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NTE1904 Integrated Circuit Positive 3 Terminal Voltage Regulator, Low Dropout Voltage, 3.3V, 1A

Description:

The NTE1904 is a positive voltage regulator in a TO220 type package and features very low dropout voltage and very low quiescent current making it particularly suitable for low noise, low power applications and specifically in battery powered systems.

Features:

- Very Low Dropout Voltage: 0.45V
- Very Low Quiescent Current
- Logic-Controlled Electronic Shutdown
- Internal Current and Thermal Limit

Absolute Maximum Ratings:

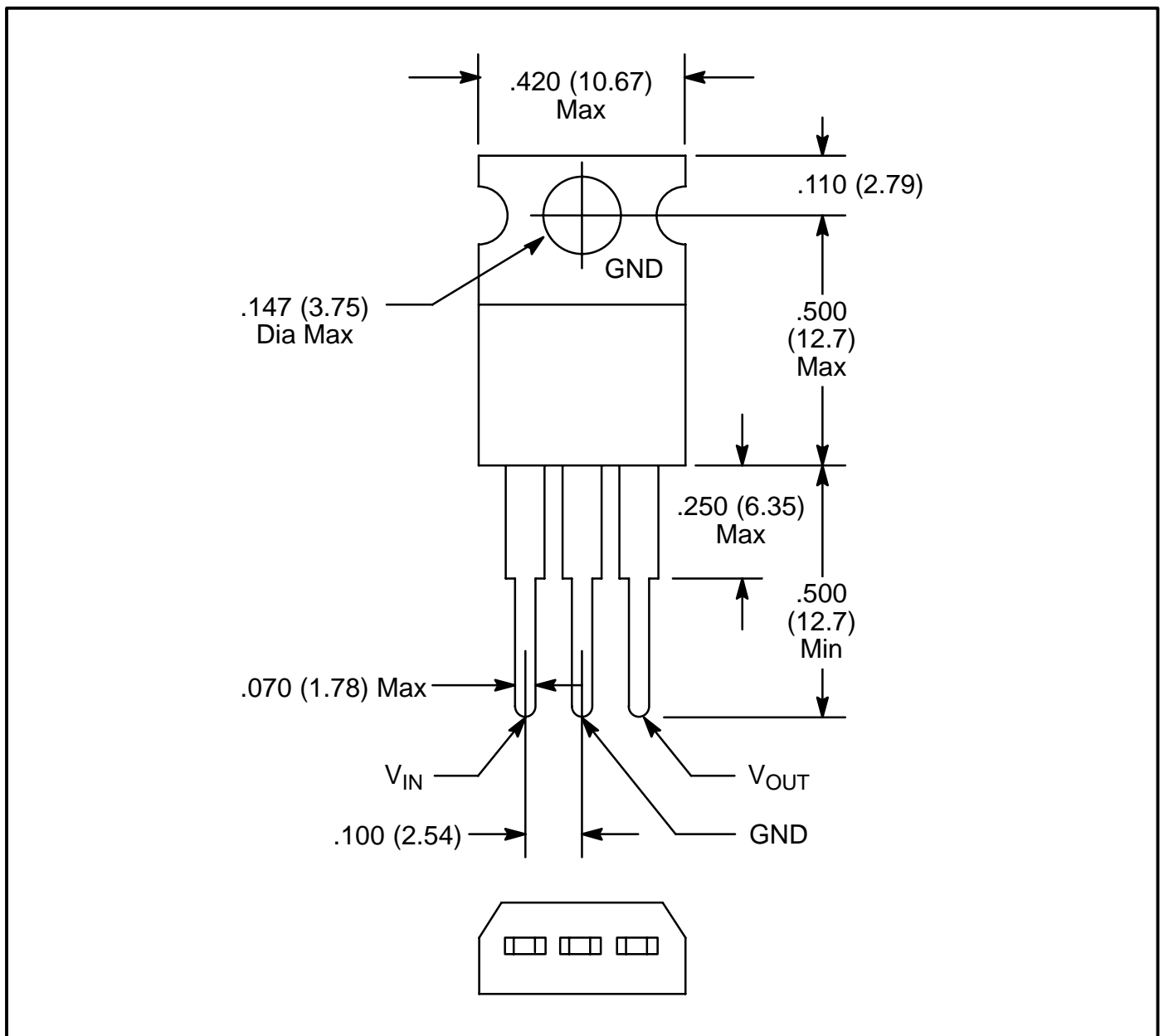
Input Voltage, V_i -0.5 to 40V
 Output Current, I_o Internally Limited
 Power Dissipation, P_{tot} Internally Limited
 Operating Junction Temperature Range, T_{opr} -40° to +125°C
 Storage Temperature Range, T_{stg} -40° to +150°C
 Thermal Resistance, Junction-to-Case, R_{thJC} 3°C/W
 Thermal Resistance, Junction-to-Ambient, R_{thJA} 50°C/W

Electrical Characteristics: ($T_J = +25^\circ\text{C}$, $C_i = 0.1\mu\text{F}$, $C_o = 2.2\mu\text{F}$, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------|--------------|---|-------|-----|-------|---------------|
| Output Voltage | V_o | $I_o = 50\text{mA}$, $V_i = 5.3\text{V}$ | 3.234 | 3.3 | 3.366 | V |
| | | $-25^\circ < T_A < +85^\circ\text{C}$ | 3.168 | - | 3.432 | V |
| Operating Input Voltage | V_i | $I_o = 500\text{mA}$ | - | - | 16 | V |
| Output Current Limit | I_{out} | | - | 1 | - | A |
| Line Regulation | Reg_{line} | $V_i = 4.3\text{V to } 16\text{V}$, $I_o = 5\text{ mA}$ | - | 2 | 12 | mV |
| Load Regulation | Reg_{load} | $V_i = 4.6\text{V}$, $I_o = 5\text{mA to } 500\text{mA}$ | - | 2 | 10 | mV |
| Quiescent Current ON Mode | I_d | $V_i = 4.3\text{V to } 16\text{V}$, $I_o = 0\text{mA}$ | - | 0.5 | 1.0 | mA |
| | | $V_i = 4.6\text{V to } 16\text{V}$, $I_o = 500\text{mA}$ | - | - | 12 | mA |
| | | $V_i = 6\text{V}$ | - | 50 | 100 | μA |
| OFF Mode | | | | | | |

Electrical Characteristics (Cont'd): ($T_J = +25^\circ\text{C}$, $C_i = 0.1\mu\text{F}$, $C_o = 2.2\mu\text{F}$, unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|---------------------------|----------|--|--------------------|-----|------|---------------|----|
| Supply Voltage Rejection | SVR | $I_O = 5\text{mA}$, $V_i = 5.3\text{V} \pm 1\text{V}$ | $f = 120\text{Hz}$ | - | 80 | - | dB |
| | | | $f = 1\text{kHz}$ | - | 75 | - | dB |
| | | | $f = 10\text{kHz}$ | - | 60 | - | dB |
| Output Noise Voltage | e_N | $B = 10\text{Hz to } 100\text{kHz}$ | - | 50 | - | μV | |
| Dropout Voltage | V_d | $I_O = 200\text{mA}$ | - | 0.2 | 0.35 | V | |
| | | $I_O = 500\text{mA}$ | - | 0.4 | 0.7 | V | |
| Control Input Logic, Low | V_{il} | $-40^\circ < T_A < +125^\circ\text{C}$ | - | - | 0.8 | V | |
| Control Input Logic, High | V_{ih} | | 2 | - | - | V | |
| Control Input Current | I_i | $V_i = 6\text{V}$, $V_c = 6\text{V}$ | - | 10 | - | μA | |
| Output Bypass Capacitance | C_O | $\text{ESR} = 0.1\Omega \text{ to } 10\Omega$, $I_O = 0 \text{ to } 500\text{mA}$ | 2 | 10 | - | μF | |



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