



NTE1902 Integrated Circuit 3 Terminal Positive Voltage Regulator 9V, 100mA

Features:

- Output Current up to 100mA
- No External Components
- Internal Thermal Overload Protection
- Internal Short-Circuit Current Limiting
- Output Voltage Tolerances of $\pm 5\%$ over the Temperature Range

Absolute Maximum Ratings:

Input Voltage, V_{IN} 35V
 Internal Power Dissipation, P_D Internally Limited
 Operating Junction Temperature Range, T_J 0° to $+125^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+150^\circ\text{C}$
 Lead Temperature (During Soldering, 10sec), T_L $+260^\circ\text{C}$

Electrical Characteristics: ($V_{OUT} = 9\text{V}$, $V_{IN} = 15\text{V}$, $0^\circ \leq T_J \leq +125^\circ\text{C}$, $I_O = 40\text{mA}$, $C_{IN} = 0.33\mu\text{F}$, $C_{OUT} = 0.1\mu\text{F}$, Note 1 unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = +25^\circ\text{C}$	8.64	9.00	9.36	V
		$1\text{mA} \leq I_O \leq 70\text{mA}$, $11.5\text{V} \leq V_{IN} \leq 24\text{V}$	8.55	9.00	9.45	V
Line Regulation	Reg_{Line}	$T_J = +25^\circ\text{C}$, $11.5\text{V} \leq V_{IN} \leq 24\text{V}$	—	90	200	mV
		$13\text{V} \leq V_{IN} \leq 24\text{V}$	—	100	150	mV
Load Regulation	Reg_{Load}	$T_J = +25^\circ\text{C}$, $1\text{mA} \leq I_O \leq 100\text{mA}$	—	20	90	mV
		$1\text{mA} \leq I_O \leq 40\text{mA}$	—	10	45	mV
Quiescent Current	I_B		—	2.1	5.5	mA
Quiescent Current Change	I_B	With line, $11.5\text{V} \leq V_{IN} \leq 24\text{V}$	—	—	1.5	mA
		With load, $1\text{mA} \leq I_O \leq 40\text{mA}$	—	—	0.1	mA
Output Noise Voltage	V_N	$T_A = +25^\circ\text{C}$, $f = 10\text{Hz}$ to 10kHz	—	70	—	μV
Temperature Coefficient of V_{OUT}		$I_{OUT} = 5\text{mA}$	—	-0.9	—	$\text{mV}/^\circ\text{C}$
Ripple Rejection	RR	$T_J = +25^\circ\text{C}$, $15\text{V} \leq V_{IN} \leq 25\text{V}$, $f = 120\text{Hz}$	38	44	—	dB
Dropout Voltage	V_{DO}	$T_J = +25^\circ\text{C}$	—	1.4	—	V
Peak Output/Short Circuit Current	I_{pk}/I_{OS}	$T_J = +25^\circ\text{C}$	—	140	—	mA

Note 1. The maximum steady state usable output current and input voltage are very dependent on the heat sink and/or lead length of the package. The data above represents pulse test conditions with junction temperatures as indicated at the initiation of the test.

