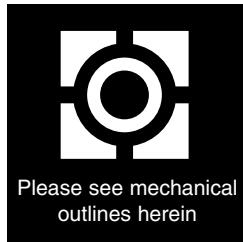


# 1.5 AMP AND 3 AMP LOW DROPOUT 3.3 VOLTAGE POSITIVE REGULATOR



**+3.3 Volt, Low Dropout Positive Regulators  
in Hermetic Packages**

## FEATURES

- Low Dropout Voltage and Ground Currents
- High Current Capability
- Built-In Thermal Overload Protection
- Short Circuit Current Limiting
- Output Voltage Tolerance Guaranteed to  $\pm 1\%$
- Available in Multiple Hermetic Package Styles
- Output Current from .75A to 3.0A

## DESCRIPTION

This series of +3.3 Voltage Regulators are high current, high accuracy, low dropout regulators and well suited for systems where extremely low dropout voltages is critical. They feature full protection against overcurrent faults, reversed input polarity, reversed lead insertion, over temperature operation and positive and negative transient voltage spikes. They are available in a number of hermetic package styles where critical environmental systems demand high performance.

## ABSOLUTE MAXIMUM RATINGS @ 25°C

Operating Input Voltage . . . . . 30 Volts  
 Output Current - Package Dependent. . . . . See Below  
 Operating Temperature Range . . . . . -55 to + 125 °C  
 Storage Temperature Range. . . . . -65 to + 150 °C  
 Lead Temperature, Soldering for 10 seconds . . . . . 300°C  
 Junction Temperature . . . . . + 150 °C

ORDERING INFORMATION - OM7670/71 SERIES		
PART NUMBER	OUTPUT CURRENT (AMP)	PACKAGE
OM7670NK	1.5	TO-204AA
OM7671NK	3.0	TO-204AA
OM7670NM	1.3	Surface Mount - SMD1
OM7671NM	2.6	Surface Mount - SMD1
OM7670SM	1.3	Surface Mount - SMD3
OM7671SM	2.6	Surface Mount - SMD3
OM7670ST	1.3	TO-257AA Isolated Tab
OM7671ST	2.6	TO-257AA Isolated Tab
OM7670N2	.75	LCC-28

THERMAL RESISTANCE		MAX POWER - WATTS	
Package Style	Junction to Case	OM7670 Series	OM7671 Series
LCC-28	20°C/Watt	5	----
TO-257AA, SMD-1 and SMD-3	4.2°C/Watt	13	26
TO-204AA (TO-3)	3.0°C/Watt	15	30

Table 1

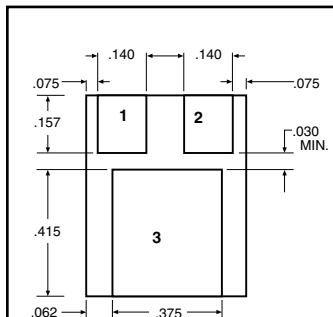
**ELECTRICAL CHARACTERISTICS**  $-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$  (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit	
Output Voltage	$V_{\text{OUT}}$	$V_{\text{IN}} = 5.0 \text{ V}$ , $I_{\text{OUT}} = 10 \text{ mA}$ $T_A = 25^{\circ} \text{ C}$		3.267	3.333	V
		$4.75 \text{ V} \leq V_{\text{IN}} \leq 18 \text{ V}$ , $10 \text{ mA} \leq I_{\text{OUT}} \leq I_{\text{LMIN}}$	•	3.325	3.365	V
Line Regulation (Note 1)	$\frac{\Delta V_{\text{OUT}}}{\Delta V_{\text{IN}}}$	$4.5 \text{ V} \leq V_{\text{IN}} \leq 18 \text{ V}$ , $I_{\text{OUT}} = 0 \text{ A}$	•		12	mV
Load Regulation (Note 1)	$\frac{\Delta V_{\text{OUT}}}{\Delta I_{\text{OUT}}}$	$V_{\text{IN}} = 5.0 \text{ V}$ , $0 \text{ A} \leq I_{\text{OUT}} \leq I_{\text{LMIN}}$ $T_A = 25^{\circ} \text{ C}$			15	mV
		$V_{\text{IN}} = 5.0 \text{ V}$ , $0 \text{ A} \leq I_{\text{OUT}} \leq I_{\text{LMIN}}$	•		25	mV
Dropout Voltage	$V_{\text{DO}}$	$I_{\text{OUT}} = I_{\text{LMIN}}$ , $\Delta V_{\text{REF}} = 1\%$	•		1.5	V
Thermal Regulation	-	30 ms pulse, $T_A = +25^{\circ} \text{ C}$			0.04	%/W
Ripple Rejection	$\frac{\Delta V_{\text{IN}}}{\Delta V_{\text{OUT}}}$	$f = 120 \text{ Hz}$ , $C_{\text{Adj}} = 25 \mu\text{F}$ , $C_{\text{OUT}} = 25 \mu\text{F}$ (tantalum), $I_{\text{OUT}} = I_{\text{LMIN}}$ , $V_{\text{IN}} = 6.3 \text{ V}$	•	60		dB
Quiescent Current	$I_{\text{Q}}$	$V_{\text{IN}} = 18 \text{ V}$	•		10	mA
Current Limit	$I_{\text{L}}$	OM7670NK, $V_{\text{IN}} = 18 \text{ V}$	•	1.5	3.5	A
		OM7670NM/ST/SM, $V_{\text{IN}} = 18 \text{ V}$	•	1.3	2.5	
		OM7670N2, $V_{\text{IN}} = 18 \text{ V}$	•	.75	1.50	
		OM7671NK, $V_{\text{IN}} = 18 \text{ V}$	•	3.0	5.0	
		OM7671NM/ST/SM, $V_{\text{IN}} = 18 \text{ V}$	•	2.6	4.5	
		$V_{\text{IN}} = 28 \text{ V}$ , All Types	•	.050	--	A
Temperature Stability (Note 2)	$\frac{\Delta V_{\text{OUT}}}{\Delta T}$	$-55^{\circ} \text{ C} \leq T_J \leq +125^{\circ} \text{ C}$			1.55	%
Long Term Stability (Note 2)	$\frac{\Delta V_{\text{OUT}}}{\Delta T}$	$T_A = +125^{\circ} \text{ C}$ , $t = 1000 \text{ hrs}$			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 15W for the OM7670 series and 30 watts for the OM7671 series (See Table 1). 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.

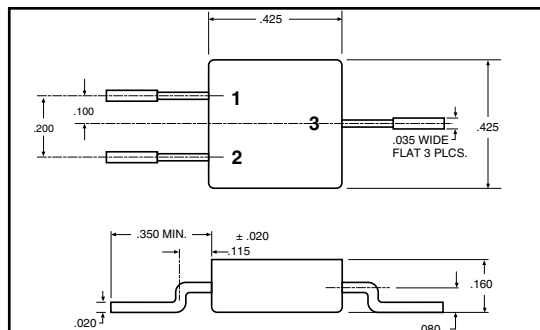
# MECHANICAL OUTLINES



**OM7670NM/OM7671NM**

**Pin Out**

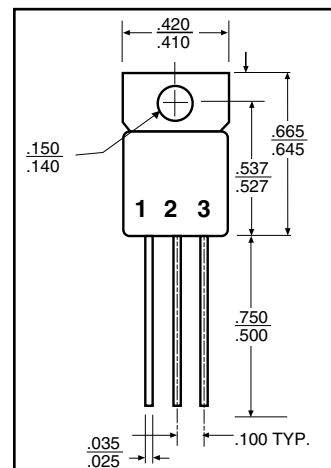
<b>Pin 1</b>	<b>Vin</b>
<b>Pin 2</b>	<b>Ground</b>
<b>Pin 3</b>	<b>Vout</b>



**OM7670SM/OM7671SM**

**Pin Out**

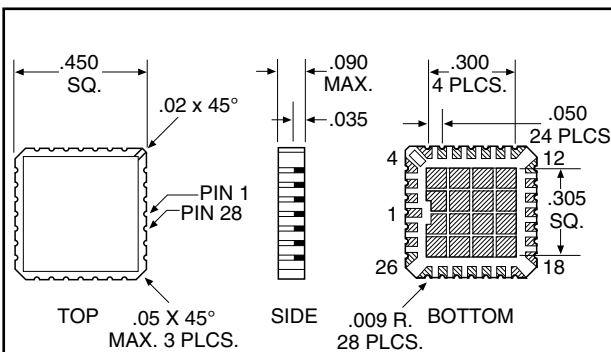
<b>Pin 1</b>	<b>Ground</b>
<b>Pin 2</b>	<b>Vin</b>
<b>Pin 3</b>	<b>Vout</b>



**OM7670ST/OM7671ST**

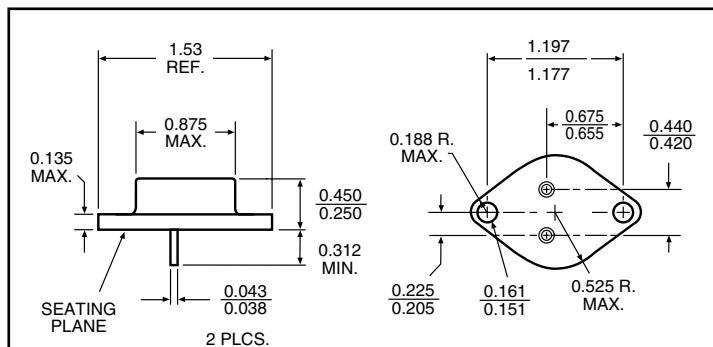
**Pin Out**

<b>Pin 1</b>	<b>Ground</b>
<b>Pin 2</b>	<b>Vout</b>
<b>Pin 3</b>	<b>Vin</b>



**OM7670N2**

Pin 1	Input	Pin 11	Output	Pin 21	Input
Pin 2	Adjust	Pin 12	Output	Pin 22	Input
Pin 3	Adjust	Pin 13	Adjust	Pin 23	Input
Pin 4	Output	Pin 14	Adjust	Pin 24	Input
Pin 5	Output	Pin 15	Input	Pin 25	Input
Pin 6	Output	Pin 16	Input	Pin 26	Input
Pin 7	Output	Pin 17	Input	Pin 27	Input
Pin 8	Output	Pin 18	Input	Pin 28	Input
Pin 9	Output	Pin 19	Input		
Pin 10	Output	Pin 20	Input		



**OM7670NK/OM7671NK**

Pin 1 -	Input
Pin 2 -	Output
Case -	Adjust

For more information on any of these mechanical outlines, please visit our web site at:  
[www.omnirel.com](http://www.omnirel.com)