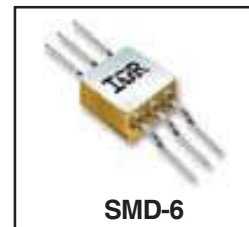


**Ultra Low Dropout, 3.0A  
 Adjustable Positive Linear Regulator  
 Surface Mount (SMD-6)**

**OM7764ASM  
 5962 - 0323801MXA**

**Product Summary**

Part Number	Output Voltage	Current	Dropout
OM7764ASM	1.21V to 20V	3.0A	0.4V



**Description**

The OM7764ASM is a 3.0A, ultra low dropout, adjustable linear regulator specifically designed for low voltage, high current applications. Housed in a hermetic package, the dropout of these devices is 400mV at full load. All protective features are designed into the circuit including thermal shutdown, current limiting and safe area control. These units are ideally suited for military/defense, commercial aircraft, industrial control and other harsh environments where a hermetically sealed package is required.

**Features:**

- Dropout Voltage of 400mV at Full Load
- Wide Input Range: 2.7V to 20V
- Low Noise: 40mVRMS ( 10Hz to 10KHz )
- Fast Transient Response
- No Protection Diodes needed
- Hermetic SMD-6 Package ensures High Reliability

**Absolute Maximum Ratings**

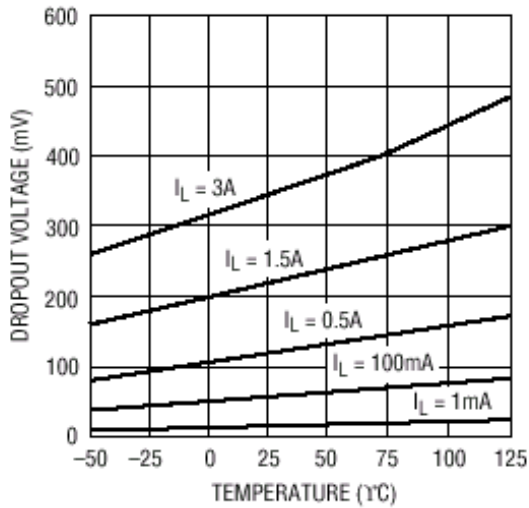
Parameter	Symbol	Value	Units
Output Current	$I_O$	3.0	A
Input Voltage	$V_{IN}$	+20	V
Power Dissipation @ $T_c = 25^\circ\text{C}$	$P_D$	20	W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5.0	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +150	
Lead Temperature Soldering (10second maximum)	$T_L$	300	

**Electrical Characteristics @T<sub>A</sub> = 25°C (Unless Otherwise Specified)**

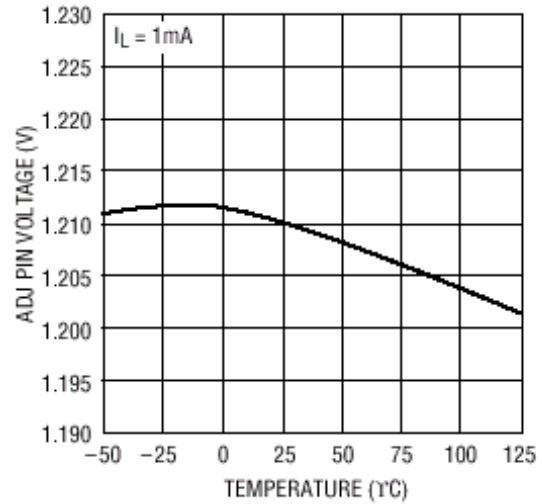
Parameter	Test Conditions	Min.	Typ.	Max.	Units
Minimum Input voltage	I <sub>LOAD</sub> = 3.0A ①	-	2.3	2.7	V
Line Regulation	ΔV <sub>IN</sub> = 2.21V to 20V, I <sub>LOAD</sub> = 1.0mA ①②	-	2.0	10	mV
Load Regulation	V <sub>IN</sub> = 2.7V, I <sub>LOAD</sub> = 1.0mA to 3.0A	-	5.0	15	
	V <sub>IN</sub> = 2.7V, I <sub>LOAD</sub> = 1.0mA to 3.0A ①②	-	-	50	
Adjust Pin Voltage	V <sub>IN</sub> = 2.21V, I <sub>LOAD</sub> = 1.0mA	1.192	1.210	1.228	V
	2.7V < V <sub>IN</sub> < 20V, 1.0mA < I <sub>LOAD</sub> < 3.0A ①	1.168	1.210	1.246	
Dropout Voltage	I <sub>LOAD</sub> = 1.0mA	-	0.02	0.05	
	I <sub>LOAD</sub> = 1.0mA ①	-	-	0.10	
	I <sub>LOAD</sub> = 100mA	-	0.07	0.13	
	I <sub>LOAD</sub> = 100mA ①	-	-	0.18	
	I <sub>LOAD</sub> = 500mA	-	0.14	0.20	
	I <sub>LOAD</sub> = 500mA ①	-	-	0.27	
	I <sub>LOAD</sub> = 1.5mA	-	0.25	0.33	
	I <sub>LOAD</sub> = 1.5mA ①	-	-	0.40	
	I <sub>LOAD</sub> = 3.0A	-	0.4	0.54	
	I <sub>LOAD</sub> = 3.0A ①	-	-	0.66	
Ground Pin Current V <sub>IN</sub> = V <sub>OUT</sub> (Nominal)+1	I <sub>LOAD</sub> = 0mA ①	-	1.0	1.5	mA
	I <sub>LOAD</sub> = 1.0mA ①	-	1.1	1.6	
	I <sub>LOAD</sub> = 100mA ①	-	3.5	5.0	
	I <sub>LOAD</sub> = 500mA ①	-	11	18	
	I <sub>LOAD</sub> = 1.5A ①	-	40	75	
	I <sub>LOAD</sub> = 3.0A ①	-	120	200	
Ripple Rejection	V <sub>IN</sub> - V <sub>OUT</sub> = 1.5V(Average), V <sub>RIPPLE</sub> = 0.5 V <sub>P-P</sub> f <sub>RIPPLE</sub> = 120Hz, I <sub>LOAD</sub> = 1.5A, T <sub>J</sub> = +25°C	55	65	-	dB
Current Limit	V <sub>IN</sub> = 2.7V, ΔV <sub>OUT</sub> = -0.1V ①	3.1	-	-	A
Input Reverse Leakage Current	V <sub>IN</sub> = -20V, V <sub>OUT</sub> = 0V ①	-	-	1.0	mA
Reverse Output Current	V <sub>OUT</sub> = 1.21V, V <sub>IN</sub> < 1.21V ①	-	300	600	μA

**Footnotes**

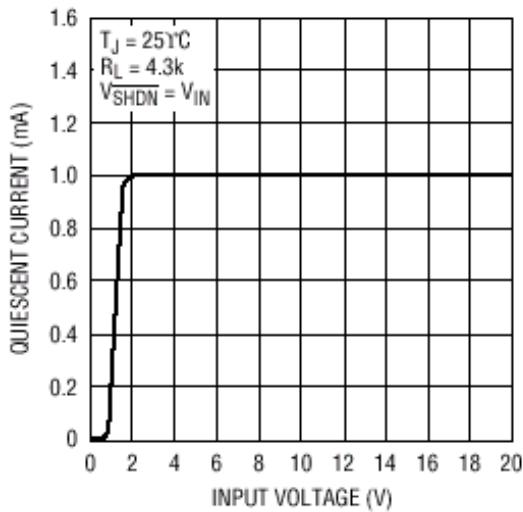
- ①- Denotes specifications which apply over the full operating temperature range.  
 ②- The OM7764ASM is tested and specified for these conditions with the ADJ pin connected to the OUT pin.



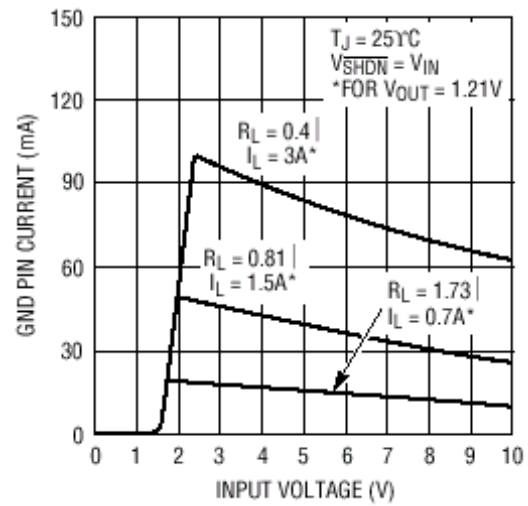
**Fig 1:** Dropout Voltage Vs Temperature



**Fig 2:** Adjust Pin Voltage Vs Temperature



**Fig 3:** Quiescent Current Vs Input Voltage



**Fig 4:** Ground Pin Current Vs Input Voltage

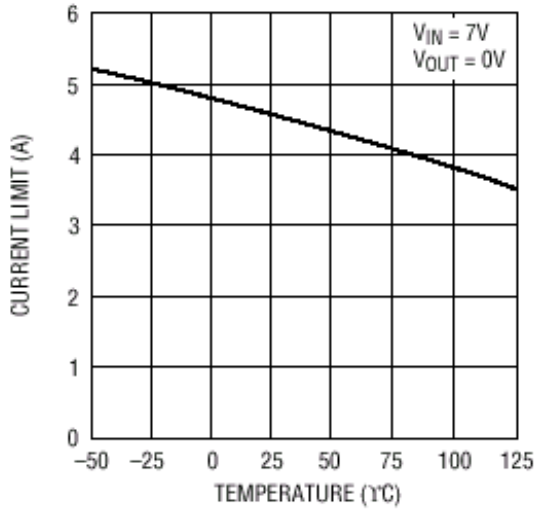
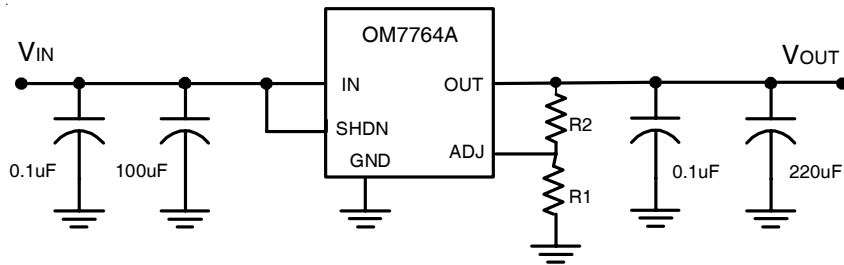


Fig 5: Current Limit Vs Temperature



$$V_{OUT} = 1.21V(1 + (R2/R1)) + I_{ADJ}(R2)$$

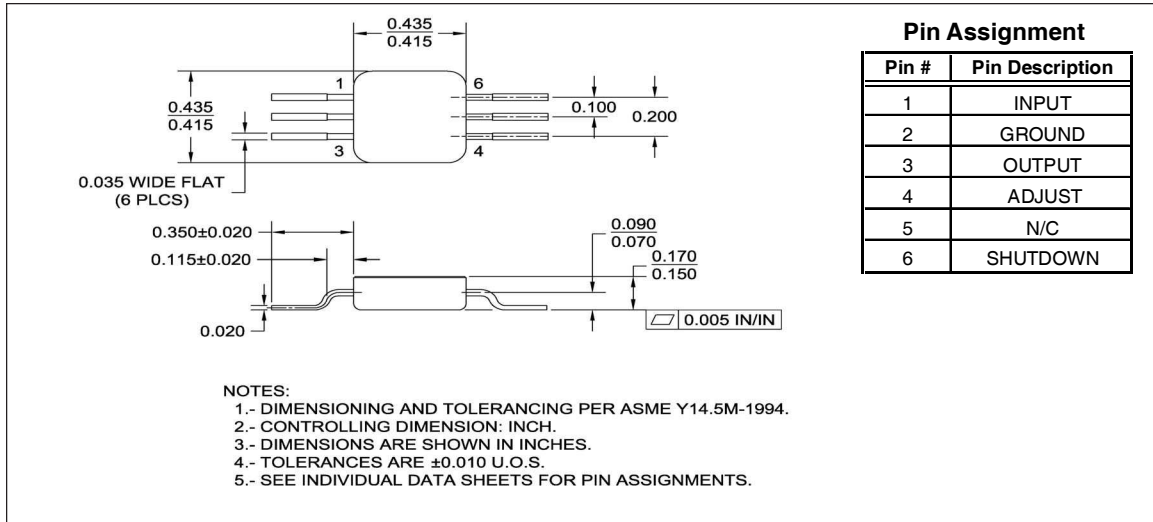
$$I_{ADJ} = 3.0\mu A @ 25^{\circ}C$$

Fig 6: Typical Application

**Layout Consideration**

It is recommended that output capacitors be located as close as possible to the  $V_{OUT}$  terminal of the device to prevent any high frequency oscillation that may result due to excessive stray inductance. Specifications for capacitors: 220µF (+25V) Tantalum, 100µF (+25V) Tantalum, 0.1µF (+50V) Ceramic

**Case Outline and Dimensions — SMD-6**



**Part Numbering Nomenclature**

**OM 7764A S M M**

