ELECTRONICS, INC.
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NTE388 (NPN) & NTE68 (PNP)
Silicon Complementary Transistors
General Purpose High Power Audio,
Disk Head Positioner for Linear Applications

Description:

The NTE388 (NPN) and NTE68 (PNP) are complementary silicon power transistors in a TO3 type package designed for high power audio, disk head positioners, and other linear applications.

Features:

- High Safe Operating Area: 2A @ 80V
- High DC Current Gain: h_{FE} = 15 Min @ I_C = 8A

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 250V
Collector–Emitter Voltage, V_{CEX} 400V
Collector–Base Voltage, V_{CBO} 400V
Emitter–Base Voltage, V_{EBO} 5V
Collector Current, I_C
  Continuous 16A
  Peak (Note 2) 30A
Continuous Base Current, I_B 5A
Total Power Dissipation (T_C = +25°C), P_D 250W
  Derate Above 25°C . . . . . 1.43W/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 0.70°C/W

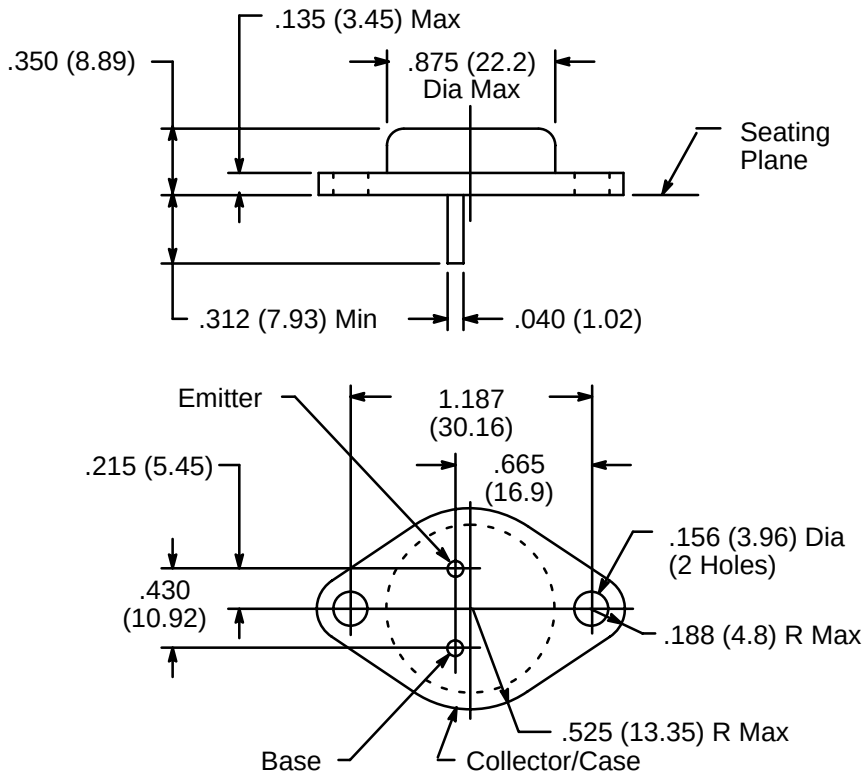
Note 1. Matched complementary pairs are available upon request (NTE68MCP). Matched complementary pairs have their gain specification (h_{FE}) matched to within 10% of each other.

Note 2. Pulse Test: Pulse Width = 5ms, Duty Cycle ≤ 10%.

Electrical Characteristics: (T_C = +25°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, Note 3	250	–	–	V
Collector Cutoff Current	I_{CEX}	V_{CE} = 250V, $V_{BE(off)}$ = 1.5V	–	–	250	µA
	I_{CEO}	V_{CE} = 200V, I_B = 0	–	–	500	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	500	µA
Second Breakdown						
Second Breakdown Collector Current with Base Forward Bias	$I_{S/b}$	V_{CE} = 50V, t = 0.5s (non–repetitive)	5	–	–	µA
		V_{CE} = 80V, t = 0.5s (non–repetitive)	2	–	–	µA
ON Characteristics						
DC Current Gain	h_{FE}	V_{CE} = 4V, I_C = 8A	15	–	60	
		V_{CE} = 4V, I_C = 16A	5	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 8A, I_B = 800mA	–	–	1.4	V
		I_C = 16A, I_B = 3.2A	–	–	4.0	V
Base–Emitter On Voltage	$V_{BE(on)}$	V_{CE} = 4V, I_C = 8A	–	–	2.2	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	V_{CE} = 10V, I_C = 1A, f_{test} = 1MHz	4	–	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f_{test} = 1MHz	–	–	500	pF

Note 3. Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2%.



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