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## NTE2670 (NPN) & NTE2671 (PNP) Silicon Complementary Transistors Silicon Perforated Emitter Technology Audio Power Output TO3PBL Type Package

**Description:**

The NTE2670 and NTE2671 are silicon complementary transistors in a TO3PBL type package that utilize Perforated Emitter technology specifically designed for high power audio output, disk head positioners and linear applications.

**Features:**

- High DC Current Gain –  $h_{FE} = 25 \text{ Min @ } I_C = 8A$
- Excellent Gain Linearity

**Absolute Maximum Ratings:**

Collector–Base Voltage, $V_{CBO}$ .....	400V
Collector–Emitter Voltage, $V_{CEO}$ .....	250V
Collector–Emitter Voltage (1.5V), $V_{CEX}$ .....	400V
Emitter–Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	16A
Peak (Note 1) .....	30A
Base Current–Continuous, $I_B$ .....	5A
Total Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....	200W
Derate Above $25^\circ C$ .....	1.43W/ $^\circ C$
Operating Junction Temperature Range, $T_J$ .....	$-55^\circ$ to $+150^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-55^\circ$ to $+150^\circ C$
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	0.7 $^\circ C/W$

Note 1. Pulse Test: Pulse Width = 5.0  $\mu s$ , Duty Cycle  $\leq 10\%$ .

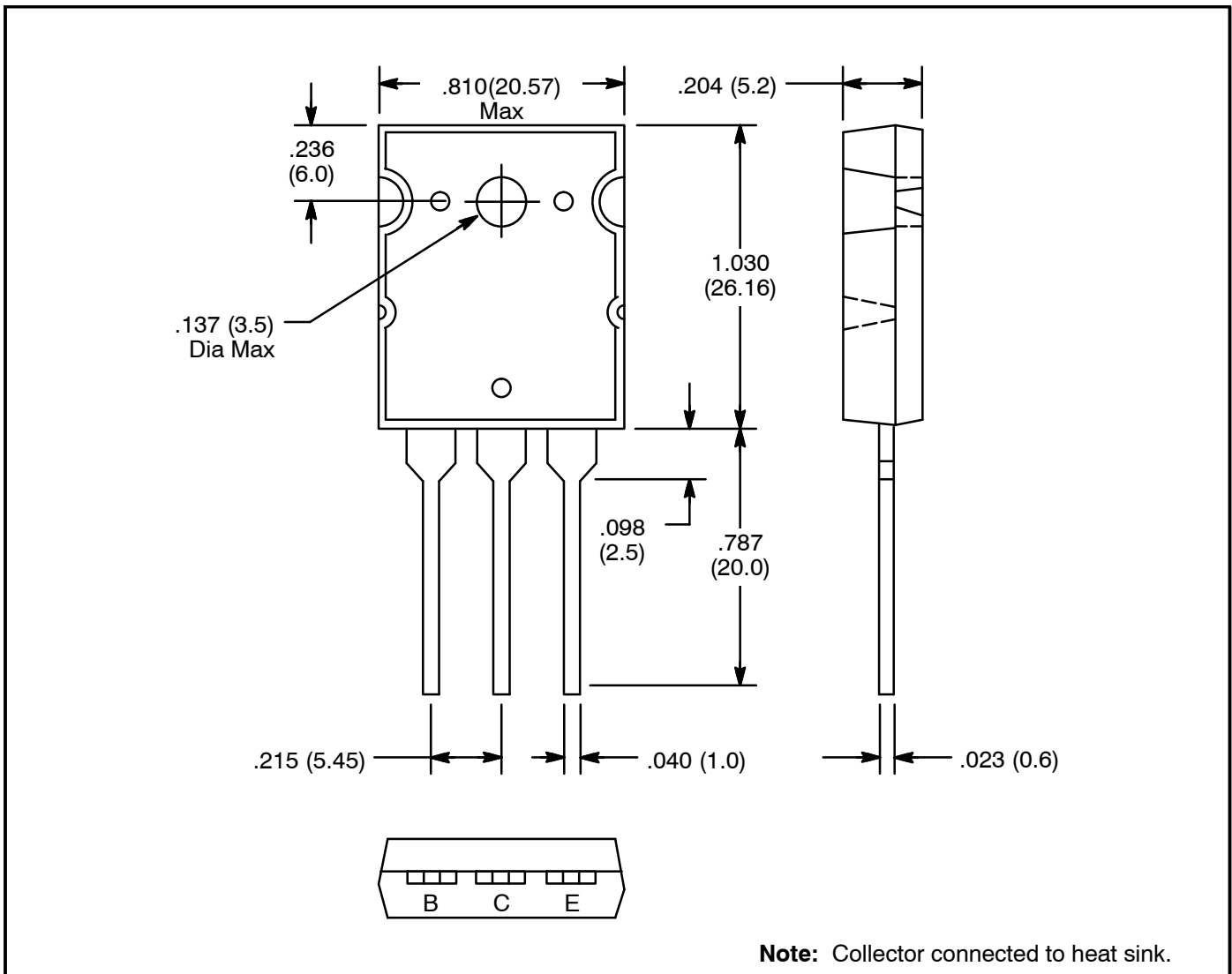
Note 2. Matched complementary pairs are available upon request (NTE2671MCP). Matched complementary pairs have their gain specification ( $h_{FE}$ ) matched to within 10% of each other.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 100mA, I_B = 0$	250	–	–	V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 200V, I_B = 0$	–	–	100	$\mu A$
	$I_{CEX}$	$V_{CE} = 250V, V_{BE(off)} = 1.5V$	–	–	100	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{CE} = 5V, I_C = 0$	–	–	100	$\mu A$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Second Breakdown</b>						
Second Breakdown Collector Current with Base Forward Biased	$I_{S/b}$	$V_{CE} = 50\text{V}, t = 1\text{s}$ (non-repetitive)	4.0	-	-	A
		$V_{CE} = 80\text{V}, t = 1\text{s}$ (non-repetitive)	2.25	-	-	A
<b>ON Characteristics</b>						
DC Current Gain	$h_{FE}$	$I_C = 8\text{A}, V_{CE} = 5\text{V}$	25	-	75	
		$I_C = 16\text{A}, V_{CE} = 5\text{V}$	8	-	-	
Base-Emitter Voltage	$V_{BE(on)}$	$I_C = 8\text{A}, V_{CE} = 5\text{V}$	-	-	2.2	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 8\text{A}, I_B = 800\text{mA}$	-	-	1.4	V
		$I_C = 16\text{A}, I_B = 3.2\text{A}$	-	-	4.0	V
<b>Dynamic Characteristics</b>						
Total Harmonic Distortion at the Output ( $h_{FE}$ unmatched)	THD	$V_{RMS} = 28.3\text{V}, f = 1\text{kHz}, P_{LOAD} = 100W_{RMS}$	-	0.8	-	%
		Matched pair $h_{FE} = 50 @ 5\text{A}/5\text{V}$	-	0.08	-	%
Current Gain Bandwidth Product	$f_T$	$I_C = 1\text{A}, V_{CE} = 1\text{-V}, f_{test} = 1\text{MHz}$	4	-	-	MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f_{test} = 1\text{MHz}$	-	-	500	pF



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