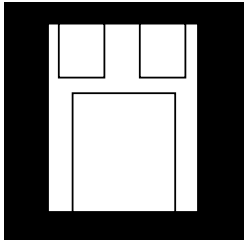


SURFACE MOUNT POSITIVE ADJUSTABLE VOLTAGE REGULATOR



Three Terminal, Adjustable Voltage, 1.0 Amp Precision Positive Regulator In Hermetic Surface Mount Package

FEATURES

- Surface Mount Hermetic Package
- Adjustable Output Voltage
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Hi-Rel Screened
- Electrically Similar To Industry Standard Type LM117

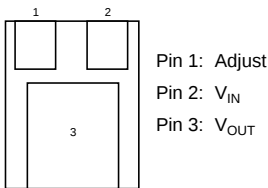
DESCRIPTION

This three terminal negative regulator is supplied in a hermetically sealed 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 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.

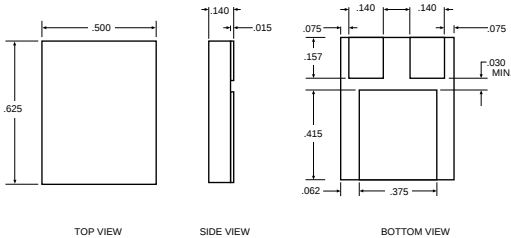
ABSOLUTE MAXIMUM RATINGS

Input to Output Voltage Differential	40 V
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	17.5W
T_A	3W
Thermal Resistance:	
θ_{JC}	3.5°C/W
θ_{JA}	42°C/W
Lead Temperature at Case (5 sec)	225°C

PIN CONNECTION



MECHANICAL OUTLINE



3.5

ELECTRICAL CHARACTERISTICS -55°C ≤ T_A ≤ 125°C, I_L = 8mA (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Reference Voltage	V _{REF}	V _{DIFF} = 3.0V, T _A = 25°C	1.20	1.30	V
		V _{DIFF} = 3.3V	1.20	1.30	
		V _{DIFF} = 40V	1.20	1.30	
Line Regulation (Note 1)	R _{LINE}	3.0V ≤ V _{DIFF} ≤ 40V, V _{out} = V _{ref} , T _A = 25°C	-9	9	mV
		3.3V ≤ V _{DIFF} ≤ 40V, V _{out} = V _{ref}	-23	23	
Load Regulation (Note 1)	R _{LOAD}	V _{DIFF} = 3.0V, 10mA ≤ I _L ≤ 1.5A, T _A = 25°C	-15	15	mV
		V _{DIFF} = 3.3V, 10mA ≤ I _L ≤ 1.5A	-15	15	
		V _{DIFF} = 40V, 10mA ≤ I _L ≤ 300mA, T _A = 25°C	-15	15	
		V _{DIFF} = 40V, 10mA ≤ I _L ≤ 195mA	-15	15	
Thermal Regulation	V _{RTH}	V _{in} = 14.6V, I _L = 1.5A P _d = 20 Watts, t = 20 ms, T _A = 25°C	-16	16	mV
Ripple Rejection (Note 2)	R _N	f = 120 Hz, V _{out} = V _{ref} C _{Adj} = 10 μF, I _{out} = 100 mA	66		dB
Adjustment Pin Current	I _{Adj}	V _{DIFF} = 3.0V, T _A = 25°C		100	μA
		V _{DIFF} = 3.3V		100	
		V _{DIFF} = 40V		100	
Adjustment Pin Current Change	ΔI _{Adj}	V _{DIFF} = 3.0V, 10mA ≤ I _L ≤ 1.5A, T _A = 25°C	-5	5	μA
		V _{DIFF} = 3.3V, 10mA ≤ I _L ≤ 1.5A	-5	5	
		V _{DIFF} = 40V, 10mA ≤ I _L ≤ 300mA, T _A = 25°C	-5	5	
		V _{DIFF} = 40V, 10mA ≤ I _L ≤ 195mA	-5	5	
		3.0V ≤ V _{DIFF} ≤ 40V, T _A = 25°C	-5	5	
		3.3V ≤ V _{DIFF} ≤ 40V	-5	5	
Mimumum Load Current	I _{Lmin}	V _{DIFF} = 3.0V, V _{OUT} = 1.4V (forced)		5.0	mA
		V _{DIFF} = 3.3V, V _{OUT} = 1.4V (forced)		5.0	
		V _{DIFF} = 40V, V _{OUT} = 1.4V (forced)		5.0	
Current Limit (Note 2)	I _{CL}	V _{DIFF} = 15V	1.5	3.5	A
		V _{DIFF} = 40V, T _A = 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 the specified limits.
3. The • denotes the specifications which apply over the full operating temperature range.

STANDARD APPLICATION

* C_{in} is required if regulator is located an appreciable distance from power supply filter.

** C_o is not needed for stability, however it does improve transient response.

$$V_{OUT} = 1.25 V (1 + \frac{R_2}{R_1}) + I_{ADJ} R_2$$

Since I_{ADJ} is controlled to less than 100 μA, the error associated with this term is negligible in most applications.

