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NTE1913
Integrated Circuit
Negative 3 Terminal Voltage Regulator, –5V, 1.5A

Description:

The NTE1913 is a 3 terminal fixed negative voltage regulator in a TO3 type package suitable for numerous applications requiring up to 1.5A. This device employs internal current limiting safe area protection and thermal shutdown for protection against virtually all overload conditions.

Low ground pin current allows output voltage to be easily boosted above the preset value with a resister divider. The low quiescent current rain of the NTE1913 with a specified maximum change with line and load ensures good regulation in the voltages boosted mode.

Features:

- Thermal, Short Circuit, and Safe Area Protection
- High Ripple Rejection
- 4% Preset Output Voltage

Absolute Maximum Ratings:

Input Voltage, V_{IN} . . . . . –35V
Input–Output Differential, $V_{IN}–V_O$ 25V
Power Dissipation (Note 1), P_D . . . . . Internally Limited
Operating Junction Temperature Range, T_J . . . . . 0° to +125°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (During Soldering, 10sec Max), T_L . . . . . +230°C

Note 1. Thermal resistance, junction–to–ambient is +50°C/W (no heat sink) and +5°C/W (infinite heat sink).

Electrical Characteristics: ($0° \le T_J \le +125°C$, $P_D \le 1.5W$, $V_O = -5V$, $V_{IN} = -10V$, $I_O = 500mA$, $C_{IN} = 2.2\mu F$, $C_{OUT} = 1\mu F$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = +25°C$	–4.8	–5.0	–5.2	V
		$-20V \le V_{IN} \le -7.5V$, $5mA \le I_O \le 1A$, $P \le 15W$	–7.45	–5.00	–5.25	V
Line Regulation	Reg_{Line}	$T_J = +25°C$, $-25V \le V_{IN} \le -7V$, Note 2	–	8	50	mV
		$T_J = +25°C$, $-12V \le V_{IN} \le -8V$, Note 2	–	2	15	mV
Load Regulation	Reg_{Load}	$T_J = +25°C$, $5mA \le I_O \le 1.5A$, Note 2	–	15	100	mV
		$T_J = +25°C$, $250mA \le I_O \le 750A$, Note 2	–	5	50	mV
Quiescent Current	I_Q	$T_J = +25°C$	–	1	2	mA
Quiescent Current Line	$I_{Q(Line)}$	$-25V \le V_{IN} \le -7V$	–	–	0.5	mA
Quiescent Current Load	$I_{Q(Load)}$	$5mA \le I_O \le 1.5A$	–	–	0.5	mA
Output Noise Voltage	V_N	$T_A = +25°C$, f = 10Hz to 100Hz	–	125	–	µV
Ripple Rejection	RR	$-18V \le V_{IN} \le -8V$, f = 120Hz	54	66	–	dB
Dropout Voltage		$T_J = +25°C$, $I_O = 1A$	–	1.1	–	V
peak Output Current	$I_O$max	$T_J = +25°C$	–	2.2	–	A
Temperature Coefficient		$0° \le T_J \le +100°C$, $I_O = 5mA$	–	0.4	–	mV/°C

Note 2. Regulation is measured at a constant temperature by pulse testing with a low duty cycle. Change in output voltage due to heating effects must be taken into account.