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NTE11 (NPN) & NTE12 (PNP)
Silicon Complementary Transistors
High Current Amplifier

Description:

The NTE11 (NPN) and NTE12 (PNP) are silicon complementary transistors in a TO92 type case designed for use in low–frequency output amplifier, DC converter, and strobe applications.

Features:

- High Collector Current: I_C = 5A Max
- Low Collector–Emitter Saturation Voltage

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

Collector–Base Voltage, V_{CBO}
- NTE11 . . . . . 40V
- NTE12 . . . . . 27V

Collector–Emitter Voltage, V_{CEO}
- NTE11 . . . . . 20V
- NTE12 . . . . . 18V

Emitter–Base Voltage, V_{EBO} 7V

Collector Current, I_C
- Continuous 5A
- Peak 8A

Total Power Dissipation, P_D 750mW

Operating Junction Temperature Range, T_J . . . . . +150°C

Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current NTE11	I_{CBO}	V_{CB} = 10V, I_E = 0	–	–	0.1	μA
NTE12		V_{CB} = 10V, I_E = 0	–	–	100	nA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter Cutoff Current NTE11	I_{EBO}	V_{EB} = 7V, I_C = 0	–	–	0.1	μA
NTE12		V_{EB} = 5V, I_C = 0	–	–	1.0	μA
Collector–Emitter Voltage NTE11	V_{CEO}	I_C = 1mA, I_B = 0	20	–	–	V
NTE12		I_C = 1mA, I_B = 0	18	–	–	V
Emitter–Base Voltage	V_{EBO}	I_E = 10μA, I_C = 0	7	–	–	V
DC Current Gain NTE11	h_{FE1}	V_{CE} = 2V, I_C = 500mA, Note 1	340	–	600	
NTE12		V_{CE} = 2V, I_C = 2A, Note 1	180	–	625	
NTE11 Only	h_{FE2}	V_{CE} = 2V, I_C = 2A, Note 1	150	–	–	
Collector–Emitter Saturation Voltage NTE11	$V_{CE(sat)}$	I_C = 3A, I_B = 100mA, Note 1	–	–	1	V
NTE12		I_C = 3A, I_B = 100mA, Note 1	–	0.4	1.0	V
Transition Frequency NTE11	f_T	V_{CB} = 6V, I_E = 50mA, f = 200MHz	–	150	–	MHz
NTE12		V_{CB} = 6V, I_E = 50mA, f = 200MHz	–	120	–	MHz
Collector Output Capacitance NTE11	C_{ob}	V_{CB} = 20V, I_E = 0, f = 1MHz	–	–	50	pF
NTE12		V_{CB} = 20V, I_E = 0, f = 1MHz	–	60	–	pF

Note 1. Pulse measurement