NTE1908
Integrated Circuit
Positive 3 Terminal Voltage Regulator,
24V, 100mA

Description:

The NTE1908 voltage regulator is an inexpensive, easy–to–use device in a TO92 type package suitable for a multitude of applications that require a regulated supply of up to 100mA. This device features internal current limiting and thermal shutdown making the NTE1908 remarkably rugged. No external components are required in many applications.

The NTE1908 offers a substantial performance advantage over the traditional zener diode–resistor combination, as output impedance and quiescent current are substantially reduced.

Features:

● Low Cost
● ±5% Tolerance
● Internal Short–Circuit Current Limiting
● Internal Thermal Overload Protection
● No External Components Required
● Complementary to NTE1909 Negative Regulator

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Input Voltage, V_I 40V
Operating Junction Temperature Range, T_J . . . . 0° to +150°C
Storage Junction Temperature Range, T_{stg} . . . . −65° to +150°C

Electrical Characteristics: (V_I = 33V, I_O = 40mA, C_I = 0.33µF, C_O = 0.1µF, 0° < T_J < +125°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_O	T_J = +25°C		22.1	24.0	25.9	V
		28V ≤ V_I ≤ 38V, 1mA ≤ I_O ≤ 40mA		21.6	–	26.4	V
		28V ≤ V_I ≤ 33V, 1mA ≤ I_O ≤ 70mA		21.6	–	26.4	V
Line Regulation	Reg_{line}	T_J = +25°C, I_O = 40mA	27.5V ≤ V_I ≤ 38V	–	35	350	mV
			28V ≤ V_I ≤ 80V	–	30	300	mV

Electrical Characteristics (Cont'd): $(V_I = 33V, I_O = 40mA, C_I = 0.33\mu F, C_O = 0.1\mu F,$ $0° < T_J < +125°C$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Load Regulation	Reg_{load}	$T_J = +25°C$	$1mA \leq I_O \leq 100mA$	–	40	200	mV
			$1mA \leq I_O \leq 40mA$	–	20	100	mV
Input Bias Current	I_{IB}	$T_J = +25°C$		–	3.1	6.5	mA
		$T_J = +125°C$		–	–	6.0	mA
Input Bias Current Change	ΔI_{IB}	$28V \leq V_I \leq 38V$		–	–	1.5	mA
		$1mA \leq I_O \leq 40mA$		–	–	0.2	mA
Output Noise Voltage	V_n	$T_A = +25°C, 10Hz \leq f \leq 100kHz$		–	200	–	μV
Long–Term Stability	$\Delta V_O/\Delta t$			–	56	–	mV/1kHrs
Ripple Rejection	RR	$I_O = 40mA, f = 120Hz, 29V \leq V_I \leq 35V,$ $T_J = +25°C$		30	43	–	dB
Input–Output Voltage Differential	V_I/V_O	$T_J = +25°C$		–	1.7	–	V