International
IOR Rectifier

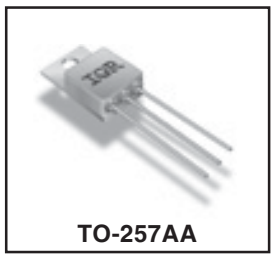
PD - 97297

# Low Dropout Positive Voltage Regulator

# OM7670ST
## 3.3V, 1.3A

### Product Summary

| Part Number | Output Voltage | Output Current | Package |
|---|---|---|---|
| OM7670ST | 3.3V | 1.3A | TO-257AA |



TO-257AA

### 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-257AA (Isolated Tab) 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 TO-257AA (Isolated Tab) Package Ensures High Reliability
- Output Current 1.3A
- This part is also available in
  SMD-1 Package as OM7670NM
  TO-204AA Package as OM7670NK
  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 | |
| 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 | $\triangle V_{OUT} / \triangle V_{IN}$ | 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**

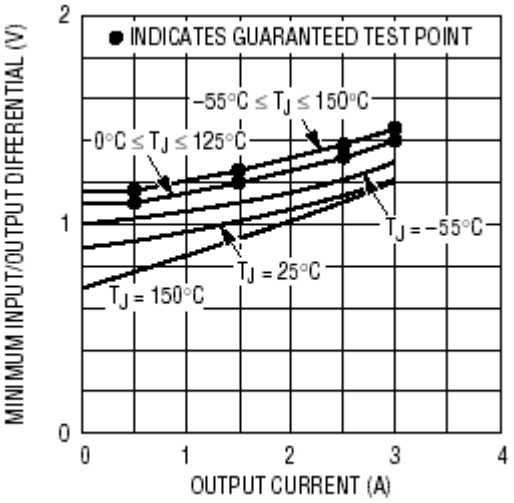



**Fig 1:** Typical Minimum Output Differential Vs Output Current

**Load Regulation**

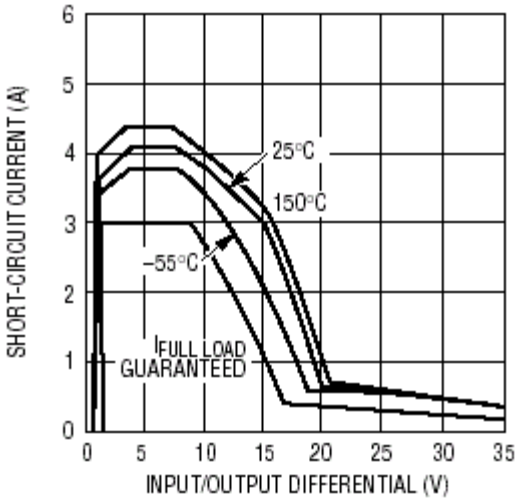



**Fig 2:** Typical Short Circuit Current Vs Input/Output Differential

**Dropout Voltage**

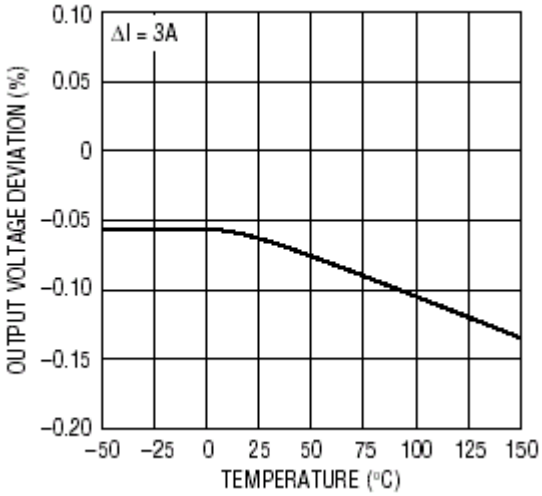
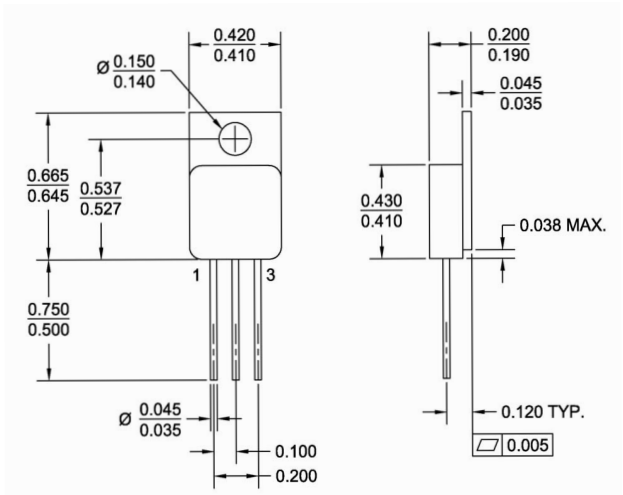



**Fig 3:** Typical Output Voltage Deviation Vs Temperature

## Case Outline and Dimensions - TO-257AA 3-Pin (T-3)




NOTES:
1.- DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
2.- CONTROLLING DIMENSION: INCH.
3.- DIMENSIONS ARE SHOWN IN INCHES.
4.- TOLERANCES ARE ±0.010 U.O.S.
5.- SEE INDIVIDUAL DATA SHEETS FOR PIN ASSIGNMENTS.
6.- OUTLINE USED WITH OM PART NUMBERS ONLY.

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

## Part Numbering Nomenclature

**OM 7670 S T**

**Device Number**

**Package Code**
T = TO-257AA

**Isolated / Non-Isolated**
S = Isolated



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