ELECTRONICS, INC.
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NTE24 (NPN) & NTE25 (PNP)
Silicon Complementary Transistors
General Purpose Amplifier, Switch

Description:

The NTE24 (NPN) and NTE25 (PNP) are complementary silicon transistors in a TO237 type package designed for general purpose medium power amplifier and switching circuits that require collector currents to 1A.

Features:

- High Collector–Emitter Breakdown Voltage: V_{CEO} = 80V
- Exceptional Power Dissipation Capability

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO} 100V
Collector–Emitter Voltage, V_{CEO} 80V
Emitter–Base Voltage, V_{EBO} 5V
Collector Current, I_C
  Continuous 1A
  Peak 2A
Power Dissipation, P_D
  T_A = +25°C 850mW
  T_C = +25°C 2W
Junction Temperature, $T_{J(max)}$ . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 50°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 167°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0	80	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 100V, I_E = 0	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	100	nA
DC Current Gain	h_{FE}	V_{CE} = 2V, I_C = 50mA	40	–	–	
		V_{CE} = 2V, I_C = 250mA	40	–	–	
		V_{CE} = 2V, I_C = 500mA	25	–	–	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA	–	–	0.5	V
		I_C = 1000mA, I_B = 100mA	–	–	1.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	V_{CE} = 2V, I_C = 1000mA	–	–	0.5	V
Current Gain Bandwidth Product	f_T	V_{CE} = 5V, I_C = 200mA, f = 100MHz	50	–	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	–	–	30	pF