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NTE1917 Integrated Circuit Negative 3 Terminal Voltage Regulator, -5V, 100mA

Description:

The NTE1917 voltage regulator is an inexpensive, easy-to-use device in a TO92 type package suitable for a multitude of applications that require a regulated supply of up to 100mA. This device features internal current limiting and thermal shutdown making the NTE1917 remarkably rugged. No external components are required in many applications.

The NTE1917 is useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. It offers a substantial performance advantage over the common zener diode-resistor approach.

Features:

- Low Cost
- ±5% Tolerance
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection
- No External Components Required

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Input Voltage, V_I -30V
 Operating Junction Temperature Range, T_J 0° to $+150^\circ\text{C}$
 Storage Junction Temperature Range, T_{stg} -65° to $+150^\circ\text{C}$

Electrical Characteristics: ($V_I = -10\text{V}$, $I_O = 40\text{mA}$, $C_I = 0.33\mu\text{F}$, $C_O = 0.1\mu\text{F}$, $0^\circ < T_J < +125^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|-----------------|---------------------|---|--|------|-------|------|----|
| Output Voltage | V_O | $T_J = +25^\circ\text{C}$ | -4.8 | -5.0 | -5.2 | V | |
| | | $-7\text{V} \geq V_I \geq -20\text{V}$, $1\text{mA} \leq I_O \leq 40\text{mA}$ | -4.75 | - | -5.25 | V | |
| | | $V_I = -10\text{V}$, $1\text{mA} \leq I_O \leq 70\text{mA}$ | -4.75 | - | -5.25 | V | |
| Line Regulation | Reg_{line} | $T_J = +25^\circ\text{C}$ | $-7\text{V} \geq V_I \geq -20\text{V}$ | - | - | 150 | mV |
| | | | $-8\text{V} \geq V_I \geq -20\text{V}$ | - | - | 100 | mV |

Electrical Characteristics (Cont'd): ($V_I = -10V$, $I_O = 40mA$, $C_I = 0.33\mu F$, $C_O = 0.1\mu F$, $0^\circ < T_J < +125^\circ C$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-----------------------------------|-----------------------|--|-----|-----|-----|----------|
| Load Regulation | Reg_{load} | $T_J = +25^\circ C$, $1mA \leq I_O \leq 100mA$ | - | - | 60 | mV |
| | | $1mA \leq I_O \leq 40mA$ | - | - | 30 | mV |
| Input Bias Current | I_{IB} | $T_J = +25^\circ C$ | - | - | 6.0 | mA |
| | | $T_J = +125^\circ C$ | - | - | 5.5 | mA |
| Input Bias Current Change | ΔI_{IB} | $-8V \geq V_I \geq -20V$ | - | - | 1.5 | mA |
| | | $1mA \leq I_O \leq 40mA$ | - | - | 0.1 | mA |
| Output Noise Voltage | V_n | $T_A = +25^\circ C$, $10Hz \leq f \leq 100kHz$ | - | 40 | - | μV |
| Long-Term Stability | $\Delta V_O/\Delta t$ | | - | 12 | - | mV/1kHrs |
| Ripple Rejection | RR | $-8V \geq V_I \geq -18V$, $f = 120Hz$, $T_J = +25^\circ C$ | 41 | 49 | - | dB |
| Input-Output Voltage Differential | $ V_I/V_O $ | $I_O = 40mA$, $T_J = +25^\circ C$ | - | 1.7 | - | V |

