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NTE192 (NPN) & NTE193 (PNP) NTE192A (NPN) & NTE193A (PNP) Silicon Complementary Transistors Audio Power Output

Description:

NTE192 (NPN)/NTE193 (PNP) and NTE192A (NPN)/NTE193A (PNP) are silicon complementary transistors in a TO92HS type package designed for use in general purpose industrial circuits. These devices are especially suited for high level linear amplifiers or medium speed switching circuits in industrial control applications.

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

Collector–Emitter Voltage, V_{CE0}	50V
Collector–Base Voltage, V_{CBO}	50V
Emitter–Base Voltage, V_{EBO}	5V
Continuous Collector Current (Note 1), I_C	500mA
Total Power Dissipation ($T_C = +25^\circ\text{C}$, Note 1), P_T	900mW
Derate Above 25°C	7.2mW/ $^\circ\text{C}$
Total Power Dissipation ($T_A = +25^\circ\text{C}$), P_T	560mW
Derate Above 25°C	4.47mW/ $^\circ\text{C}$
Operating Junction Temperature, T_J	+150 $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55 $^\circ$ to +150 $^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" \pm 1/32" from case for 10sec max), T_L	+260 $^\circ\text{C}$

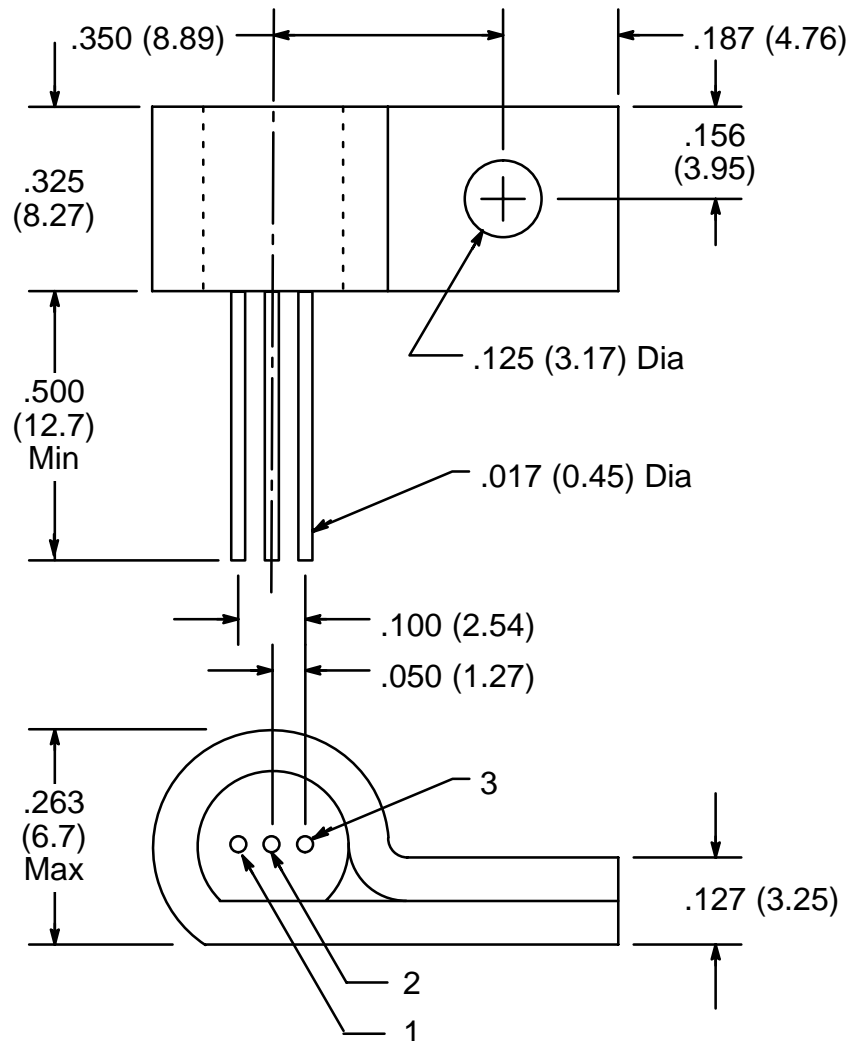
Note 1. Determined from power limitations due to saturation voltage at this current.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Characteristics						
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50\text{V}$	-	-	0.1	μA
		$V_{CB} = 50\text{V}$, $T_A = +100^\circ\text{C}$	-	-	15	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}$	-	-	0.1	μA
Collector Saturation Voltage	$V_{CE(sat)}$	$I_B = 3\text{mA}$, $I_C = 50\text{mA}$	-	-	0.30	V
Base Saturation Voltage	$V_{BE(sat)}$	$I_B = 3\text{mA}$, $I_C = 50\text{mA}$	-	-	0.85	V
DC Current Gain	h_{FE}	$V_{CE} = 4.5\text{V}$, $I_C = 2\text{mA}$	180	-	540	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small-Signal Characteristics						
Small-Signal Current Gain	h_{fe}	$V_C = 4.5\text{V}$, Frequency of Measurement = 1000cps	180	—	—	
		$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$, $f = 1\text{kc}$	150	—	300	
Input Impedance	h_{ie}	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$, $f = 1\text{kc}$	4200	—	8300	Ω
Output Admittance	h_{oe}	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$, $f = 1\text{kc}$	10	—	20	μmhos
Voltage Feedback Ratio	h_{re}	$V_{CE} = 10\text{V}$, $I_C = 1\text{mA}$, $f = 1\text{kc}$	0.2	—	0.4	$\times 10^{-3}$



Pin Number	1	2	3
NTE192/193	C	B	E
NTE192A/193A	B	C	E