

SURFACE MOUNT NEGATIVE ADJUSTABLE 3.0 AMP VOLTAGE REGULATOR



**Isolated Hermetic Surface Mount Package
3.0 Amp, Negative Adjustable Voltage
Regulator**

FEATURES

- Isolated Hermetic Surface Mount Package
- Reference Voltage Set Internally To $\pm 2\%$ ($\pm 1\%$ Available)
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Small Metal Package
- Product Is Available Hi-Rel Screened

DESCRIPTION

These three terminal negative regulators are supplied in a hermetic metal 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 3.0 amps of output current. These units feature 2% initial voltage tolerance, with 1.0% load regulation and .015% line regulation.

ABSOLUTE MAXIMUM RATINGS

Input to Output Voltage Differential	-35V
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	28W
T _A	3W
Thermal Resistance:	
θ_{JC}	4.2°C/W
θ_{JA}	42°C/W
Lead Temperature at Case (5 sec)	225°C

3.5

Note: For $\pm 1\%$ device, add letter "A" in front of part number (e.g. OMA7638SM).



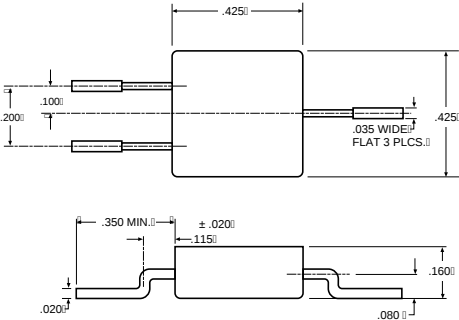
ELECTRICAL CHARACTERISTICS -55°C ≤ T_A ≤ +125°C (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Reference Voltage	V _{REF}	V _{IN} - V _{OUT} = 5 V, I _{OUT} = 5 mA, T _A = 25° C	-1.238	-1.262	V
		3 V ≤ V _{IN} - V _{OUT} ≤ 35 V	• -1.215	-1.285	
Line Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta V_{IN}}$	3 V ≤ V _{IN} - V _{OUT} ≤ 35 V		0.015	%V
			•	0.04	
Load Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	V _{OUT} ≤ 5 V, T _A = 25° C 10 mA ≤ I _{OUT} ≤ I _{MAX.}		50	mV
			•	75	
		V _{OUT} ≥ 5.0 V 10 mA ≤ I _{OUT} ≤ I _{MAX.}		1.0	%
			•	1.5	
Thermal Regulation	-	30 ms pulse, T _A = 25° C		0.02	%/W
Ripple Rejection (Note 2)	$\frac{\Delta V_{IN}}{\Delta V_{REF}}$	V _{OUT} = -10 V, f = 120 Hz, C _{Adj} = 0		56	dB
			•	53	
		V _{OUT} = -10 V, f = 120 Hz, C _{Adj} = 10 μF		70	dB
			•	60	
Adjust Pin Current	I _{Adj}	V _{DIFF} = 35 V, I _L = 10 mA	•	100	μA
Adjust Pin Current Change	ΔI _{Adj}	10 mA ≤ I _{OUT} ≤ I _{MAX.}	•	2.0	μA
		3 V ≤ V _{IN} - V _{OUT} ≤ 35 V	•	5.0	
Minimum Load Current	I _{Min}	V _{IN} - V _{OUT} ≤ 35 V	•	5.0	mA
		V _{IN} - V _{OUT} ≤ 10 V	•	3.0	
Current Limit	I _{Lim}	V _{IN} - V _{OUT} ≤ 10 V		3.0	A
			•	3.0	
		V _{IN} - V _{OUT} = 35 V		0.5	A
			•	0.5	
Temperature Stability (Note 2)	$\frac{\Delta V_{OUT}}{\Delta T}$	-55° C ≤ T _J ≤ +125° C	•	1.5	%
Long Term Stability (Note 2)	$\frac{\Delta V_{OUT}}{\Delta T}$	T _A = +125° C, t = 1000 hrs		1.0	%

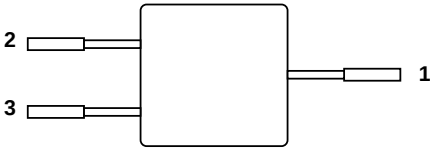
Notes:

1. Line and Load Regulation are measured at a constant junction temperature using a low duty cycle pulse technique. Although power dissipation is internally limited, regulation is guaranteed up to the maximum power dissipation of 30 W. Power dissipation is determined by the input/output differential voltage and the output current. Guaranteed maximum power dissipation will not be available over the full input/output voltage range.
2. Guaranteed by design, characterization or correlation to other tested parameters.
3. The • denotes the specifications which apply over the full operating temperature range.

MECHANICAL OUTLINE



PIN CONNECTION



Pin 1: V_{IN}
Pin 2: Adjust
Pin 3: V_{OUT}
Case: Isolated