SURFACE MOUNT POSITIVE ADJUSTABLE VOLTAGE REGULATOR

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

FEATURES

- Hermetic Surface Mount 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 LM117HV

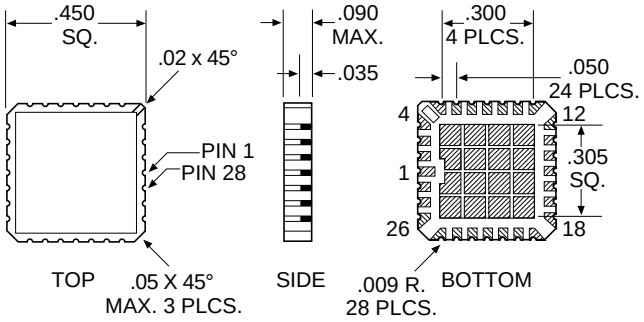
DESCRIPTION

This three terminal positive 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 1.0 amp of output current. This unit features output voltages that can be trimmed using external resistors, from 1.2 volts to 57 volts.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Power Dissipation (P_d) (Internally Limited) . . . . . 10 W
Input - Output Voltage Differential . . . . . 60 V
Operating Junction Temperature Range . . . . . - 55°C to + 150°C
Storage Temperature Range . . . . . - 65°C to + 150°C
Lead Temperature (Soldering 10 Seconds) . . . . . 280°C
Thermal Resistance: Junction-to-Case . . . . . 12°C/W

MECHANICAL OUTLINE



Pin Connection

Pin 1, 15 thru 28:	IN
Pin 2, 3, 13, and 14:	ADJ
Pin 4 thru 12:	OUT

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	
		V_{DIFF} = 60V	•	1.20	1.30	
Line Regulation (Note 1)	R_{LINE}	3.0V ≤ V_{DIFF} ≤ 40V, V_{OUT} = V_{ref}, T_A = 25°C		-12	12	mV
		3.3V ≤ V_{DIFF} ≤ 40V, V_{OUT} = V_{ref}	•	-25	25	
		40V ≤ V_{DIFF} ≤ 60V, V_{OUT} = V_{ref}, T_A = 25°C		-8	8	
		40V ≤ V_{DIFF} ≤ 60V, V_{OUT} = V_{ref}	•	-12	12	
Load Regulation (Note 1)	R_{LOAD}	V_{DIFF} = 3.0V, 10mA ≤ I_L ≤ 1.0A, T_A = 25°C		-20	20	mV
		V_{DIFF} = 3.3V, 10mA ≤ I_L ≤ 1.0A	•	-20	20	
		V_{DIFF} = 40V, 10mA ≤ I_L ≤ 300mA, T_A = 25°C		-20	20	
		V_{DIFF} = 40V, 10mA ≤ I_L ≤ 195mA	•	-20	20	
		V_{DIFF} = 60V, 10mA ≤ I_L ≤ 30mA	•	-20	20	
Thermal Regulation	V_{RTH}	V_{IN} = 14.6V, I_L = 1.0A 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	
		V_{DIFF} = 60V	•		100	
Adjustment Pin Current Change	ΔI_{Adj}	V_{DIFF} = 3.0V, 10mA ≤ I_L ≤ 1.0A, T_A = 25°C		-10	10	µA
		V_{DIFF} = 3.3V, 10mA ≤ I_L ≤ 1.0A	•	-10	10	
		V_{DIFF} = 40V, 10mA ≤ I_L ≤ 300mA, T_A = 25°C		-10	10	
		V_{DIFF} = 40V, 10mA ≤ I_L ≤ 195mA	•	-10	10	
		3.0V ≤ V_{DIFF} ≤ 40V, T_A = 25°C		-10	10	
		3.3V ≤ V_{DIFF} ≤ 40V	•	-10	10	
		3.3V ≤ V_{DIFF} ≤ 60V	•	-10	10	
Miminum Load Current	I_{Lmin}	V_{DIFF} = 3.0V, V_{OUT} = 1.4V (forced)			10	mA
		V_{DIFF} = 3.3V, V_{OUT} = 1.4V (forced)	•		10	
		V_{DIFF} = 40V, V_{OUT} = 1.4V (forced)	•		10	
		V_{DIFF} = 60V, V_{OUT} = 1.4V (forced)	•		10	
Current Limit (Note 2)	I_{CL}	V_{DIFF} = 40V, T_A = 25°C		0.3	1.0	A
		V_{DIFF} = 60V, T_A = 25°C		0.05	0.40	

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.