

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	

