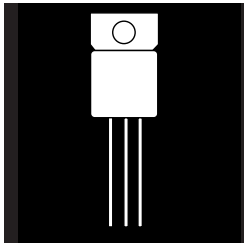


## 3.0 AMP POSITIVE ADJUSTABLE VOLTAGE REGULATOR APPROVED TO DESC DRAWING 5962-87675



**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

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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

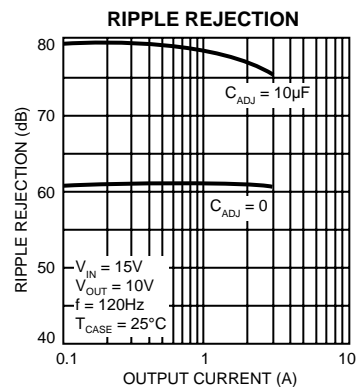
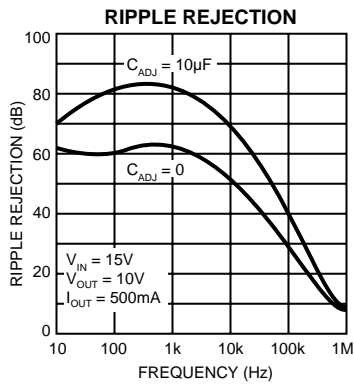
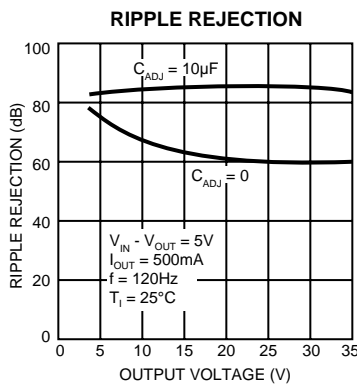
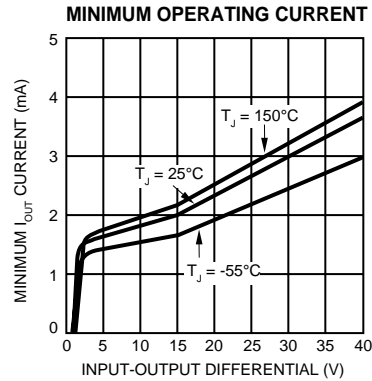
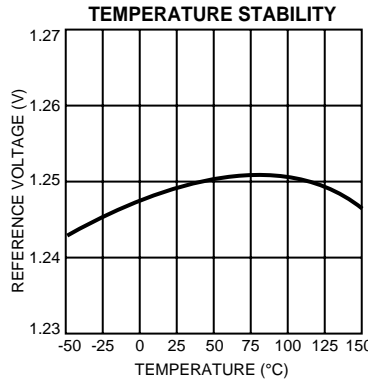
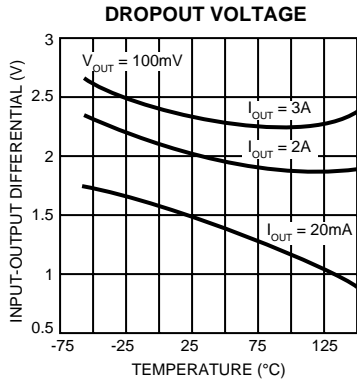
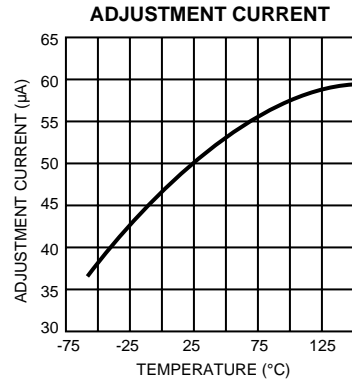
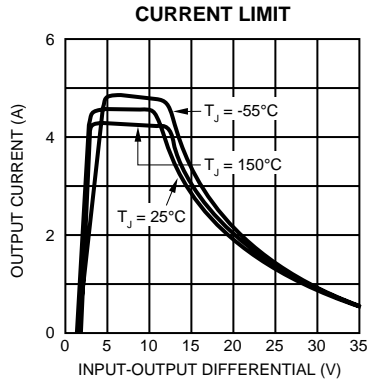
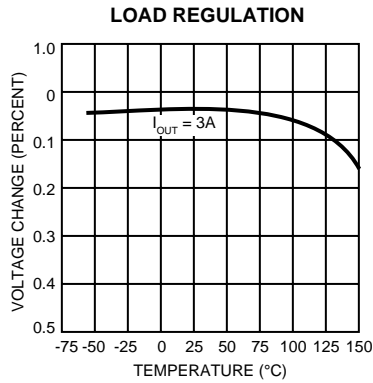
**ELECTRICAL CHARACTERISTICS** -55°C  $T_A$  125°C (Note 1) unless otherwise specified

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 (Note 2)	$R_{LINE}$	3.0V ( $V_{IN} - V_{OUT}$ ) 35V, $I_{OUT} = 10mA, T_J = 25^\circ C$	All P/N's		0.01	%/V
		3.0V ( $V_{IN} - V_{OUT}$ ) 35V, $I_{OUT} = 10mA$	All P/N's		0.05	%/V
Load Regulation (Note 2)	$R_{LOAD}$	10mA $I_{OUT}$ 3.0A, $V_{OUT} = 5.0A, T_J = 25^\circ C$	All P/N's		17.5	mV
		10mA $I_{OUT}$ 3.0A, $V_{OUT} = 5.0A$	All P/N's		50	mV
		10mA $I_{OUT}$ 3.0A, $V_{OUT} = 5.0A, T_J = 25^\circ C$	All P/N's		0.35	%
		10mA $I_{OUT}$ 3.0A, $V_{OUT} = 5.0A$	All P/N's		1.0	%
Thermal Regulation		20ms pulse, $T_A = 25^\circ C$	All P/N's		0.01	%/W
Ripple Rejection (Note 3)	$R_N$	$V_{OUT} = 10V, f = 120Hz$ $C_{ADJ} = 10\mu F$	All P/N's	66		dB
Adjust Pin Current	$I_{Adj}$		All P/N's		100	$\mu A$
Adjust Pin Current Change	$^3I_{Adj}$	10mA $I_{OUT}$ 3.0A, $I_{OUT} = 10mA$ 3.0V ( $V_{IN} - V_{OUT}$ ) 35V	All 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

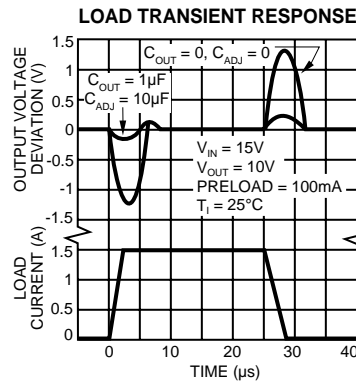
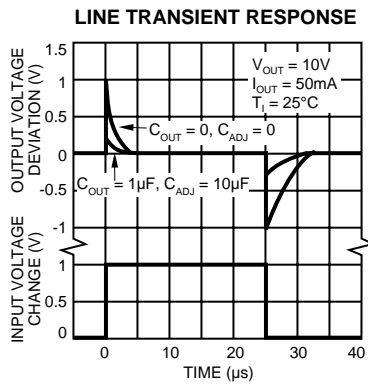
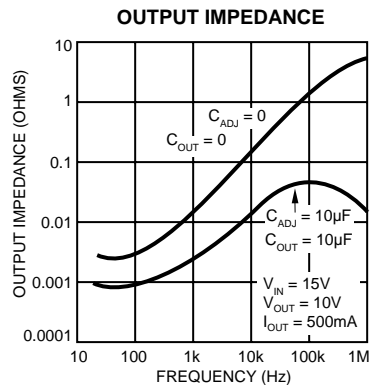
**Notes:**

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

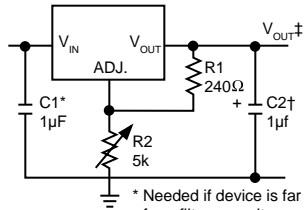


3.3



## TYPICAL APPLICATIONS

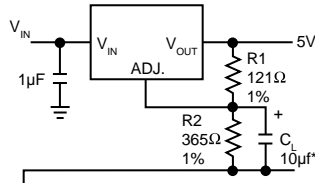
### 1.2 - 25V Adjustable Regulator



\* Needed if device is far from filter capacitors

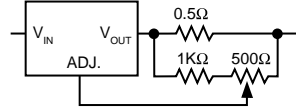
† Optional – improves transient response    ‡  $V_{OUT} = 1.25V (1 + \frac{R2}{R1})$

### Improving Ripple Rejection

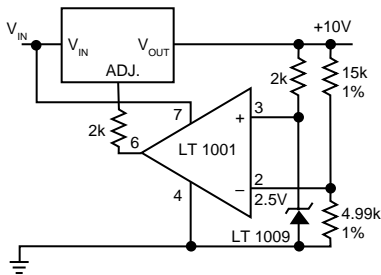


\* C<sub>1</sub> Improves ripple rejection X<sub>C</sub> should be small compared to R<sub>2</sub>

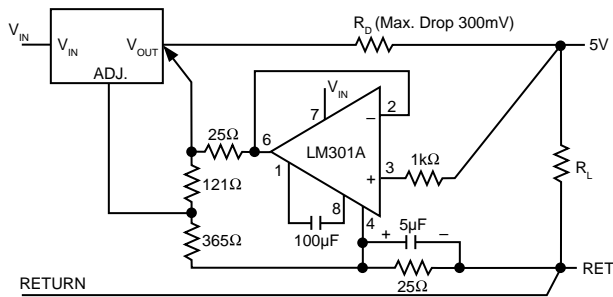
### Adjustable Current Limiter



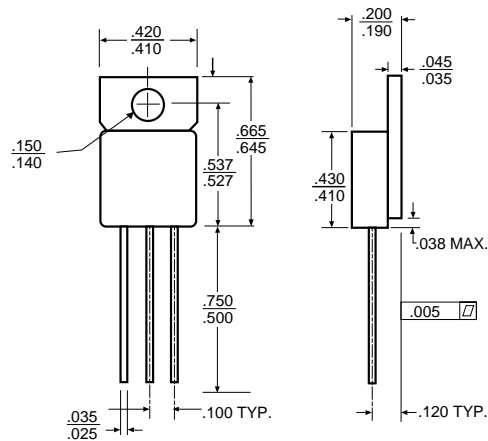
### Precision High Current Reference



### Remote Sensing



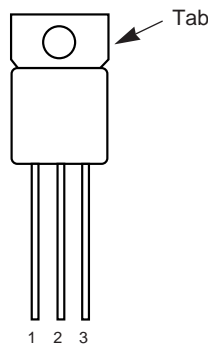
## MECHANICAL OUTLINE



### 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>