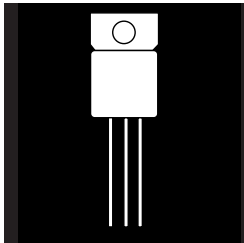


3.0 AMP POSITIVE ADJUSTABLE VOLTAGE REGULATOR APPROVED TO DESC DRAWING 5962-87675



**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:

θ_{JC} Case U..... 4.2°C/W

θ_{JC} Case T..... 3.5°C/W

θ_{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

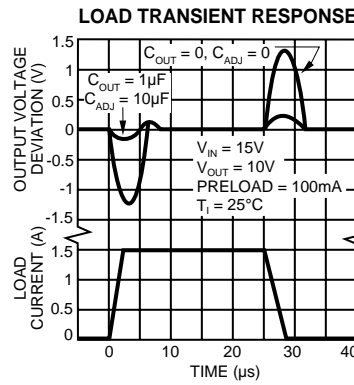
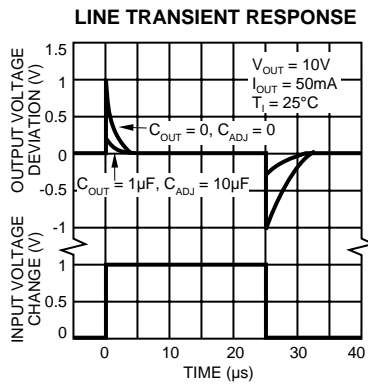
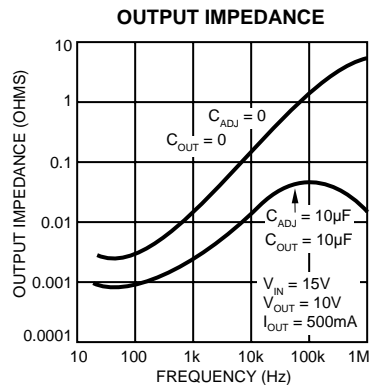
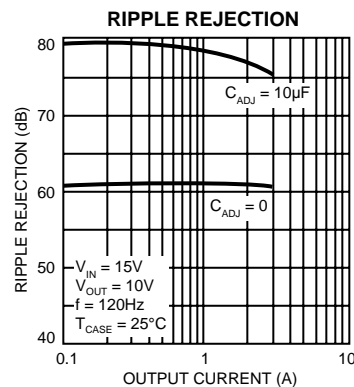
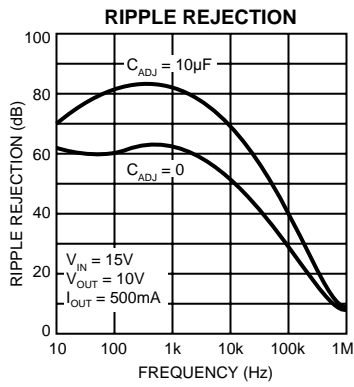
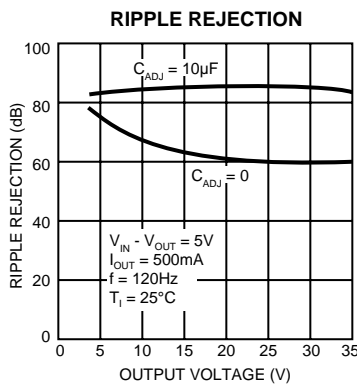
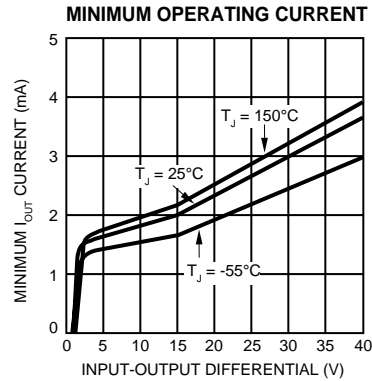
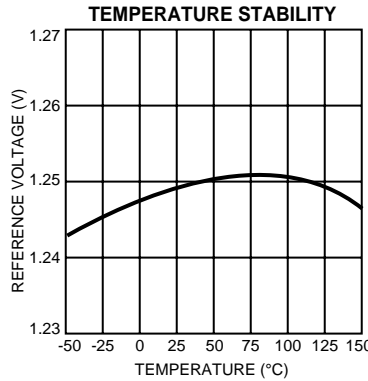
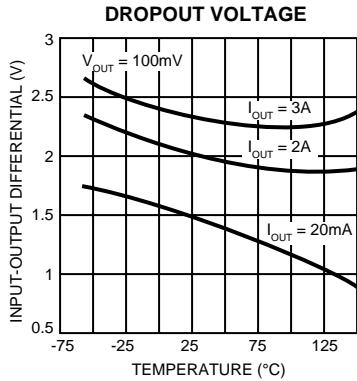
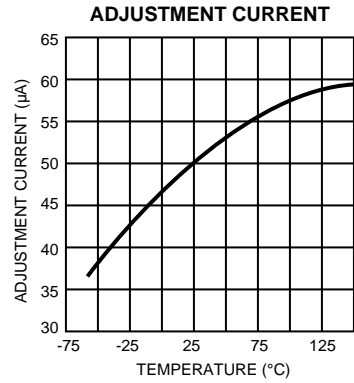
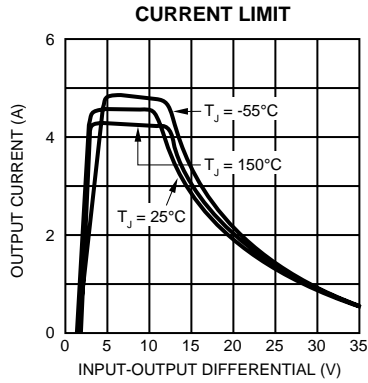
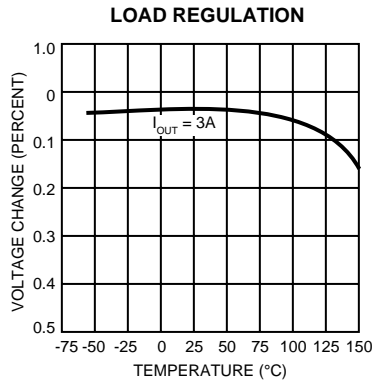
ELECTRICAL CHARACTERISTICS -55°C T_A 125°C (Note 1) unless otherwise specified

Test	Symbol	Conditions	Dash No.	Limits		Unit
				Min.	Max.	
Reference Voltage	V_{REF}	$I_{OUT} = 10mA$ $T_A = 25^\circ C$	01	1.20	1.30	V
			02	1.238	1.262	V
		3.0V ($V_{IN} - V_{OUT}$) 35V, P 30W 10mA I_{OUT} 3.0A (Note 2)	01	1.20	1.30	V
			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	μA
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	μA
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.

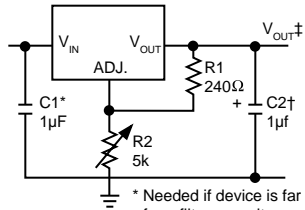
TYPICAL PERFORMANCE CHARACTERISTICS



3.3

TYPICAL APPLICATIONS

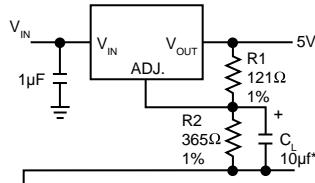
1.2 - 25V Adjustable Regulator



* Needed if device is far from filter capacitors

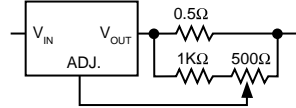
† Optional – improves transient response ‡ $V_{OUT} = 1.25V (1 + \frac{R2}{R1})$

Improving Ripple Rejection

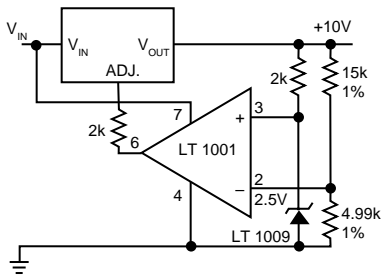


* C₁ Improves ripple rejection X_C should be small compared to R₂

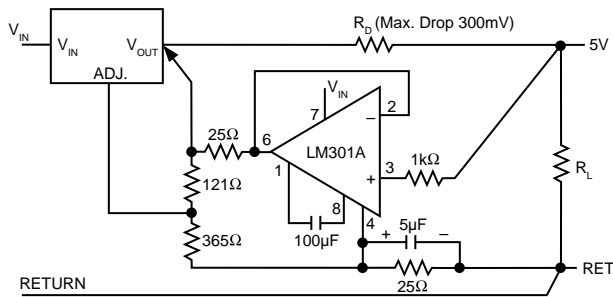
Adjustable Current Limiter



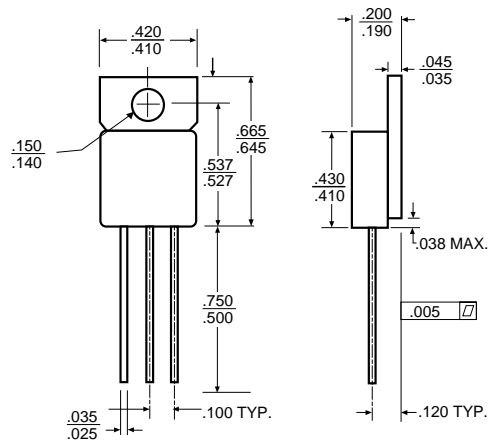
Precision High Current Reference



Remote Sensing



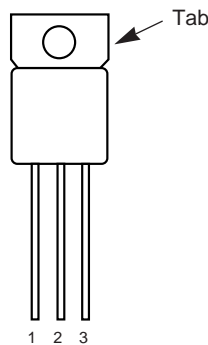
MECHANICAL OUTLINE



NOTES:

- Case is metal/hermetically sealed
- Isolated Tab

CONNECTION DIAGRAM



CASE U

FRONT VIEW

- Pin 1: Adjust
- Pin 2: V_{OUT}
- Pin 3: V_{IN}
- Tab: Isolated

CASE T

FRONT VIEW

- Pin 1: Adjust
- Pin 2: V_{OUT}
- Pin 3: V_{IN}
- Tab: V_{OUT}