



## NTE152 (NPN) & NTE153 (PNP) Silicon Complementary Transistors Audio Power Amplifier, Switch

### **Description:**

The NTE152 (NPN) and NTE153 (PNP) are silicon complementary transistors in a standard TO220 type package designed for general purpose medium power switching and amplifier applications.

### **Features:**

- Good Linearity of  $h_{FE}$

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

Collector–Base Voltage, $V_{CBO}$	90V
Collector–Emitter Voltage, $V_{CEO}$	90V
Emitter–Base Voltage, $V_{EBO}$	5V
Collector Current, $I_C$	4A
Emitter Current, $I_E$	–4A
Base Current, $I_B$	3A
Collector Power Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_C$	40W
Junction Temperature, $T_J$	+150°C
Storage Temperature Range, $T_{stg}$	–55° to +150°C

Note 1. NTE152MP is a matched pair of NTE152 with their DC Current Gain ( $h_{FE}$ ) matched to within 10% of each other.

Note 2. Matched complementary pairs are available upon request (NTE55MCP). Matched complementary pairs have their gain specification ( $h_{FE}$ ) matched to within 10% of each other.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50\text{mA}, I_B = 0$	90	–	–	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 90\text{V}, I_E = 0$	–	–	20	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5\text{V}, I_C = 0$	–	–	10	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$	40	–	200	
	$h_{FE2}$	$V_{CE} = 5\text{V}, I_C = 3\text{A}$	15	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 0.3\text{A}$	–	–	1.5	V
Base–Emitter Voltage	$V_{BE}$	$V_{CE} = 5\text{V}, I_C = 3\text{A}$	–	–	1.5	V
Transition Frequency	$f_T$	$V_{CE} = 5\text{V}, I_C = 0.5\text{A}$	3	8	–	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	85	–	pF

