

NTE1979 Integrated Circuit Negative 3 Terminal Voltage Regulator, –8V, 100mA

Description:

The NTE1979 is a 3–terminal fixed negative output voltage regulator in a TO92 type package designed for use in power circuits with current capacity up to 100mA. Stabilized fixed output voltage is obtained from unstable DC input voltage without the use of external components.

Features:

- No External Components
- Output Current in Excess of 100mA
- Built–In Short–Circuit Current Limiting
- Built–In Thermal Overload Protection

Absolute Maximum Ratings: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Input Voltage, V_I –35V
Power Dissipation (Note 1), P_D 650mW
Operating Ambient Temperature Range, T_{opr} –20° to +80°C
Storage Temperature Range, T_{stg} –55° to +150°C

Note 1. When T_J exceeds +150°C, the internal circuit cuts off the output.

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$, $V_I = -14\text{V}$, $I_O = 40\text{mA}$, $C_i = 2\mu\text{F}$, $C_o = 1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = +25^{\circ}\text{C}$	–7.68	–8.0	–8.32	V
Output Voltage Tolerance	V_O	$V_I = -11\text{V to } -23\text{V}$, $I_O = 1\text{mA to } 70\text{mA}$, $T_J = 0^{\circ} \text{ to } +125^{\circ}\text{C}$	–7.6	–	–8.4	V
Line Regulation	REG_{IN}	$V_I = -10\text{V to } -24\text{V}$, $T_J = +25^{\circ}\text{C}$	–	–	160	mV
		$V_I = -11\text{V to } -21\text{V}$, $T_J = +25^{\circ}\text{C}$	–	–	80	mV
Load Regulation	REG_L	$I_O = 1\text{mA to } 100\text{mA}$, $T_J = +25^{\circ}\text{C}$	–	15	80	mV
		$I_O = 1\text{mA to } 40\text{mA}$, $T_J = +25^{\circ}\text{C}$	–	7	40	mA

Note 2. The specified condition $T_J = +25^{\circ}\text{C}$ means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_I = -14\text{V}$, $I_O = 40\text{mA}$, $C_i = 2\mu\text{F}$, $C_o = 1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Bias Current	I_{BIAS}	$T_J = +25^\circ\text{C}$	–	3	5	mA
Input Bias Current Fluctuation	$\Delta I_{\text{BIAS(IN)}}$	$V_I = -11\text{V to } -23\text{V}$, $T_J = +25^\circ\text{C}$	–	–	0.5	mA
	$\Delta I_{\text{BIAS(L)}}$	$I_O = 1\text{mA to } 40\text{mA}$, $T_J = +25^\circ\text{C}$	–	–	0.1	mA
Output Noise Voltage	V_{no}	$f = 10\text{Hz to } 100\text{kHz}$, $T_A = +25^\circ\text{C}$	–	52	–	μV
Ripple Rejection Ratio	RR	$V_I = -11\text{V to } -21\text{V}$, $f = 120\text{Hz}$, $T_A = +25^\circ\text{C}$	54	–	–	dB
Minimum I/O Voltage Difference	$V_{\text{DIF(min)}}$	$T_J = +25^\circ\text{C}$	–	0.8	–	V
Output Short Circuit Current	$I_{\text{O(short)}}$	$V_I = -35\text{V}$, $T_J = +25^\circ\text{C}$	–	200	–	mA
Output Voltage Temperature Coefficient	$\Delta V_O/T_A$	$I_O = 5\text{mA}$, $T_J = 0^\circ \text{ to } +125^\circ\text{C}$	–	–0.6	–	$\text{mV}/^\circ\text{C}$

Note 2. The specified condition $T_J = +25^\circ\text{C}$ means that the test should be carried out with the test time so short (within 10ms) that the drift in characteristic value due to the rise in chip junction temperature can be ignored.

