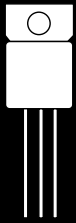


OM3910STM/NTM  
OM3911STM/NTM

## 3.0 AMP POSITIVE ADJUSTABLE VOLTAGE REGULATOR APPROVED TO DESC DRAWING 5962-87675



### Three Terminal, Adjustable Voltage, 3.0 Amp Precision Positive Regulator In Hermetic JEDEC TO-257AA Package

#### FEATURES

- Approved To DESC Standardized Military Drawing 5962-8767501UX/TX and 5962-8767502UX/TX
- Isolated Hermetic Package, JEDEC TO-257AA Outline
- Reference Voltages Set To  $\pm 1\%$  and  $\pm 2\%$
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Similar Electrically To Industry Standard LM150A

#### DESCRIPTION

These three terminal positive regulators approved by DESC, are supplied in a hermetically sealed isolated, metal TO-257 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 3.0 amps of output current. These units feature 1% and 2% initial voltage tolerance, 0.35% load regulation and .01% line regulation.

#### ABSOLUTE MAXIMUM RATINGS @ 25°C

Input - Output Voltage Differential..... +35 V  
 Operating Junction Temperature Range..... - 55°C to + 150°C  
 Storage Temperature Range ..... - 65°C to + 150°C

Typical Power/Thermal Characteristics:

Rated Power @ 25°C

$T_C$  ..... 25 W

$T_A$  ..... 3 W

Thermal Resistance:

$\theta_{JC}$  Case U..... 4.2°C/W

$\theta_{JC}$  Case T..... 3.5°C/W

$\theta_{JA}$  ..... 50°C/W

3.3

| DESC DRAWING   | REFERENCE VOLTAGE | OMNIREL PART NUMBER |
|----------------|-------------------|---------------------|
| 5962-8767501UX | $\pm 2\%$         | OM3910STM           |
| 5962-8767502UX | $\pm 1\%$         | OM3911STM           |
| 5962-8767501TX | $\pm 2\%$         | OM3910NTM           |
| 5962-8767502TX | $\pm 1\%$         | OM3911NTM           |

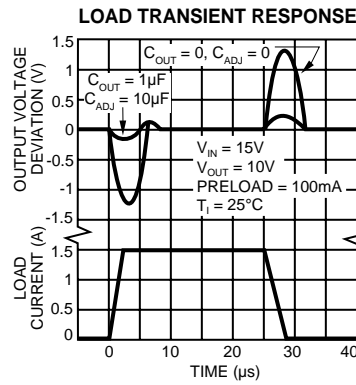
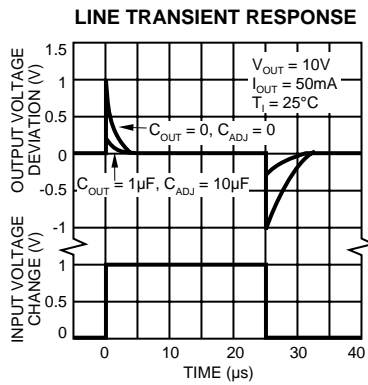
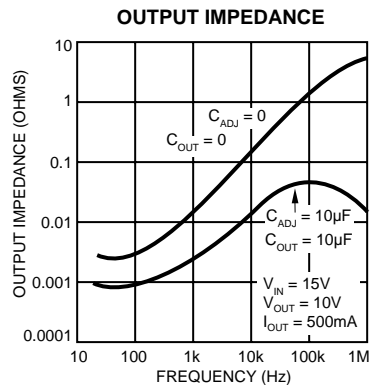
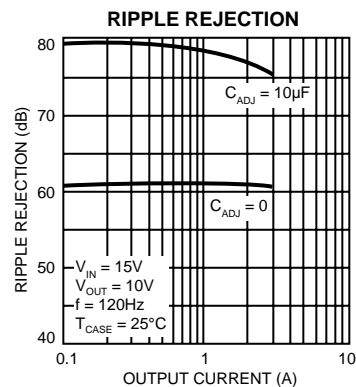
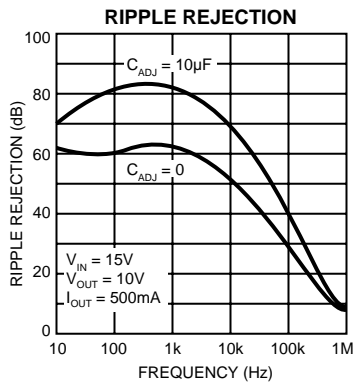
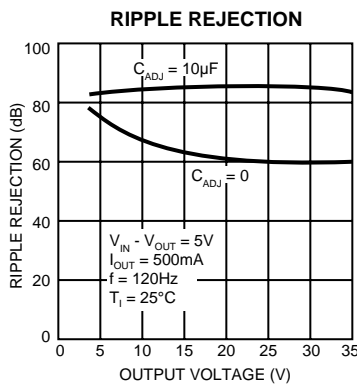
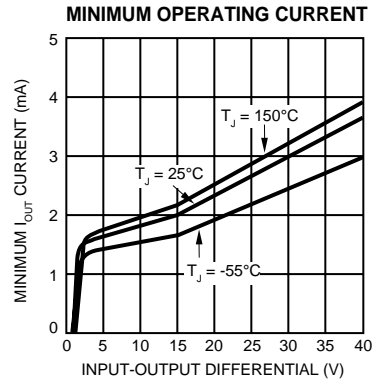
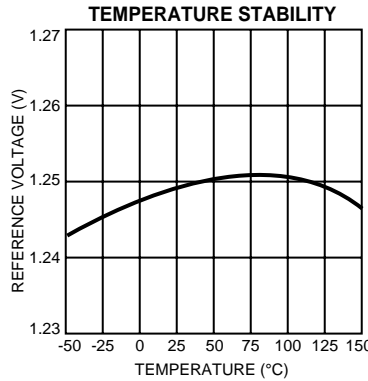
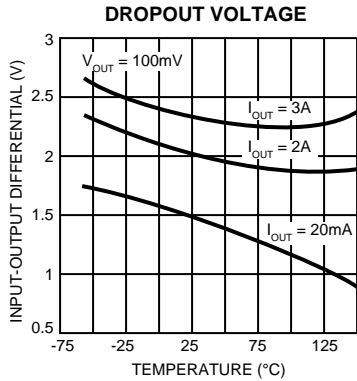
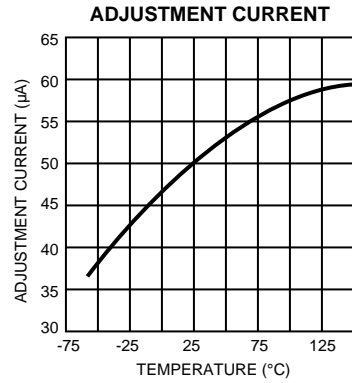
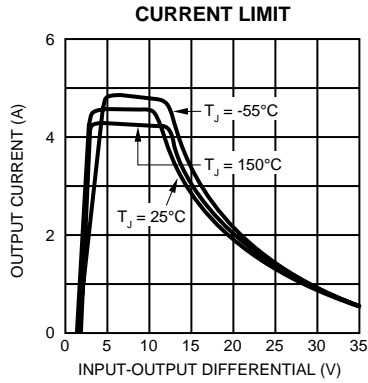
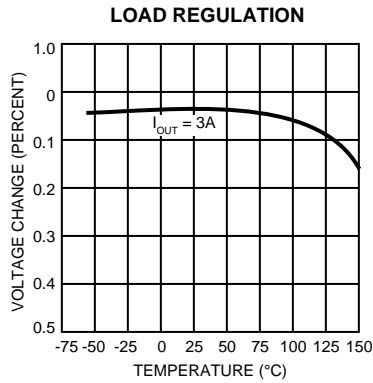
**ELECTRICAL CHARACTERISTICS** -55°C  $T_A$  125°C (Note 1) unless otherwise specified

| Test                         | Symbol      | Conditions   | Dash No.     | Limits |       | Unit    |
|------------------------------|-------------|--|--------------|--------|-------|---------|
|                              |             |  |              | Min.   | Max.  |         |
| Reference Voltage            | $V_{REF}$   | $I_{OUT} = 10mA$   | 01           | 1.20   | 1.30  | V       |
|                              |             | $T_A = 25^\circ C$   | 02           | 1.238  | 1.262 | V       |
|                              |             | 3.0V ( $V_{IN} - V_{OUT}$ ) 35V, P 30W                                   | 01           | 1.20   | 1.30  | V       |
|                              |             | 10mA $I_{OUT}$ 3.0A (Note 2)   | 02           | 1.225  | 1.270 | V       |
| Line Regulation<br>(Note 2)  | $R_{LINE}$  | 3.0V ( $V_{IN} - V_{OUT}$ ) 35V,<br>$I_{OUT} = 10mA, T_J = 25^\circ C$   | All<br>P/N's |        | 0.01  | %/V     |
|                              |             | 3.0V ( $V_{IN} - V_{OUT}$ ) 35V,<br>$I_{OUT} = 10mA$                     | All<br>P/N's |        | 0.05  | %/V     |
| Load Regulation<br>(Note 2)  | $R_{LOAD}$  | 10mA $I_{OUT}$ 3.0A,<br>$V_{OUT} = 5.0A, T_J = 25^\circ C$               | All<br>P/N's |        | 17.5  | mV      |
|                              |             | 10mA $I_{OUT}$ 3.0A,<br>$V_{OUT} = 5.0A$                                 | All<br>P/N's |        | 50    | mV      |
|                              |             | 10mA $I_{OUT}$ 3.0A,<br>$V_{OUT} = 5.0A, T_J = 25^\circ C$               | All<br>P/N's |        | 0.35  | %       |
|                              |             | 10mA $I_{OUT}$ 3.0A,<br>$V_{OUT} = 5.0A$                                 | All<br>P/N's |        | 1.0   | %       |
| Thermal Regulation           |             | 20ms pulse, $T_A = 25^\circ C$   | All P/N's    |        | 0.01  | %/W     |
| Ripple Rejection<br>(Note 3) | $R_N$       | $V_{OUT} = 10V, f = 120Hz$<br>$C_{ADJ} = 10\mu F$                        | All<br>P/N's | 66     |       | dB      |
| Adjust Pin Current           | $I_{Adj}$   |  | All P/N's    |        | 100   | $\mu A$ |
| Adjust Pin<br>Current Change | $^3I_{Adj}$ | 10mA $I_{OUT}$ 3.0A, $I_{OUT} = 10mA$<br>3.0V ( $V_{IN} - V_{OUT}$ ) 35V | All<br>P/N's |        | 5.0   | $\mu A$ |
| Minimum Load Current         | $I_{MIN}$   | $(V_{IN} - V_{OUT}) = 35V$   | All P/N's    |        | 5.0   | mA      |
| Current Limit                | $I_{CL}$    | $(V_{IN} - V_{OUT}) = 10V$   | All P/N's    | 3.0    |       | A       |
|                              |             | $(V_{IN} - V_{OUT}) = 30V$   | All P/N's    | 0.3    |       | A       |

**Notes:**

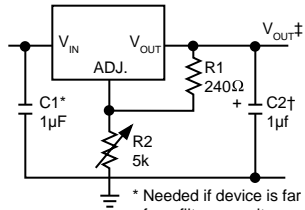
1. Unless otherwise specified, these specifications apply for  $(V_{IN} - V_{OUT}) = 5.0V$  and  $I_{OUT} = 1.5A$ .
2. Regulation is measured at a constant junction temperature using a pulse technique. Changes in output voltage due to heating effects are covered under the specification for thermal regulation.
3. Guaranteed if not tested to the limits specified.

## TYPICAL PERFORMANCE CHARACTERISTICS



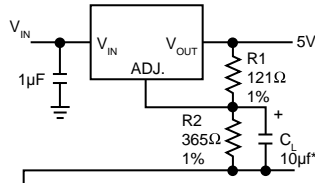
## TYPICAL APPLICATIONS

### 1.2 - 25V Adjustable Regulator



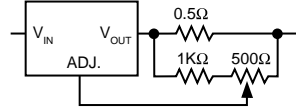
\* Needed if device is far from filter capacitors  
 † Optional – improves transient response    ‡  $V_{OUT} = 1.25V (1 + \frac{R2}{R1})$

### Improving Ripple Rejection

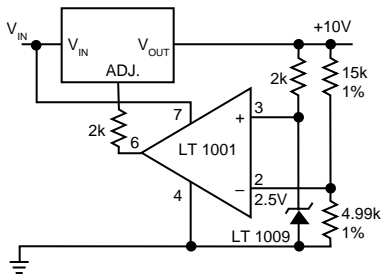


\* C<sub>1</sub> Improves ripple rejection X<sub>C</sub> should be small compared to R<sub>2</sub>

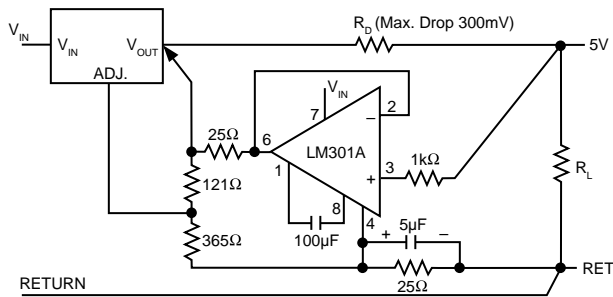
### Adjustable Current Limiter



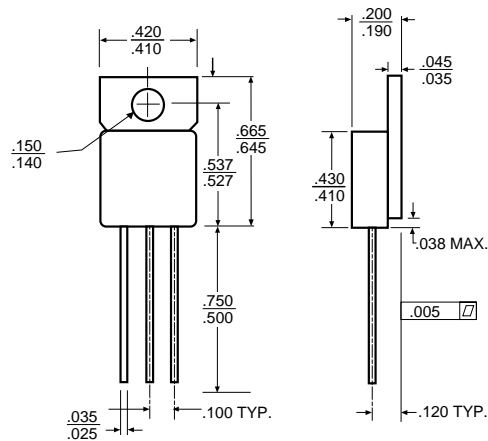
### Precision High Current Reference



### Remote Sensing



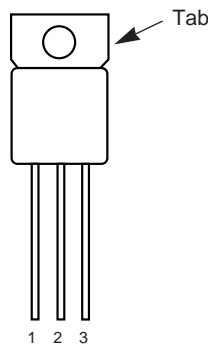
## MECHANICAL OUTLINE



### NOTES:

- Case is metal/hermetically sealed
- Isolated Tab

## CONNECTION DIAGRAM



### CASE U

#### FRONT VIEW

- Pin 1: Adjust
- Pin 2: V<sub>OUT</sub>
- Pin 3: V<sub>IN</sub>
- Tab: Isolated

### CASE T

#### FRONT VIEW

- Pin 1: Adjust
- Pin 2: V<sub>OUT</sub>
- Pin 3: V<sub>IN</sub>
- Tab: V<sub>OUT</sub>