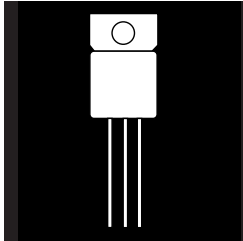


(COTS) COMMERCIAL OFF-THE-SHELF 1.5 AMP NEGATIVE,
ADJUSTABLE VOLTAGE REGULATOR IN TO-257 PKG



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

FEATURES

- Built In Thermal Overload Protection
- Short Circuit Current Limiting

DESCRIPTION

These three terminal negative 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 -37 volts using external resistors.

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

Power Dissipation

| | |
|---|-----------------|
| TO-257 | 20 W |
| Input - Output Voltage Differential | 40 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: | 1.5 A |

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 |

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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} | $V_{DIFF} \text{ } \mathcal{E} = 3.0V, T_A = 25^\circ C$ | -1.275 | -1.225 | V |
| | | $V_{DIFF} \text{ } \mathcal{E} = 3.0V$ | -1.30 | -1.20 | |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V, T_A = 25^\circ C$ | -1.275 | -1.225 | |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V$ | -1.30 | -1.20 | |
| Line Regulation (Note 1) | R_{LINE} | $3.0V \text{ } V_{DIFF} \text{ } \mathcal{E} \text{ } 40V, T_A = 25^\circ C$ | -9 | 9 | mV |
| | | $3.0V \text{ } V_{DIFF} \text{ } \mathcal{E} \text{ } 40V$ | -23 | 23 | |
| Load Regulation (Note 1) | R_{LOAD} | $V_{DIFF} \text{ } \mathcal{E} = 5.0V, 8mA \text{ } I_L \text{ } 1.5A$ | -25 | 25 | mV |
| | | $V_{DIFF} \text{ } \mathcal{E} = 12V, 8mA \text{ } I_L \text{ } 1.5A, T_A = 25^\circ C$ | -25 | 25 | |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V, 8mA \text{ } I_L \text{ } 200mA, T_A = 25^\circ C$ | -25 | 25 | |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V, 8mA \text{ } I_L \text{ } 100mA$ | -25 | 25 | |
| Thermal Regulation | V_{RTH} | $V_{in} = -14.6V, I_L = 1.5A$ $P_d = 20 \text{ Watts}, t = 10 \text{ ms}, T_A = 25^\circ C$ | -5 | 5 | mV |
| Ripple Rejection (Note 2) | R_N | $f = 120 \text{ Hz}, V_{out} = V_{ref}$ $C_{adj} = 10 \mu F$ | 66 | | dB |
| Adjustment Pin Current | I_{adj} | $V_{DIFF} \text{ } \mathcal{E} = 3.0V$ | | 100 | μA |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V$ | | 100 | |
| Adjustment Pin Current Change | $I_{adj} \text{ (Line)}$ | $3.0V \text{ } V_{DIFF} \text{ } \mathcal{E} \text{ } 40V$ | -5 | 5 | μA |
| | $I_{adj} \text{ (Load)}$ | $V_{DIFF} \text{ } \mathcal{E} = 5V, 8mA \text{ } I_L \text{ } 1.5A$ | -5 | 5 | μA |
| Minimum Load Current | I_{min} | $V_{DIFF} \text{ } \mathcal{E} = 3.0V, V_{out} = -1.4V \text{ (forced)}$ | | 3.0 | mA |
| | | $V_{DIFF} \text{ } \mathcal{E} = 10V, V_{out} = -1.4V \text{ (forced)}$ | | 3.0 | |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V, V_{out} = -1.4V \text{ (forced)}$ | | 5.0 | |
| Current Limit (Note 2) | I_L | $V_{DIFF} \text{ } \mathcal{E} \text{ } 5V$ | 1.5 | 3.5 | A |
| | | $V_{DIFF} \text{ } \mathcal{E} = 40V, T_A = 25^\circ C$ | 0.24 | 1.2 | |

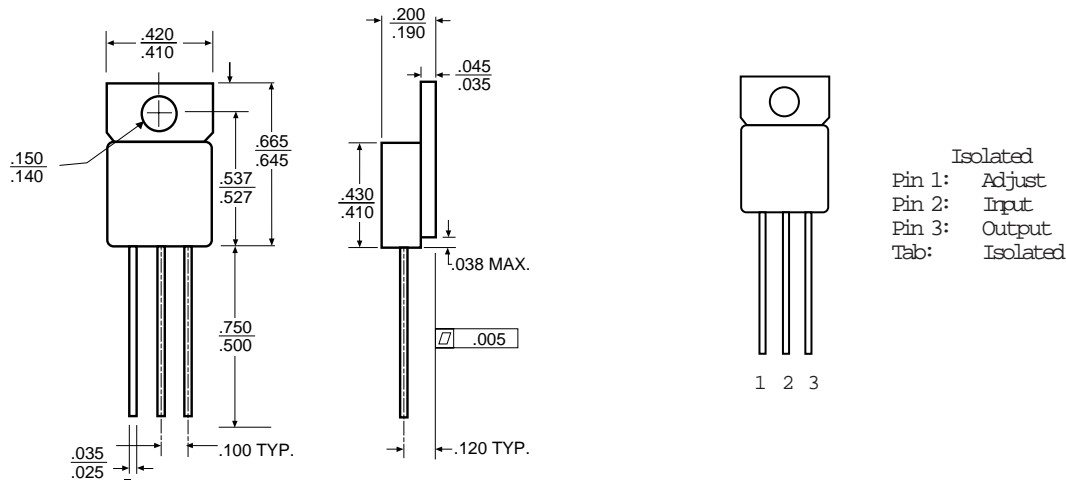
Notes:

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

PIN CONNECTION

TO-257AA



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Isolated
Pin 1: Adjust
Pin 2: Input
Pin 3: Output
Tab: Isolated