ELECTRONICS, INC.
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NTE249 (NPN) & NTE250 (PNP)
Silicon Complementary Transistors
Darlington Power Amplifier

Description:

The NTE249 (NPN) and NTE250 (PNP) are silicon complementary Darlington transistors in a TO3 type case designed for use as output devices in complementary general purpose amplifier applications.

Features:

- High DC Current Gain: h_{FE} = 3500 Typ @ I_C = 10A
- Monolithic Construction with Built–In Base–Emitter Shunt Resistors

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 100V
Collector–Base Voltage, V_{CB} 100V
Emitter–Base Voltage, V_{EB} 5V
Collector Current, I_C 16A
Base Current, I_B 500mA
Total Power Dissipation (T_C = +25°C), P_D 150W
Derate Above 25°C . . . . . 0.857W/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +200°C
Storage Temperature Range, T_{stg} . . . . . –55° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.17°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 100mA, I_B = 0, Note 1	100	–	–	V
Collector–Emitter Leakage Current	I_{CEO}	V_{CE} = 50V, I_E = 0	–	–	3.0	mA
	I_{CER}	V_{CB} = 100V, R_{BE} = 1kΩ	–	–	1.0	mA
		V_{CB} = 100V, R_{BE} = 1kΩ, T_A = +150°C	–	–	5.0	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 5V, I_C = 0	–	–	5.0	mA

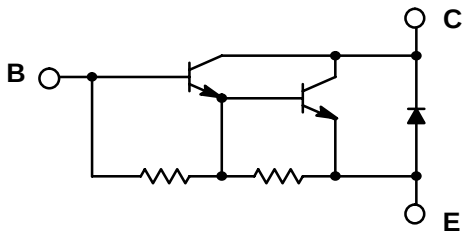
Note 1. Pulse Test: Pulse Width = 300μs, Duty Cycle = 2%

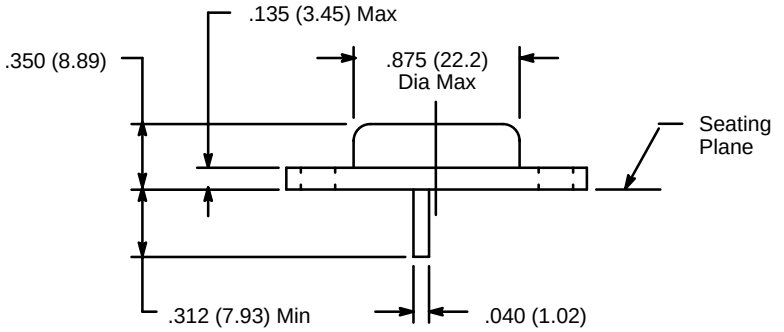
Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	V_{CE} = 3V, I_C = 10A	1000	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 10A, I_B = 40mA	–	–	2.5	V
		I_C = 16A, I_B = 80mA	–	–	4.0	V
Base–Emitter Voltage	V_{BE}	V_{CE} = 3V, I_C = 10A	–	–	3.0	V

Note 1. Pulse Test: Pulse Width = 300μs, Duty Cycle = 2%

NTE249





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