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## 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,  $T_J$  .....  $0^\circ$  to  $+125^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-55^\circ$  to  $+150^\circ\text{C}$   
 Lead Temperature (During Soldering, 10sec),  $T_L$  .....  $+260^\circ\text{C}$

**Electrical Characteristics:** ( $V_{OUT} = 9V$ ,  $V_{IN} = 15V$ ,  $0^\circ \leq T_J \leq +125^\circ\text{C}$ ,  $I_O = 40\text{mA}$ ,  $C_{IN} = 0.33\mu\text{F}$ ,  $C_{OUT} = 0.1\mu\text{F}$ , 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 <sub>Line</sub>	$T_J = +25^\circ\text{C}$	$11.5\text{V} \leq V_{IN} \leq 24\text{V}$	–	90	200	mV
			$13\text{V} \leq V_{IN} \leq 24\text{V}$	–	100	150	mV
Load Regulation	Reg <sub>Load</sub>	$T_J = +25^\circ\text{C}$	$1\text{mA} \leq I_O \leq 100\text{mA}$	–	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 $10\text{kHz}$	–	70	–	$\mu\text{V}$	
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.

