

## 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:  
 $V_{CE(sat)} = 0.5V \text{ (Max) @ } I_C = 5A$

#### **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, $T_J$ .....	$-65^\circ$ to $+110^\circ C$
Storage Junction Temperature, $T_{stg}$ .....	$-65^\circ$ 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
<b>OFF Characteristics</b>						
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	$\mu A$
	$I_{CEX}$	$V_{CE} = 90V, V_{BE(off)} = 0.2V$	–	–	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
<b>ON Characteristics</b>						
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
<b>Dynamic Characteristics</b>						
Current Gain–Bandwidth Product	$f_T$	$I_C = 500\text{mA}, V_{CE} = 10\text{V}$	500	–	–	kHz

