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NTE49 (NPN) & NTE50 (PNP)
Silicon Complementary Transistors
General Purpose, High Voltage Amp, Driver

Description:

The NTE49 (NPN) and NTE50 (PNP) are silicon complementary transistors in a TO202 type case designed for general purpose, high voltage amplifier and driver applications.

Features:

- High Collector Breakdown Voltage: $V_{(BR)CEO}$ = 100V Min @ I_C = 1mA
- High Power Dissipation: P_D = 10W @ T_C = +25°C

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 100V
Collector–Base Voltage, V_{CB} 120V
Emitter–Base Voltage, V_{EB} 4V
Continuous Collector Current, I_C 2A
Total Power Dissipation (T_A = +25°C), P_D 1W
Derate Above 25°C . . . . . 8mW/°C
Total Power Dissipation (T_C = +25°C), P_D 10W
Derate Above 25°C . . . . . 80mW/°C
Operating Junction Temperature Range, T_J . . . . . –55° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 12.5°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 125°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector−Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	100	–	–	V
Emitter−Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	4	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 40V, I_E = 0	–	–	100	nA
ON Characteristics (Note 2)						
DC Current Gain	h_{FE}	I_C = 50mA, V_{CE} = 1V	80	125	–	
		I_C = 250mA, V_{CE} = 1V	60	100	–	
		I_C = 500mA, V_{CE} = 1V	–	55	–	
Collector−Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 250mA, I_B = 10mA	–	0.18	0.4	V
		I_C = 250mA, I_B = 25mA	–	0.1	–	V
Base−Emitter ON Voltage	$V_{BE(on)}$	I_C = 250mA, V_{CE} = 5V	–	0.74	1.2	V
Small−Signal Characteristics						
Current Gain−Bandwidth Product	f_T	I_C = 250mA, V_{CE} = 5V, f = 100MHz, Note 1	50	150	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 100kHz	–	6	12	pF

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