

NTE179
Germanium PNP Transistor
Audio Power Amplifier, High Current Switch

Description:

The NTE179 is a PNP type germanium transistor in a TO3 type case designed for high-current switching applications requiring low saturation voltages, fast switching times, and good safe operating conditions.

Features:

- Low Collector–Emitter Saturation Voltage:
 $V_{CE(sat)} = 0.5V$ (Max) @ $I_C = 5A$

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	40V
Collector–Base Voltage, V_{CB}	90V
Emitter–Base Voltage, V_{EB}	2V
Continuous Collector Current, I_C	25A
Base Current, I_B	5A
Total Device Dissipation ($T_C = +25^\circ C$), P_D	106W
Derate above $+25^\circ C$	1.25W/ $^\circ C$
Operating Junction Temperature, T_J	-65° to $+110^\circ C$
Storage Junction Temperature, T_{stg}	-65° to $+110^\circ C$
Thermal Resistance, Junction–to–Case, R_{thJC}	0.8 $^\circ C/W$

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100mA, I_B = 0$	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100mA, I_C = 0$	2	–	–	V
Collector–Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 5A$	40	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 2V, I_E = 0$	–	–	200	μA
	I_{CEX}	$V_{CE} = 90V, V_{BE(off)} = 0.2V$	–	–	20	mA
Collector–Emitter Cutoff Current	I_{CER}	$V_{CE} = 50V, R_{EB} = 100\Omega$	–	–	10	mA

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 2\text{V}$	65	–	300	
		$I_C = 5\text{A}, V_{CE} = 2\text{V}$	55	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 100\text{mA}$	–	–	0.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	$I_C = 1\text{A}, V_{CE} = 2\text{V}$	–	–	0.45	V
		$I_C = 5\text{A}, V_{CE} = 2\text{V}$	–	–	0.60	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	$I_C = 500\text{mA}, V_{CE} = 10\text{V}$	500	–	–	kHz

