NTE1905
Integrated Circuit
Negative 3 Terminal Voltage Regulator,
−15V, 100mA

Description:

The NTE1905 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 NTE1905 remarkably rugged. No external components are required in many applications.

The NTE1905 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

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

Input Voltage, V_I . . . . −35V

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		−14.4	−15	−15.6	V
		−17.5V ≥ V_I ≥ −30V, 1.0mA ≤ I_O ≤ 40mA		−14.25	−	−15.75	V
		V_I = −23V, 1.0mA ≤ I_O ≤ 70mA		−14.25	−	−15.75	V
Line Regulation	Reg_{line}	T_J = +25°C	−17.5V ≥ V_I ≥ −30V	−	−	300	mV
			−20V ≥ V_I ≥ −30V	−	−	250	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}	$T_J = +25°C$	$1.0mA \leq I_O \leq 100mA$	–	–	150	mV
			$1.0mA \leq I_O \leq 40mA$	–	–	75	mV
Input Bias Current	I_{IB}	$T_J = +25°C$		–	–	6.5	mA
		$T_J = +125°C$		–	–	6.0	mA
Input Bias Current Change	ΔI_{IB}	$-20V \geq V_I \geq -30V$		–	–	1.5	mA
		$1.0mA \leq I_O \leq 40mA$		–	–	0.1	mA
Output Noise Voltage	V_n	$T_A = +25°C$, $10Hz \leq f \leq 100kHz$		–	90	–	μV
Long–Term Stability	$\Delta V_O/\Delta t$			–	30	–	mV/1.0kHrs
Ripple Rejection	RR	$-18.5V \leq V_I \leq -28.5V$, $f = 120Hz$		34	39	–	dB
Input–Output Voltage Differential	$|V_I/V_O|$	$I_O = 40mA$, $T_J = +25°C$		–	1.7	–	V