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NTE1957
Integrated Circuit
Positive 3 Terminal Voltage Regulator, Low Dropout Voltage, 9V, 1A

Description:

The NTE1957 is a positive voltage regulator in a TO220 type package with a low input/output voltage. This device is suitable for low–voltage, battery–driven equipment, and home appliances and industrial equipment with great fluctuation of the supply voltage.

Features:

- Dropout Voltage Typically 0.5V @ I_O = 1A
- Output Current in Excess of 1A
- Output Voltage Trimmed Before Assembly
- Reverse Battery Protection
- Internal Short Circuit Current Limit
- Mirror Image Insertion Protection

Absolute Maximum Ratings: (Note 1 unless otherwise specified)

Supply Voltage, V_{IN} 26V
Internal Power Dissipation (Note 2), P_D . . . . . Internally Limited
Maximum Junction Temperature, T_J . . . . . +150°C
Operating Ambient Temperature Range, T_{opr} . . . . . –40° to +125°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (During Soldering, 10sec max.), T_L . . . . . +260°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 60°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 4°C/W
ESD Susceptibility (Note 3) 2kV

Recommended Operating Conditions: (Note 1 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage Range	V_{IN}		10.5	–	26.0	V
Temperature Range	T_J		–40	–	+125	°C

Note 1. Absolute Maximum Ratings are limits beyond which damage to the device may occur. Operating Conditions are conditions under which the device functions but the specifications might not be guaranteed. For guaranteed specifications and test conditions, see the Electrical Characteristics.

Note 2. The maximum allowable power dissipation is a function of the maximum junction temperature, T_J, the junction–to–ambient thermal resistance, R_{thJA}, and the ambient temperature, T_A. Exceeding the maximum allowable dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. The value of R_{thJA} (for devices in still air with no heatsink) is +60/W. The effective value of R_{thJA} can be reduced by using a heatsink.

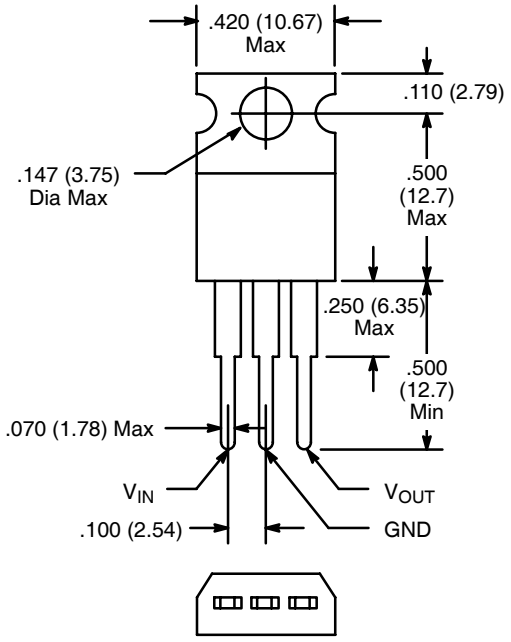
Note 3. ESD rating is based on the human body model, 100pF discharged through 1.5kΩ.

Electrical Characteristics: (V_{IN} = 14V, I_O = 1A, T_A = T_J = +25°C unless otherwise specified)

Parameter	Test Conditions		Min	Typ	Max	Unit
Output Voltage	5mA ≤ I_O ≤ 1A		8.73	9.00	9.27	V
		Note 4	8.55	9.00	9.45	V
Line Regulation	11V ≤ V_{IN} ≤ 26V, I_O = 5mA		–	20	90	mV
Load Regulation	50mA ≤ I_O ≤ 1A		–	60	90	mV
		Note 4	–	–	150	mV
Output Impedance	100mADC and 20mA_{rms}, f_o = 120Hz		–	60	–	mΩ
Quiescent Current	11V ≤ V_{IN} ≤ 26V, I_O = 5mA		–	10	15	mA
		Note 4	–	–	20	mA
	V_{IN} = 14V, I_O = 1A		–	30	45	mA
		Note 4	–	–	60	mA
Output Noise Voltage	f_o = 10Hz to 100kHz, I_O = 5mA		–	270	–	μV_{rms}
Ripple Rejection	f_o = 120Hz, 1V_{rms}, I_O = 100mA		52	64	–	dB
		Note 4	46	–	–	dB
Long Term Stability			–	34	–	mV/1000 Hr
Dropout Voltage	I_O = 1A		–	0.8	–	V
		Note 4	–	–	1.0	V
	I_O = 100mA		–	110	150	mV
		Note 4	–	–	200	mV
Short Circuit Current	Note 5		1.6	1.9	–	A
Maximum Line Transient	R_O = 100Ω, T ≤ 100ms		60	75	–	V
		Note 4	60	–	–	V
Reverse Polarity DC Input Voltage	R_O = 100Ω		–15	–30	–	V
		Note 4	–15	–	–	V
Reverse Polarity Transient Input Voltage	R_O = 100Ω, T ≤ 100ms		–50	–75	–	V
		Note 4	–50	–	–	V

Note 4. Limits apply for 10.5V ≤ V_{IN} ≤ 26V, –40° ≤ T_J ≤ +125°C.

Note 5. Output current will decrease with increasing temperature but will not drop below 1A at the maximum specified temperature.



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