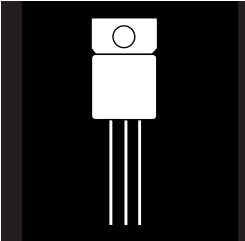


(COTS) COMMERCIAL OFF-THE-SHELF 1.5 AMP POSITIVE  
ADJUSTABLE VOLTAGE REGULATOR, HIGH VOLTAGE



Three Terminal, Precision Adjustable  
Positive Voltage Regulator In TO-257 Package

FEATURES

- High Voltage / 60 Volt
- Built In Thermal Overload Protection
- Short Circuit Current Limiting

DESCRIPTION

These three terminal positive regulators are supplied in hermetically sealed packages. All protective features are designed into the circuit, including thermal shutdown, current-limiting, and safe-area control. With heat sinking, these devices can deliver up to 1.5 amps of output current. The unit also features output voltages that can be fixed from 1.2 volts to 57 volts using external resistors.

ABSOLUTE MAXIMUM RATINGS  $T_c @ 25^{\circ}\text{C}$

Power Dissipation

TO-257	.....
.. 20 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)	.....
..... 300°C Thermal Resistance, Junction to Case	.....
..... 4.2°C/W Maximum Output Current	.....
..... 1.5A	.....

3.3

Recommended Operating Conditions:

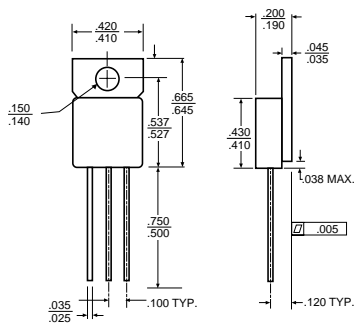
Output Voltage Range	..... 1.2 to 37 VDC
Ambient Operating Temperature Range ( $T_A$ )	..... - 55°C to + 125°C
Input Voltage Range	..... 4.25 to 41.25 VDC

ELECTRICAL CHARACTERISTICS -55°C    T<sub>A</sub>    125°C, I<sub>L</sub> = 8mA (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Reference Voltage	V <sub>REF</sub>	V <sub>DIFF</sub> = 3.0V, T <sub>A</sub> = 25°C	1.20	1.30	V
		V <sub>DIFF</sub> = 3.3V	1.20	1.30	
		V <sub>DIFF</sub> = 40V	1.20	1.30	
		V <sub>DIFF</sub> = 60V	1.20	1.30	
Line Regulation (Note 1)	R <sub>LINE</sub>	3.0V    V <sub>DIFF</sub> 40V, V <sub>oL</sub> = V <sub>ref</sub> , T <sub>A</sub> = 25°C	-9	9	m V
		3.3V    V <sub>DIFF</sub> 40V, V <sub>oL</sub> = V <sub>ref</sub>	• -23	23	
		40V    V <sub>DIFF</sub> 60V, V <sub>oL</sub> = V <sub>ref</sub> , T <sub>A</sub> = 25°C	-5	5	
		40V    V <sub>DIFF</sub> 60V, V <sub>oL</sub> = V <sub>ref</sub>	• -10	10	
Load Regulation (Note 1)	R <sub>LOAD</sub>	V <sub>DIFF</sub> = 3.0V, 10mA    I <sub>L</sub> 1.5A, T <sub>A</sub> = 25°C	-15	15	m V
		V <sub>DIFF</sub> = 3.3V, 10mA    I <sub>L</sub> 1.5A	• -15	15	
		V <sub>DIFF</sub> = 40V, 10mA    I <sub>L</sub> 300mA, T <sub>A</sub> = 25°C	-15	15	
		V <sub>DIFF</sub> = 40V, 10mA    I <sub>L</sub> 195mA	• -15	15	
		V <sub>DIFF</sub> = 60V, 10mA    I <sub>L</sub> 30mA	• -15	15	
Thermal Regulation	V <sub>RTH</sub>	V <sub>h</sub> = 14.6V, I <sub>L</sub> = 1.5A P <sub>d</sub> = 20 Watts, t = 20 ms, T <sub>A</sub> = 25°C	-16	16	m V
Ripple Rejection (Note 2)	R <sub>N</sub>	f = 120 Hz, V <sub>oL</sub> = V <sub>ref</sub> C <sub>Adj</sub> = 10 µF, I <sub>oL</sub> = 100 mA	• 66		dB
Adjustment Pin Current	I <sub>Adj</sub>	V <sub>DIFF</sub> = 3.0V, T <sub>A</sub> = 25°C		100	µA
		V <sub>DIFF</sub> = 3.3V	•	100	
		V <sub>DIFF</sub> = 40V	•	100	
		V <sub>DIFF</sub> = 60V	•	100	
Adjustment Pin Current Change	ΔI <sub>Adj</sub>	V <sub>DIFF</sub> = 3.0V, 10mA    I <sub>L</sub> 1.5A, T <sub>A</sub> = 25°C	-5	5	µA
		V <sub>DIFF</sub> = 3.3V, 10mA    I <sub>L</sub> 1.5A	• -5	5	
		V <sub>DIFF</sub> = 40V, 10mA    I <sub>L</sub> 300mA, T <sub>A</sub> = 25°C	-5	5	
		V <sub>DIFF</sub> = 40V, 10mA    I <sub>L</sub> 195mA	• -5	5	
		3.0V    V <sub>DIFF</sub> 40V, T <sub>A</sub> = 25°C	-5	5	
		3.3V    V <sub>DIFF</sub> 40V	• -5	5	
		3.3V    V <sub>DIFF</sub> 60V	• -5	5	
Minimum Load Current	I <sub>Lmin</sub>	V <sub>DIFF</sub> = 3.0V, V <sub>oL</sub> = 1.4V (forced)		5.0	m A
		V <sub>DIFF</sub> = 3.3V, V <sub>oL</sub> = 1.4V (forced)	•	5.0	
		V <sub>DIFF</sub> = 40V, V <sub>oL</sub> = 1.4V (forced)	•	5.0	
		V <sub>DIFF</sub> = 60V, V <sub>oL</sub> = 1.4V (forced)	•	7.0	
Current Limit (Note 2)	I <sub>CL</sub>	V <sub>DIFF</sub> = 5V	• 1.5	3.5	A
		V <sub>DIFF</sub> = 40V, T <sub>A</sub> = 25°C	0.3	1.5	
		V <sub>DIFF</sub> = 60V, T <sub>A</sub> = 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.

MECHANICAL OUTLINE  
TO-257AA



PIN CONNECTION

