



NTE961 Linear Integrated Circuit Voltage Regulator, Negative, 5V, 1A

Description:

The NTE961 voltage regulator employs current limiting, thermal shutdown, and safe-area compensation which makes it remarkably rugged under most operating conditions. With adequate heat-sinking they can deliver output currents in excess of 1.0 amperes.

Features:

- No External Components Required
- Internal Thermal Overload Protection
- Internal Short-Circuit Current Limiting
- Output Transistor Safe-Area Compensation

Absolute Maximum Ratings:

Input Voltage, V_{IN} -35V
 Input-Output Differential 25V
 Internal 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 (Soldering, 10sec.), T_L +230°C

Note 1. For calculations of junction temperature rise due to power dissipation, thermal resistance junction to ambient (Θ_{JA}) is 50°C/W (no heat sink) and 5°C/W (infinite heat sink).

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	$T_J = +25^\circ C$,	-4.8	-5.0	-5.2	V
		$5mA \leq I_O \leq 1A$, $P \leq 15W$	-4.75	-	-5.25	V
			(-20 $\leq V_{IN} \leq -7$)			V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Line Regulation	ΔV_O	$T_J = +25^{\circ}C$, Note 2	-	8	50	mV
			$(-25 \leq V_{IN} \leq -7)$			V
			-	2	15	mV
			$(-12 \leq V_{IN} \leq -8)$			V
Load Regulation	ΔV_O	$T_J = +25^{\circ}C$	-	15	100	mV
		Note 2	$5mA \leq I_O \leq 1.5A$	-	5	50
Quiescent Current	I_Q	$T_J = +25^{\circ}C$	-	1	2	mA
Quiescent Current Change	ΔI_Q	With Line	-	-	0.5	mA
		$(-25 \leq V_{IN} \leq -7)$			V	
		With Load, $5mA \leq I_O \leq 1A$	-	-	0.5	mA
Output Noise Voltage	V_n	$T_A = +25^{\circ}C$, $10Hz \leq f \leq 100Hz$	-	125	-	μV
Ripple Rejection		$f = 120Hz$	54	66	-	dB
			$(-18 \leq V_{IN} \leq -8)$			V
Dropout Voltage		$T_J = +25^{\circ}C$, $I_O = 1A$	-	1.1	-	V
Peak Output Current	I_{OMAX}	$T_J = +25^{\circ}C$	-	2.2	-	A
Average Temperature Coefficient of Output Voltage		$I_O = 5mA$, $0^{\circ}C \leq T_J \leq 100^{\circ}C$	-	0.4	-	$mV/^{\circ}C$

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

