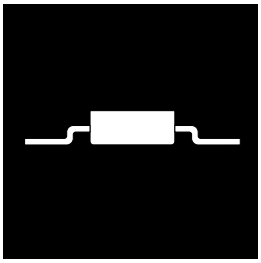
SURFACE MOUNT NEGATIVE ADJUSTABLE 3.0 AMP VOLTAGE REGULATOR



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

FEATURES

- Isolated Hermetic Surface Mount Package
- Reference Voltage Set Internally To ±2% (±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 ±1% device, add letter “A” in front of part number (e.g. OMA7638SM).

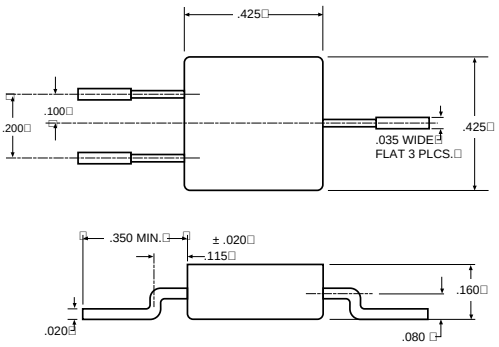
ELECTRICAL CHARACTERISTICS -55°C ≤ T_A ≤ +125°C (unless otherwise specified)

Parameter	Symbol	Test Conditions		Min.	Max.	Unit
Reference Voltage	V_{REF}	$\lvert V_{IN} - V_{OUT} \rvert$ = 5 V, I_{OUT} = 5 mA, T_A = 25° C		-1.238	-1.262	V
		3 V ≤ $\lvert V_{IN} - V_{OUT} \rvert$ ≤ 35 V	•	-1.215	-1.285	
Line Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta V_{IN}}$	3 V ≤ $\lvert V_{IN} - V_{OUT} \rvert$ ≤ 35 V			0.015	%/V
			•		0.04	
Load Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	$\lvert V_{OUT} \rvert$ ≤ 5 V, T_A = 25° C			50	mV
		10 mA ≤ I_{OUT} ≤ $I_{MAX.}$	•		75	
		$\lvert V_{OUT} \rvert$ ≥ 5.0 V			1.0	%
		10 mA ≤ I_{OUT} ≤ $I_{MAX.}$	•		1.5	
Thermal Regulation	-	30 ms pulse, T_A = 25° C			0.02	%/W
Ripple Rejection (Note 2)	$\frac{\Delta V_{IN}}{\Delta V_{REF}}$	$\lvert V_{OUT} \rvert$ = -10 V, f = 120 Hz, C_{Adj} = 0		56		dB
			•	53		
		$\lvert V_{OUT} \rvert$ = -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 ≤ $\lvert V_{IN} - V_{OUT} \rvert$ ≤ 35 V	•		5.0	
Minimum Load Current	I_{Min}	$\lvert V_{IN} - V_{OUT} \rvert$ ≤ 35 V	•		5.0	mA
		$\lvert V_{IN} - V_{OUT} \rvert$ ≤ 10 V	•		3.0	
Current Limit	I_{Lim}	$\lvert V_{IN} - V_{OUT} \rvert$ ≤ 10 V		3.0	6.0	A
			•	3.0		
		$\lvert V_{IN} - V_{OUT} \rvert$ = 35 V		0.5	2.5	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	%

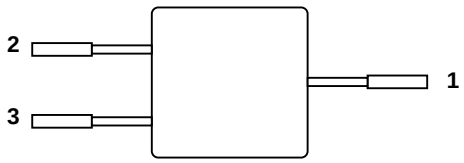
Notes:

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