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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° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$
Thermal Resistance, Junction–to–Case, R_{thJC}	0.7 $^\circ C/W$

Note 1. Pulse Test: Pulse Width = 5.0 μs , 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
OFF Characteristics						
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	μA
	I_{CEX}	$V_{CE} = 250V, V_{BE(off)} = 1.5V$	–	–	100	μA
Emitter Cutoff Current	I_{EBO}	$V_{CE} = 5V, I_C = 0$	–	–	100	μA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Second Breakdown						
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
ON Characteristics						
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
Dynamic Characteristics						
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

