

NTE1910 Integrated Circuit Positive 3 Terminal Voltage Regulator, 9V, 1A

Description:

The NTE1910 is a 3 terminal fixed positive voltage regulator in a TO220 type package. Stabilized fixed output voltage is obtained from unsteady DC input voltage without the use of external components.

Features:

- No External Components
- Output Current in Excess of 1A
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection
- Output Transistor Safe Area Compensation

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

| | |
|--|-------------------------------------|
| Input Voltage, V_I | 35V |
| Power Dissipation, P_D | 15W |
| Operating Ambient Temperature Range, T_{opr} | -30° to $+80^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -55° to $+150^\circ\text{C}$ |

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------|-----------------------|--|------|-----|------|------|
| Output Voltage | V_O | $T_J = 25^\circ\text{C}$ | 8.65 | 9.0 | 9.35 | V |
| Output Voltage Tolerance | V_O | $V_I = 12\text{V to } 24\text{V}, I_O = 5\text{mA to } 1\text{A}, T_J = 0^\circ \text{ to } +125^\circ\text{C}, P_D \leq 15\text{W}$ | 8.55 | – | 9.45 | V |
| Line Regulation | REG_{IN} | $V_I = 11.5\text{V to } 26\text{V}, T_J = 25^\circ\text{C}$ | – | 7 | 180 | mV |
| | | $V_I = 12\text{V to } 18\text{V}, T_J = 25^\circ\text{C}$ | – | 2 | 90 | mV |
| Load Regulation | REG_L | $I_O = 5\text{mA to } 1.5\text{A}, T_J = 25^\circ\text{C}$ | – | 12 | 180 | mV |
| | | $I_O = 250\text{mA to } 750\text{mA}, T_J = 25^\circ\text{C}$ | – | 4 | 90 | mV |
| Bias Current | I_{BIAS} | $T_J = 25^\circ\text{C}$ | – | 3.9 | 8.0 | mA |
| Input Bias Current Change | $\Delta I_{BIAS(IN)}$ | $V_I = 11.5\text{V to } 26\text{V}, T_J = 25^\circ\text{C}$ | – | – | 1 | mA |

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|-----------------------------|--|-----|------|-----|----------------------------|
| Load Bias Current Change | $\Delta I_{\text{BIAS(L)}}$ | $I_O = 5\text{mA to } 1.5\text{A}, T_J = 25^\circ\text{C}$ | – | – | 0.5 | mA |
| Output Noise Voltage | V_{no} | $f = 10\text{Hz to } 100\text{kHz}$ | – | 57 | – | μV |
| Ripple Rejection Ratio | RR | $V_I = 12\text{V to } 22\text{V}, I_O = 100\text{mA},$ $f = 120\text{Hz}$ | 56 | – | – | dB |
| Minimum Input/Output Voltage Difference | $V_{\text{DIF(min)}}$ | $I_O = 1\text{A}, T_J = 25^\circ\text{C}$ | – | 2 | – | V |
| Output Impedance | Z_O | $f = 1\text{kHz}$ | – | 16 | – | $\text{m}\Omega$ |
| Output Short Circuit Current | $I_{\text{O(short)}}$ | $V_I = 26\text{V}, T_J = 25^\circ\text{C}$ | – | 700 | – | mA |
| Peak Output Current | $I_{\text{O(peak)}}$ | $T_J = 25^\circ\text{C}$ | – | 2 | – | A |
| Output Voltage Temperature Coefficient | $\Delta V_O/T_A$ | $I_O = 5\text{mA}, T_J = 0^\circ \text{ to } +125^\circ\text{C}$ | – | –0.5 | – | $\text{mV}/^\circ\text{C}$ |

Note 1. The specified condition, $T_J = +25^\circ\text{C}$, means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Note 2. When not specified, $V_I = 15\text{V}, I_O = 500\text{mA}, C_I = 0.33\mu\text{f},$ and $C_O = 0.1\mu\text{f}.$

