

Low Dropout Positive Voltage Regulator

OM7670NK 3.3V, 1.5A

Product Summary

Part Number	Output Voltage	Output Current	Package
OM7670NK	3.3V	1.5A	TO-204AA



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 TO-204AA 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 $\pm 1\%$
- Hermetic TO-204AA Package Ensures High Reliability
- Output Current 1.5A
- This part is also available in
SMD-1 Package as OM7670NM
TO-257AA Package as OM7670ST(Isolated)
3-Pin Surface Mount (SMD-3) Package as OM7670SM

Absolute Maximum Ratings @ $T_c = 25^\circ\text{C}$

Parameter	Symbol	Value	Units
Output Current	I_O	1.5	A
Input Voltage	V_{IN}	30	V
Power Dissipation	P_D	15	W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	
Lead Temperature (Soldering 10 seconds maximum)	T_L	300	

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	ΔV _{OUT} / ΔV _{IN}	4.5V ≤ V _{IN} ≤ 18V, I _{OUT} = 0 A ③	-	12	mV
Load Regulation ①	ΔV _{OUT} / ΔI _{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} , ΔV _{REF} = 1% ③	-	1.5	V
Thermal Regulation	-	Pulse Width = 30ms, T _A = +25°C	-	0.04	%/W
Ripple Rejection	ΔV _{IN} / ΔV _{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	1.5	-	A
		V _{IN} = 28V ③	0.050	-	
Temperature Stability ②	ΔV _{OUT} / ΔT	-55°C ≤ T _J ≤ +125°C	-	1.55	%
Long Term Stability ②	ΔV _{OUT} / ΔT	T _A = +125°C, t = 1000hrs	-	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. 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.
- Guaranteed by design, characterization or correlation to other tested parameters.
- Specifications apply over the operating temperature range.

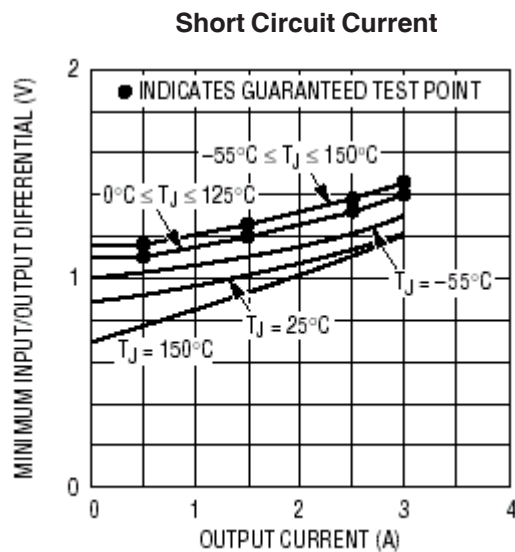


Fig 1: Typical Minimum Output Differential Vs Output Current

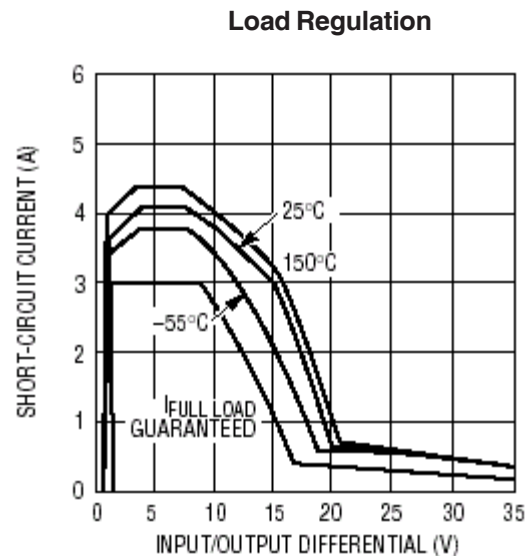


Fig 2: Typical Short Circuit Current Vs Input/Output Differential

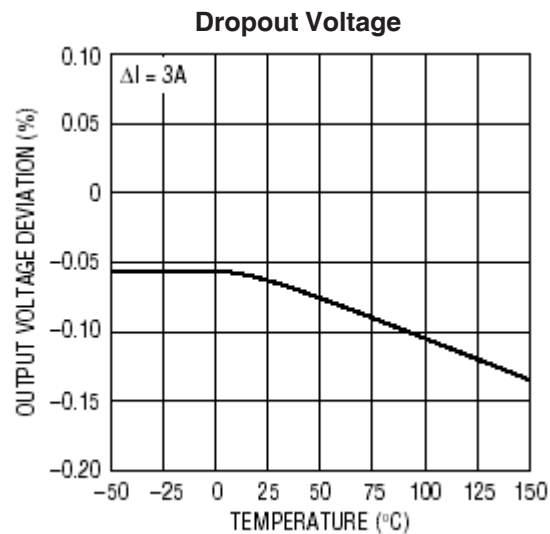
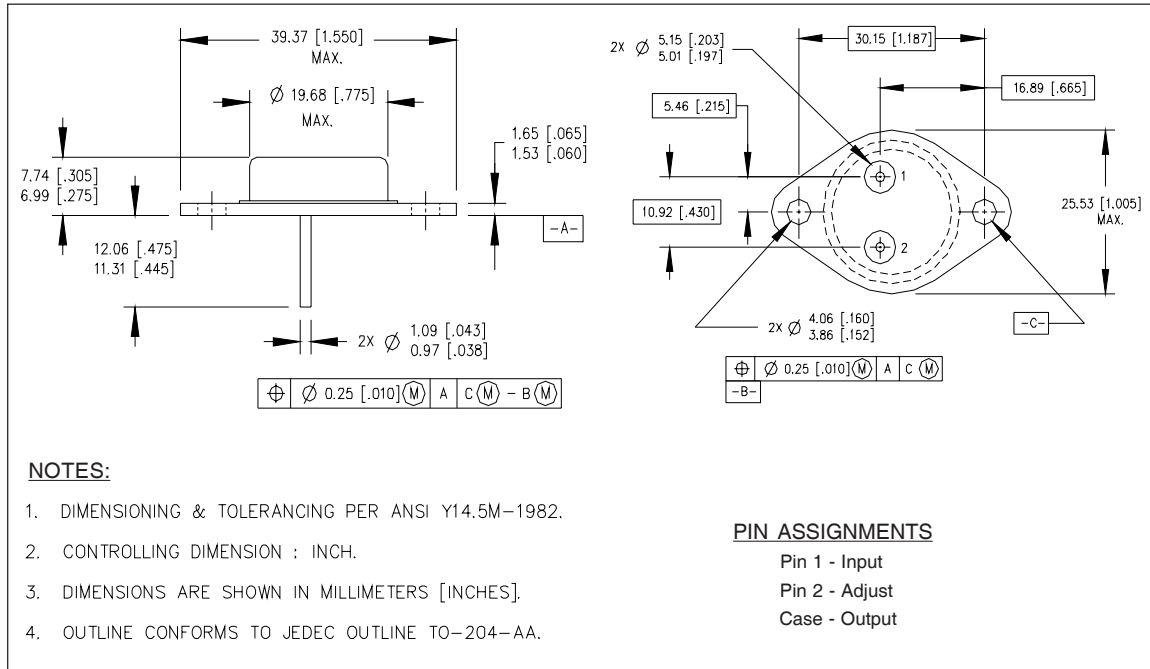


Fig 3: Typical Output Voltage Deviation Vs Temperature

Case Outline and Dimensions - TO-204AA**Part Numbering Nomenclature**