



**ELECTRONICS, INC.**  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089

## NTE102A (PNP) & NTE103A (NPN) Germanium Complementary Transistors Medium Power Amplifier

### **Description:**

The NTE102A (PNP) and NTE103A (NPN) are Germanium complementary transistors in a TO1 type package designed for use as a medium power amplifier.

### **Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

Collector–Base Voltage, $V_{CBO}$ .....	32V
Emitter–Base Voltage, $V_{EBO}$ .....	10V
Collector Current, $I_C$ .....	1A
Power Dissipation, $P_C$ .....	650mW
Operating Junction Temperature, $T_J$ .....	+90°C
Storage Temperature Range, $T_{stg}$ .....	–55° to +90°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Voltage	$V_{CBO}$	$I_C = 200\mu\text{A}$ , $I_E = 0$	32	–	–	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 10\text{V}$ , $I_E = 0$	–	–	25	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CB} = 0$ , $I_E = 50\text{mA}$	63	–	295	
	$h_{FE2}$	$V_{CB} = 0$ , $I_E = 300\text{mA}$	69	–	273	
Common–Emitter Cutoff Frequency	$f_{\alpha e}$	$V_{CB} = 2\text{V}$ , $I_E = 10\text{mA}$	10	–	–	kHz
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$ , $I_B = 50\text{mA}$	–	0.17	–	V
Noise Figure	NF	$V_{CB} = 5\text{V}$ , $I_E = 5\text{mA}$ , $f = 1\text{kHz}$	–	–	25	dB

