

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: ($T_A = +25^\circ C$ 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: ($T_A = +25^\circ C$ unless otherwise specified)

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

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

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

Note 1. Pulse measurement

