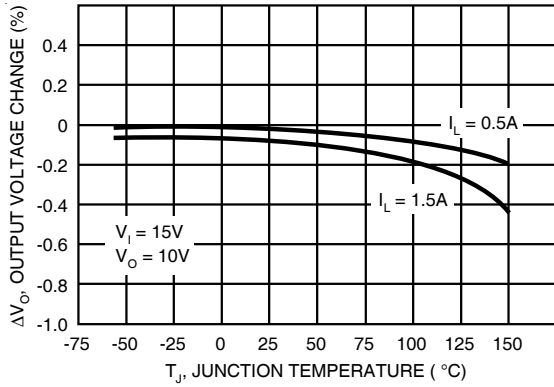


Fig. 1 Load Regulation

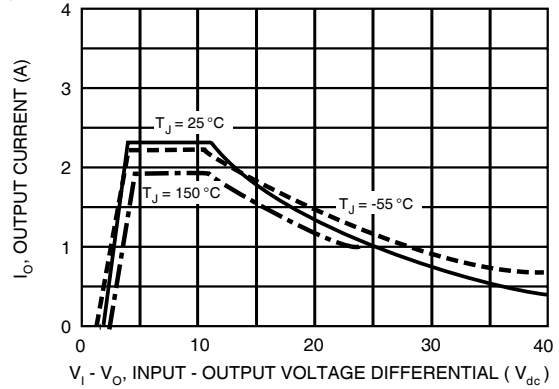


Fig. 2 Current Limit

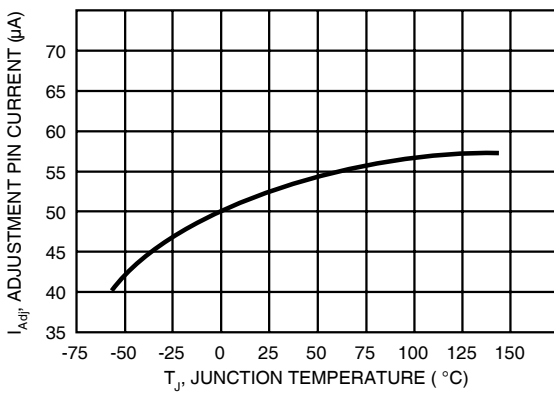


Fig. 3 Adjustment Pin Current

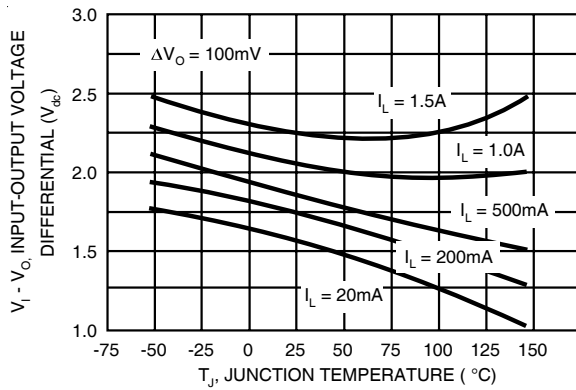


Fig. 4 Dropout Voltage

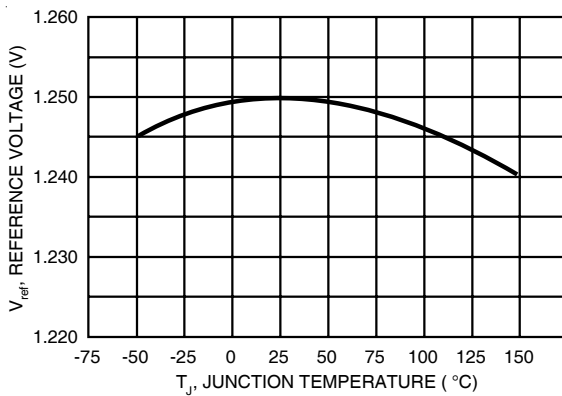


Fig. 5 Temperature Stability

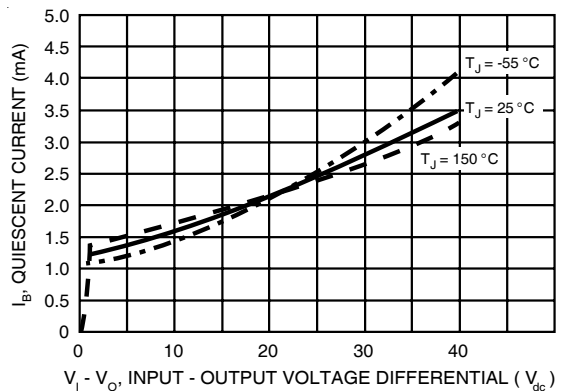
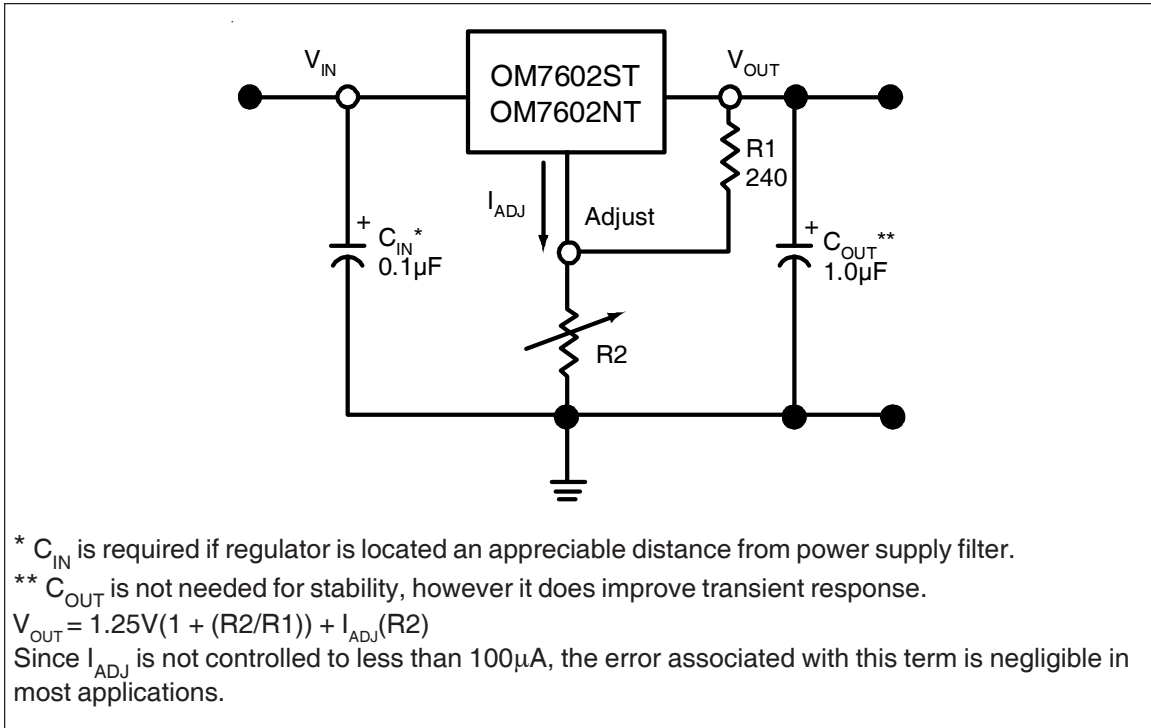


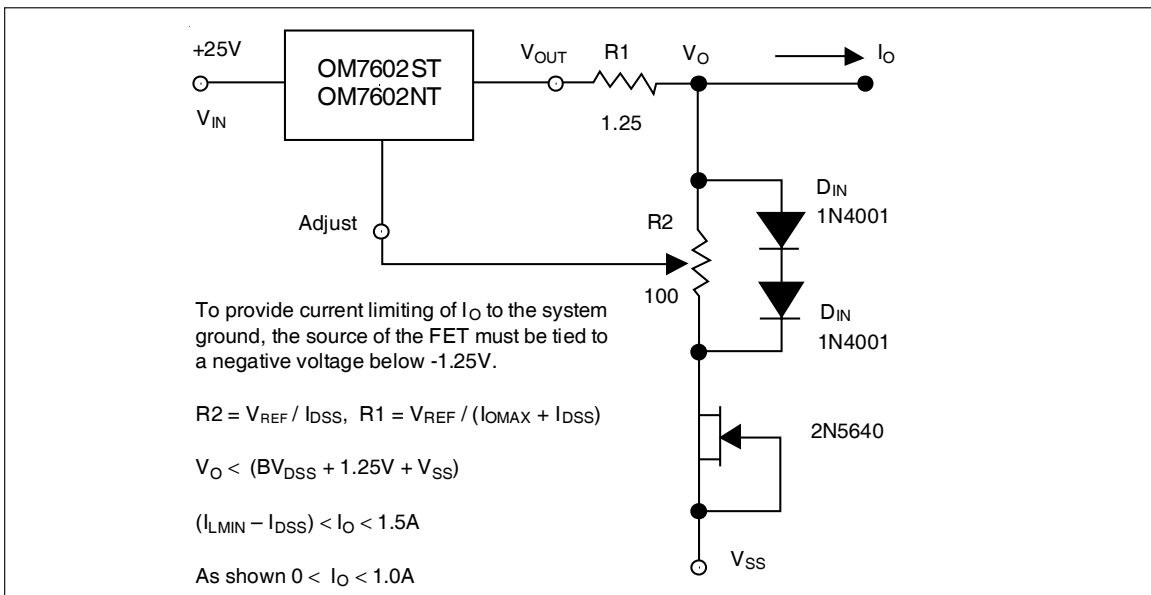
Fig. 6 Minimum Operating Current

Fig. 7 - Standard Application

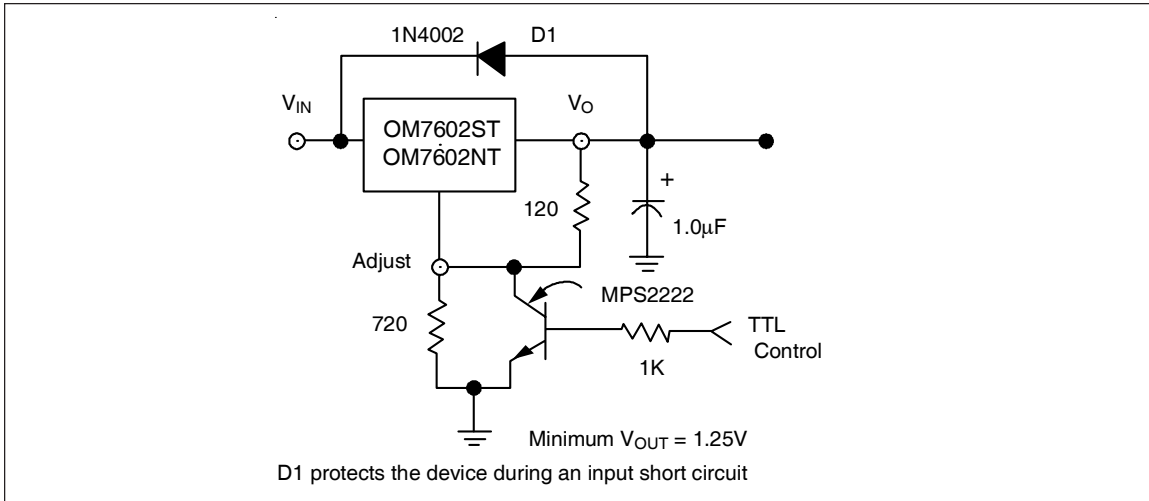


Typical Applications

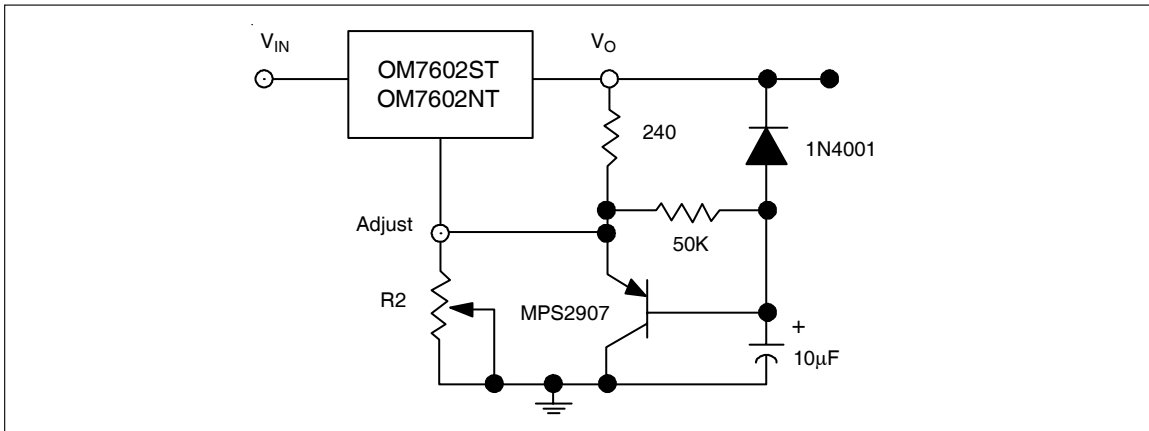
Fig. 8 Adjustable Current Limiter



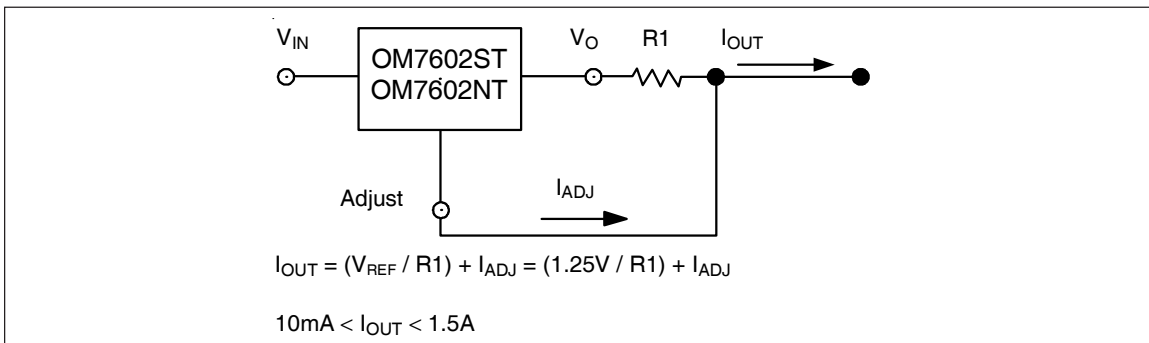
**Fig. 9 5V Electronic Shut Down Regulator**



**Fig. 10 Slow Turn-On Regulator**



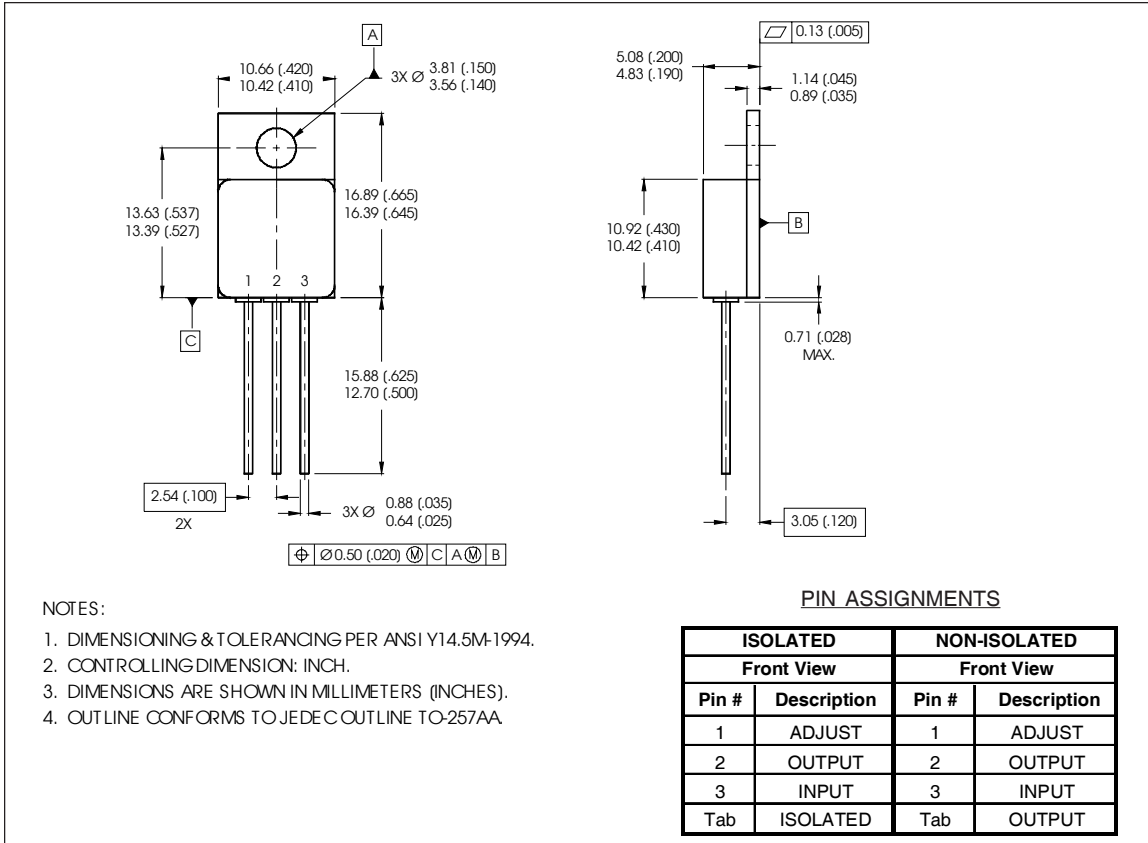
**Fig. 11 Current Regulator**



**OM7602ST, OM7602NT**

International  
**IOR** Rectifier

**Case Outline and Dimensions — TO-257AA**



**Part Numbering Nomenclature**

**OM 7602 S/N T M**

Device Number

**Screening**

M = MIL-PRF-38535  
P = Minimal Screening

**Package Code**

T = TO-257AA

**Isolated / Non-Isolated**

S = Isolated  
N = Non-Isolated

International  
**IOR** Rectifier

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*Data and specifications subject to change without notice.10/2006*

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