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NTE268 (NPN) & NTE269 (PNP)
Silicon Complementary Transistors
Darlington Power Amplifier

Description:

The NTE268 (NPN) and NTE269 (PNP) are silicon complementary Darlington transistors in a TO202 type package designed for amplifier and driver applications where high gain is an essential requirement, low power lamp and relay drivers and power drivers for high–current applications such as voltage regulators.

Features:

- Low Collector–Emitter Saturation Voltage: $V_{CE(sat)}$ = 1.5V Max @ I_C = 1.5A
- TO202 Type Package: 2W Free Air Dissipation @ T_A = +25°C

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 50V
Collector–Emitter Voltage, V_{CES} 50V
Emitter–Base Voltage, V_{EBO} 13V
Colllector Current, I_C
  Continuous 2A
  Peak (Note 2) 3A
Continuous Base Current, I_B 100mA
Total Power Dissipation (T_A = +25°C), P_D 1.67W
  Derate Above 25°C (Note 3) . . . . . 13.3mW/°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–Ambient, R_{thJA} . . . . . 75°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 12.5°C/W

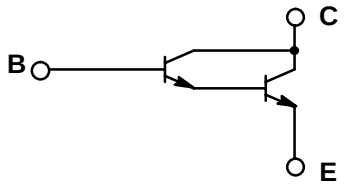
Note 1. The **NTE268** is a **discontinued** device and no longer available.
Note 2. Pulse Width ≤ 25ms, Duty Cycle ≤ 50%.
Note 3. The actual power dissipation capability of the TO202 type package is 2W @ T_A = +25°C.

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 = 10mA, Note 4	50	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 50V, I_E = 0, T_J = +150°C	–	–	20	µA
	I_{CES}	V_{CE} = 50V, V_{BE} = 0	–	–	0.5	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 13V, I_C = 0	–	–	100	nA
ON Characteristics (Note 4)						
DC Current Gain	h_{FE}	I_C = 200mA, V_{CE} = 5V	10000	–	–	
		I_C = 1.5A, V_{CE} = 5V	1000	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 1.5A, I_B = 3mA	–	–	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1.5A, I_B = 3mA	–	–	2.5	V
Dynamic Characteristics						
Collector Capacitance NTE268	C_{cb}	V_{CB} = 10V, I_E = 0, f = 1MHz	–	–	10	pF
NTE269			–	–	25	pF
High Frequency Current Gain	$\|h_{fe}\|$	I_C = 20mA, V_{CE} = 5V, f = 100MHz	1.0	–	–	

Note 4. Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.

NTE268



NTE269