International
IOR Rectifier

PD - 97299

Low Dropout Positive Voltage Regulator

OM7670NM
3.3V, 1.3A

Product Summary

Part Number	Output Voltage	Output Current	Package
OM7670NM	3.3V	1.3A	SMD-1

SMD-1

Description

This series of +3.3V voltage regulators are high current, high accuracy, low dropout regulators and are well suited for systems where low dropout voltages are critical. These devices feature protection against overtemperature, overcurrent, reverse polarity conditions and voltage spikes. The SMD-1 hermetic package meets the demand for military/defense environments.

Features

- Low Dropout Voltage and Ground Currents
- High Current Capability
- Built-in Thermal Overload Protection
- Short Circuit Current Limiting
- Output Voltage Tolerance Guaranteed to ± 1%
- Hermetic SMD-1 Package Ensures High Reliability
- Output Current 1.3A
- This part is also available in
  TO-204AA Package as OM7670NK
  TO-257AA Package as OM7670ST(Isolated)
  3-Pin Surface Mount (SMD-3) Package as OM7670SM

Absolute Maximum Ratings @ Tc =25°C

Parameter	Symbol	Value	Units
Output Current	I_O	1.3	A
Input Voltage	V_{IN}	30	V
Power Dissipation	P_D	13	W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	4.2	°C/W
Operating Junction Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	
Pckg. Mounting Surface Temperature	T_P	300 (for 5s)	

Electrical Characteristics -55°C ≤ T_A ≤ 125°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Units
Output Voltage	V_{OUT}	V_{IN} = 5.0V, I_{OUT} = 10mA, T_A = 25°C	3.267	3.333	V
		4.75V ≤ V_{IN} ≤ 18V, 10mA ≤ I_{OUT} ≤ I_{LMIN} ③	3.235	3.365	
Line Regulation ①	$\triangle V_{OUT}$ / $\triangle V_{IN}$	4.5V ≤ V_{IN} ≤ 18V, I_{OUT} = 0 A ③	-	12	mV
Load Regulation ①	$\triangle V_{OUT}$ / $\triangle I_{OUT}$	V_{IN} = 5.0V, 0A ≤ I_{OUT} ≤ I_{LMIN}, T_A = 25°C	-	15	
		V_{IN} = 5.0V, 0A ≤ I_{OUT} ≤ I_{LMIN} ③	-	25	
Dropout Voltage	V_{DROP}	I_{OUT} = I_{LMIN}, $\triangle V_{REF}$ = 1% ③	-	1.5	V
Thermal Regulation	-	Pulse Width = 30ms, T_A = +25°C	-	0.04	%/W
Ripple Rejection	$\triangle V_{IN}$ / $\triangle V_{OUT}$	f = 120Hz, C_{Adj} = 25µF, C_{OUT} = 25µF (tantalum), I_{OUT} = I_{LMIN} ③ V_{IN} = 6.3V	60	-	dB
Quiescent Current	I_Q	V_{IN} = 18V ③	-	10	mA
Current Limit	I_L	V_{IN} = 8.3V ③	1.3	-	A
		V_{IN} =28V ③	0.050	-	
Temperature Stability ②	$\triangle V_{OUT}$ / $\triangle T$	-55°C ≤ T_J ≤ +125°C	-	1.55	%
Long Term Stability ②	$\triangle V_{OUT}$ / $\triangle T$	T_A = +125°C, t = 1000hrs	-	1.0	

Notes

1. 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 13W. Power dissipation is determined by the input/output differential voltage and output current. Guaranteed maximum power dissipation will not be available over the full input/output voltage range.
2. Guaranteed by design, characterization or correlation to other tested parameters.
3. Specifications apply over the operating temperature range.

Short Circuit Current

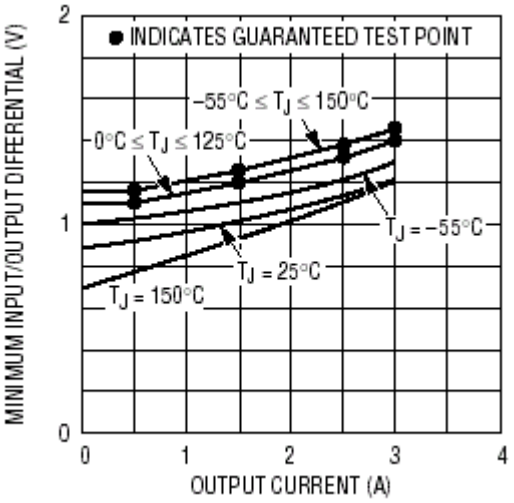


Fig 1: Typical Minimum Output Differential Vs Output Current

Load Regulation

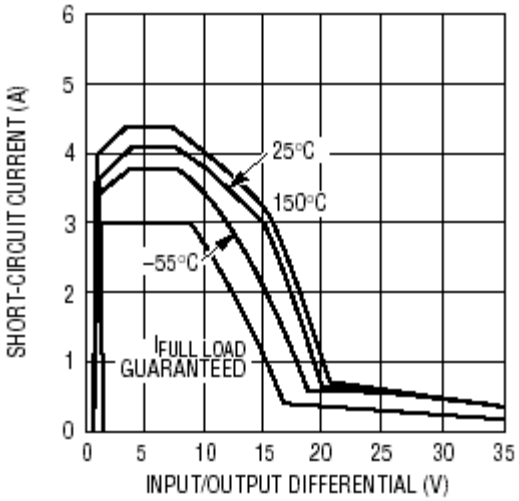


Fig 2: Typical Short Circuit Current Vs Input/Output Differential

Dropout Voltage

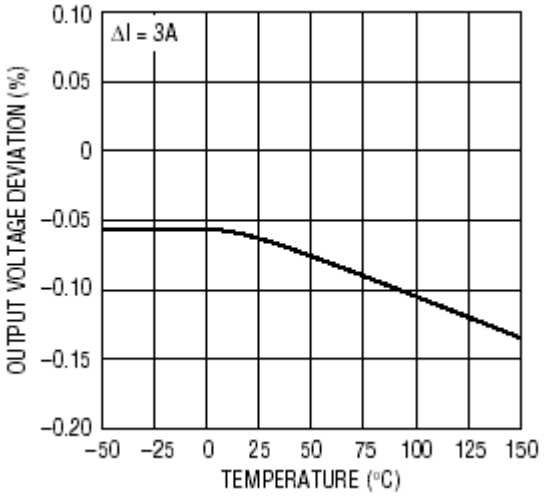
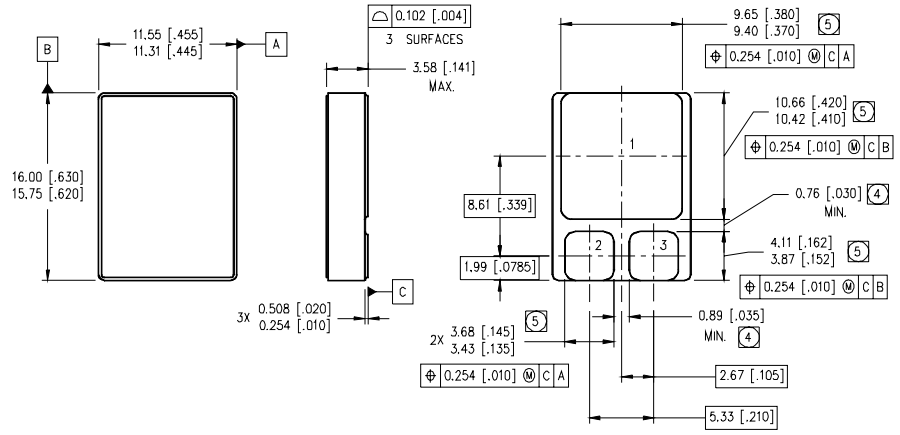


Fig 3: Typical Output Voltage Deviation Vs Temperature

Case Outline and Dimensions - SMD-1



NOTES:

1. DIMENSIONING & TOLERANCING PER ASME Y14.5M–1994.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
4. DIMENSION INCLUDES METALLIZATION FLASH.
5. DIMENSION DOES NOT INCLUDE METALLIZATION FLASH.

PAD ASSIGNMENTS

Pin 1 - Vout
Pin 2 - Ground
Pin 3 - Vin

Part Numbering Nomenclature

OM 7670 N M

Device Number

Package Code
M = SMD-1

Isolated / Non-Isolated
N = Non-Isolated

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