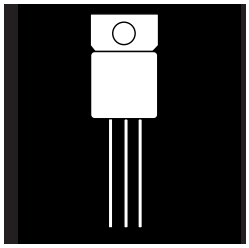
3.0 AMP POSITIVE ADJUSTABLE VOLTAGE REGULATOR APPROVED TO DESC DRAWING 5962-87675



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 ±1% and ±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:
q_{JC} Case U . . . . . 4.2°C/W
q_{JC} Case T . . . . . 3.5°C/W
q_{JA} . . . . . 50°C/W

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

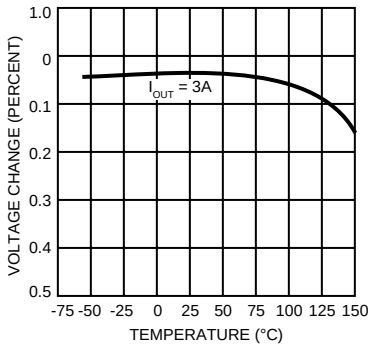
ELECTRICAL CHARACTERISTICS -55°C T_A 125°C (Note 1) unless otherwise specified

Test	Symbol	Conditions	Dash No.	Limits Min.	Limits Max.	Unit
Reference Voltage	V_{REF}	I_{OUT} = 10mA	01	1.20	1.30	V
		T_A = 25°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°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°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°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°C	All P/N's		0.01	%/W
Ripple Rejection (Note 3)	R_N	V_{OUT} = 10V, f = 120Hz C_{ADJ} = 10µF	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
Miminum 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

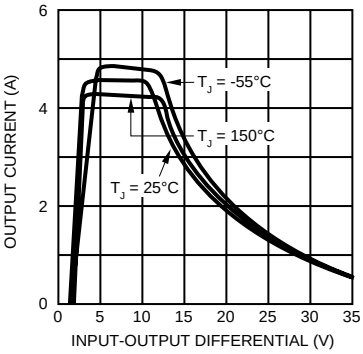
Notes:
1. Unless otherwise specified, these specifications apply for (V_{IN} - V_{OUT}) = 5.0V and I_{OUT} = 1.5A.
2. Regulation is measured at a constant junction temperature using a pulse technique. Changes in output voltage due to heating effects are covered under the specification for thermal regulation.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

TYPICAL PERFORMANCE CHARACTERISTICS

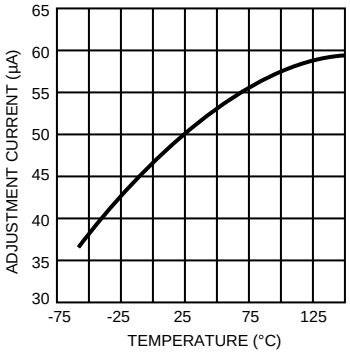
LOAD REGULATION



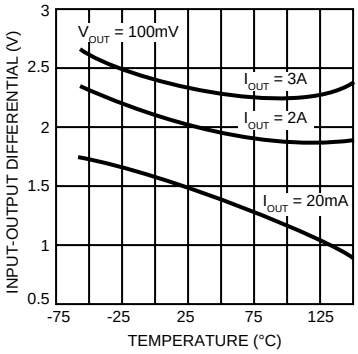
CURRENT LIMIT



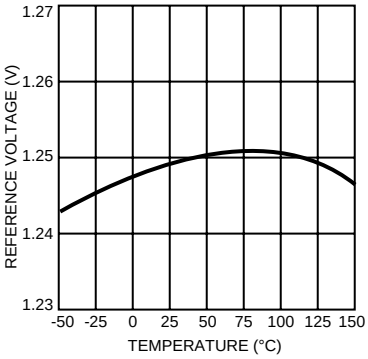
ADJUSTMENT CURRENT



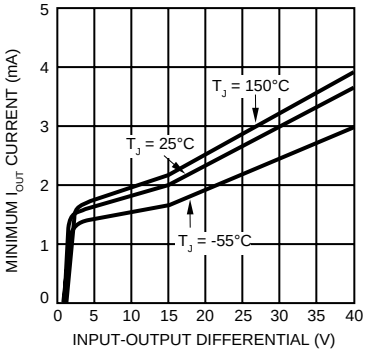
DROPOUT VOLTAGE



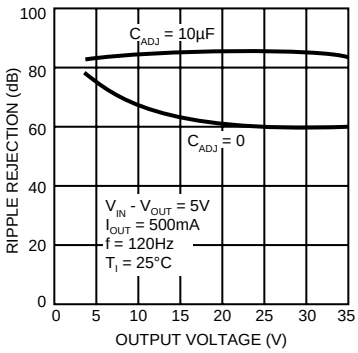
TEMPERATURE STABILITY



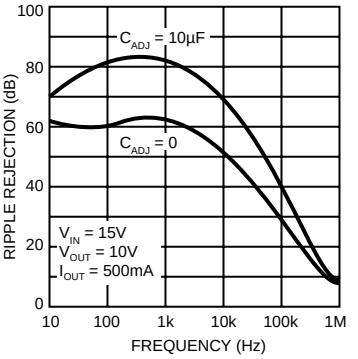
MINIMUM OPERATING CURRENT



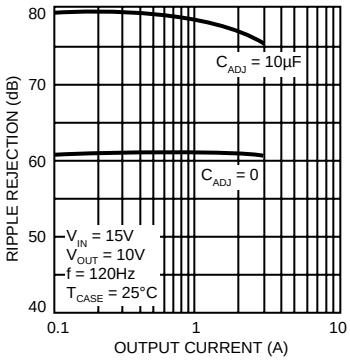
RIPPLE REJECTION



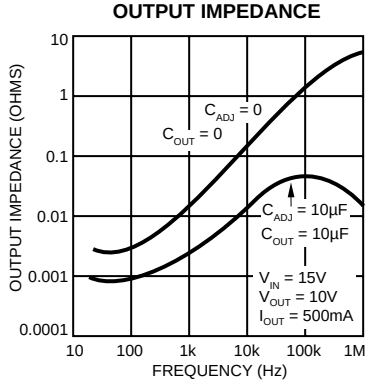
RIPPLE REJECTION



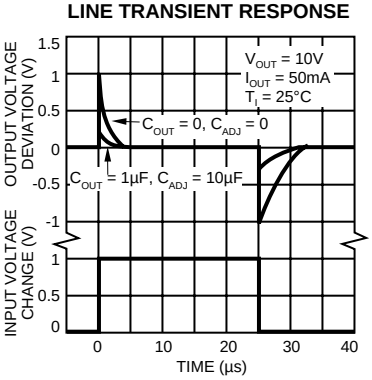
RIPPLE REJECTION



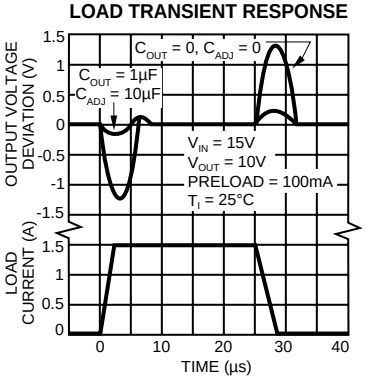
OUTPUT IMPEDANCE



LINE TRANSIENT RESPONSE



LOAD TRANSIENT RESPONSE

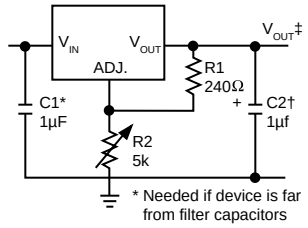


3.3

Omnirel

TYPICAL APPLICATIONS

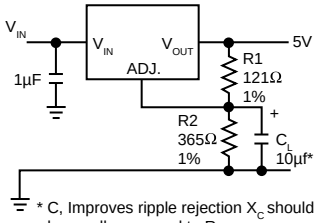
1.2 - 25V Adjustable Regulator



† Optional – improves transient response

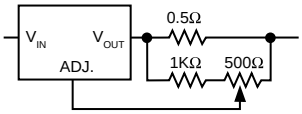
‡ $V_{OUT} = 1.25V (1 + \frac{R2}{R1})$

Improving Ripple Rejection

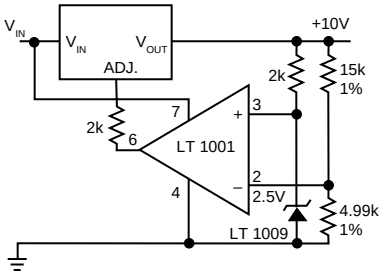


* C, Improves ripple rejection X_C should be small compared to R_2

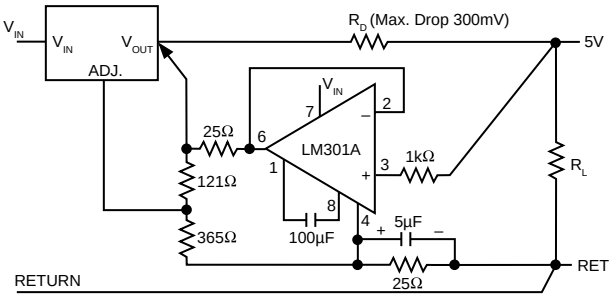
Adjustable Current Limiter



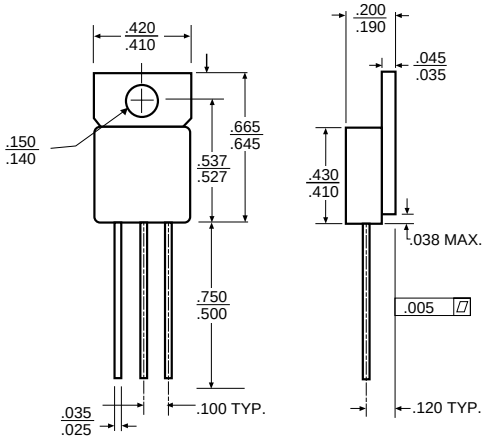
Precision High Current Reference



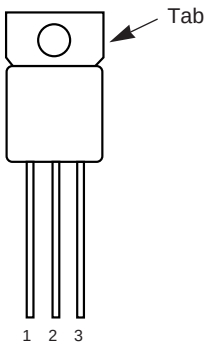
Remote Sensing



MECHANICAL OUTLINE



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}

NOTES:
- Case is metal/hermetically sealed
- Isolated Tab

Omnirel 205 Crawford Street, Leominster, MA 01453 USA (508) 534-5776 FAX (508) 537-4246