

OM3957NMM  
OM3957SMM

OM3957STM

### 1.3 AMP LOW DROPOUT 3.3 FIXED VOLTAGE REGULATOR APPROVED TO SMD 5962-98590



Three Terminal, 3.3 Volt Positive Fixed  
Low Dropout Voltage Regulator In  
Hermetic JEDEC TO-257AA  
and Surface Mount Packages

#### FEATURES

- Similar To Industry Standard LT1086 -3.3
- Approved To D S C C Standardized Military Drawing Number 5962-98590
- Built In Thermal Overload Protection
- Short Circuit Current Limiting
- Available In Isolated Package
- Output Voltage Tolerance is Guaranteed To  $\pm 1\%$
- Guaranteed Dropout Voltage At Multiple Current Levels

#### DESCRIPTION

This 3.3 volt fixed voltage regulator is designed to provide 1.3A of current with a higher efficiency than conventional voltage regulators. This device is designed to operate down to 1 volt input to output differential and the 1.5V dropout voltage is guaranteed at the maximum output current. This device is ideally suited for those systems where high reliability, small size and low weight are required. The isolated package simplifies the system assembly methods.

#### ABSOLUTE MAXIMUM RATINGS @ 25°C

Input Voltage	30V
Output Current	1.3A
Operating Junction Temperature	- 65°C to + 150°C
Storage Temperature Range	- 65°C to + 150°C
Lead Temperature (Soldering 10 seconds)	300°C
Power Dissipation (P <sub>d</sub> )	Internally Limited
Thermal Resistance:	
$\theta_{JC}$ (Isolated)	4.2°C/W
$\theta_{JA}$	42°C/W

#### Part Number Designator

Standard Military Drawing  
5962-9859001MMA  
5962-9859001MUA  
5962-9859001MNA

Omnirel Part Number  
OM3957SMM  
OM3957STM  
OM3957NMM



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OM3957SIM

ELECTRICAL CHARACTERISTICS  $-55^{\circ}\text{C}$   $T_A$   $125^{\circ}\text{C}$  (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Output Voltage	$V_{OUT}$	$V_{IN} = 5.0\text{ V}$ , $I_{OUT} = 10\text{ mA}$ $T_A = 25^{\circ}\text{C}$	3.267	3.333	V
		4.75 V $V_{IN}$ 18 V, 10 mA $I_{OUT}$ 1.3 A	• 3.235	3.365	V
Line Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta V_{IN}}$	4.5V $V_{IN}$ 18 V, $I_{OUT} = 0\text{ A}$ , $T_A = 25^{\circ}\text{C}$		10	mV
	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	4.5V $V_{IN}$ 18 V, $I_{OUT} = 0\text{ A}$	•	12	
Load Regulation (Note 1)	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	$V_{IN} = 5.0\text{ V}$ , 0A $I_{OUT}$ 1.3 A $T_A = 25^{\circ}\text{C}$		15	mV
	$\frac{\Delta V_{OUT}}{\Delta I_{OUT}}$	$V_{IN} = 5.0\text{ V}$ , 0A $I_{OUT}$ 1.3 A	•	25	mV
Dropout Voltage	$V_{DO}$	$I_{OUT} = 1.3\text{ A}$ , $\Delta V_{REF} = 1\%$	•	1.5	V
Thermal Regulation	-	30 ms pulse, $T_A = +25^{\circ}\text{C}$		0.04	% / W
Ripple Rejection	$\frac{\Delta V_{IN}}{\Delta V_{OUT}}$	$f = 120\text{ Hz}$ , $C_{adj} = 25\text{ }\mu\text{F}$ , $C_{OUT} = 25\text{ }\mu\text{F}$ (tantalum), $I_{OUT} = 1.3\text{ A}$ , $V_{IN} = 6.3\text{ V}$	• 60		dB
Quiescent Current	$I_Q$	$V_{IN} = 18\text{ V}$	•	10	mA
Current Limit	$I_{LIM}$	$V_{IN} = 8.3\text{ V}$	• 1.3	2.5	A
		$V_{IN} = 28.3\text{ V}$	• .050	-	A
Temperature Stability (Note 2)	$\frac{\Delta V_{OUT}}{\Delta T}$	$-55^{\circ}\text{C}$ $T_J$ $+125^{\circ}\text{C}$		1.5	%
Long Term Stability (Note 2)	$\frac{\Delta V_{OUT}}{\Delta T}$	$T_A = +125^{\circ}\text{C}$ , $t = 1000\text{ hrs}$		1.0	%

Notes:

- Line and Load Regulation are measured at a constant junction temperature using a low duty cycle pulse technique. Although power dissipation is internally limited, regulation is guaranteed up to the maximum power dissipation of 13 W. Power dissipation is determined by the input/output differential voltage and the output current. Guaranteed maximum power dissipation will not be available over the full input/output voltage range.
- Guaranteed by design, characterization or correlation to other tested parameters.
- The • denotes the specifications which apply over the full operating temperature range.

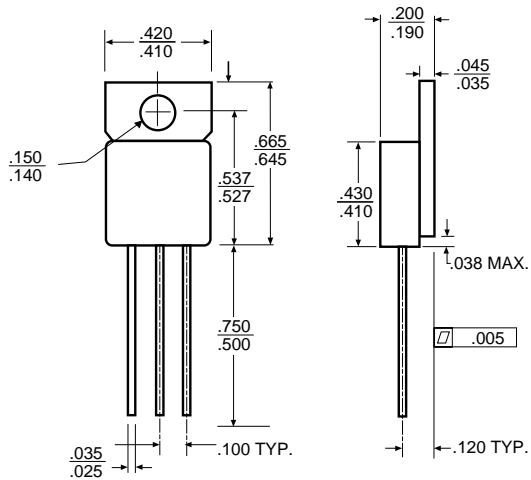


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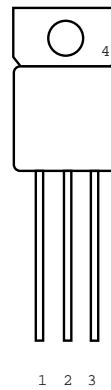
MECHANICAL OUTLINE



NOTES

- Case is metal/hermetically sealed
- Isolated Tab

CONNECTION DIAGRAM

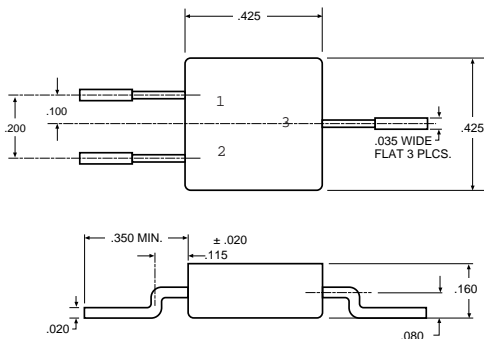


PIN OUT

- 1 Ground
- 2  $V_{OUT}$
- 3  $V_{IN}$
- 4 Isolated

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MECHANICAL OUTLINE

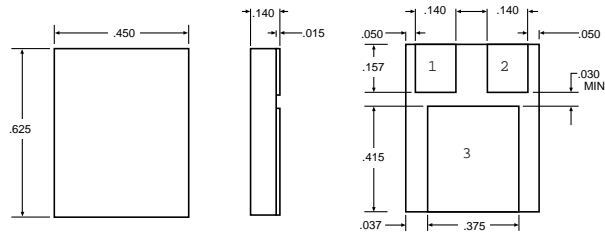


Front View

- Pin 1 - Ground
- Pin 2 -  $V_{IN}$
- Pin 3 -  $V_{OUT}$
- Tab - Isolated

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MECHANICAL OUTLINE



Front View

- Pin 1 -  $V_{IN}$
- Pin 2 - Ground
- Pin 3 -  $V_{OUT}$

THANK YOU FOR YOUR INTEREST  
IN OMNIREL'S PRODUCTS!