

NTE171 Silicon NPN Transistor Audio/Video Amplifier

Description:

The NTE171 is a silicon NPN transistor in a TO202 type case designed for high-voltage TV video and chroma output circuits, high-voltage linear amplifiers, and high-voltage transistor regulators.

Features:

- High Collector–Emitter Breakdown Voltage: $V_{(BR)CER} = 300V @ I_C = 1mA$
- Low Collector–Base Capacitance: $C_{cb} = 3pF \text{ Max @ } V_{CB} = 20V$

Absolute Maximum Ratings:

Collector–Emitter Voltage ($I_C = 1mA, R_{BE} = 10k\Omega$, Note 1), V_{CER}	300V
Collector–Base Voltage, V_{CBO}	300V
Emitter–Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	100mA
Peak	700mA
Base Current, I_B	250mA
Total Power Dissipation ($T_A = +25^\circ C$), P_D	1.67W
Derate Above $25^\circ C$	13.3mW/ $^\circ C$
Total Power Dissipation ($T_C = +25^\circ C$), P_D	6.25W
Derate Above $25^\circ C$	50mW/ $^\circ C$
Operating Junction Temperature Range, T_J	-55° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$
Thermal Resistance, Junction to Ambient, $R_{\theta JA}$	$75^\circ C/W$
Thermal Resistance, Junction to Case, $R_{\theta JC}$	$20^\circ C/W$
Lead Temperature (During Soldering, 1/16" from case, 10sec), T_L	$+260^\circ C$

Note 1. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C = 1\text{mA}, I_B = 0$, Note 1	300	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 300\text{V}, I_E = 0$	–	–	10	μA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5\text{V}, I_C = 0$	–	–	10	μA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 4\text{mA}, V_{CE} = 10\text{V}$	20	–	–	
		$I_C = 20\text{mA}, V_{CE} = 10\text{V}$	30	–	90	
		$I_C = 40\text{mA}, V_{CE} = 10\text{V}$	20	–	–	
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 20\text{mA}, V_{CE} = 10\text{V}, f = 20\text{MHz}$	50	–	–	MHz
Collector–Base Capacitance	C_{cb}	$V_{CB} = 20\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	3	pF

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

