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NTE289 (NPN) & NTE290 (PNP) Silicon Complementary Transistors Audio Power Amplifier, Switch

Applications:

- 1W Audio Power Amplifier Applications
- Switching Applications

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

Collector–Base Voltage, V_{CBO}	35V
Collector–Emitter Voltage, V_{CEO}	30V
Emitter–Base Voltage, V_{EBO}	5V
Collector Current, I_C	800mA
Emitter Current, I_E	800mA
Collector Power Dissipation, P_C	600mW
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	30	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 35\text{V}, I_E = 0$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	–	–	0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 50\text{mA}, \text{Note 2}$	120	–	240	
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}, \text{Note 2}$	35	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 20\text{mA}, \text{Note 2}$	–	–	0.8	V
Base–Emitter Voltage	V_{BE}	$V_{CE} = 2\text{V}, I_C = 500\text{mA}, \text{Note 2}$	–	–	1.1	V
Current–Gain Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	–	140	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	22	30	pF
Switching Time		$V_{CC} = 10\text{V}, V_{BB} = 3\text{V}, \text{Duty Cycle} \leq 2\%$				
Turn–On	t_{on}		–	50	–	ns
Storage	t_{stg}		–	400	–	ns
Fall	t_f	–	40	–	ns	

Note 1. NTE289MP is a matched pair of NTE289 with their DC Current Gain (h_{FE}) matched to within 10% of each other.

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

