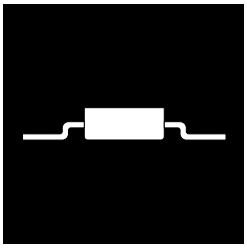
SURFACE MOUNT POSITIVE ADJUSTABLE 1.5 AMP VOLTAGE REGULATOR



Isolated Hermetic Surface Mount Package
1.5 Amp, High Voltage, Positive Adjustable Voltage Regulator

FEATURES

- Hermetic Isolated Surface Mount Package
- Adjustable Output Voltage
- Eliminates Stocking Fixed Voltages
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Product Is Available Hi-Rel Screened
- Electrically Similar To Industry Standard Type LM117HV

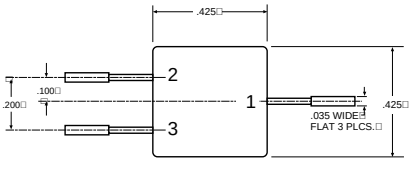
DESCRIPTION

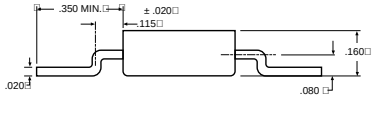
This three terminal positive regulator is supplied in a hermetically sealed metal surface mount package. All protective features are designed into the circuit, including thermal shutdown, current limiting and safe-area control. With heat sinking, they can deliver over 1.5 amp of output current. This unit features output voltages that can be trimmed using external resistors, from 1.2 volts to 57 volts.

ABSOLUTE MAXIMUM RATINGS @ 25°C

Input To Output Voltage Differential . . . . . 60 V
Operating Junction Temperature Range . . . . . - 55°C to + 150°C
Storage Temperature Range . . . . . - 55°C to + 150°C
Typical Power/Thermal Characteristics:
Rated Power:
T_C 17.5W
T_A 3W
Thermal Resistance:
θ_{JC} . . . . . 4.2°C/W
θ_{JA} . . . . . 42°C/W
Max. Lead Solder Temperature for 5 sec . . . . . 225°C

MECHANICAL OUTLINE





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

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		-9	9	mV
		3.3V ≤ V_{DIFF} ≤ 40V, V_{OUT} = V_{ref}	•	-23	23	
		40V ≤ V_{DIFF} ≤ 60V, V_{OUT} = V_{ref}, T_A = 25°C		-5	5	
		40V ≤ V_{DIFF} ≤ 60V, V_{OUT} = V_{ref}	•	-10	10	
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	
		V_{DIFF} = 60V, 10mA ≤ I_L ≤ 30mA	•	-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	
		V_{DIFF} = 60V	•		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	
		3.3V ≤ V_{DIFF} ≤ 60V	•	-5	5	
Miminum 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	
		V_{DIFF} = 60V, V_{OUT} = 1.4V (forced)	•		7.0	
Current Limit (Note 2)	I_{CL}	V_{DIFF} = 40V, T_A = 25°C		0.3	1.5	A
		V_{DIFF} = 60V, T_A = 25°C		0.05	0.50	

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.