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NTE323 (PNP) & NTE324 (NPN) Silicon Complementary Transistors General Purpose

Description:

The NTE323 (PNP) and NTE324 (NPN) are complementary silicon epitaxial planer transistors in a TO39 type package designed for use as drivers for high power transistors in general purpose amplifier and switching circuits.

Absolute Maximum Ratings:

Collector–Base Voltage ($I_E = 0$), V_{CBO}	120V
Collector–Emitter Voltage, V_{CEO}	120V
Emitter–Base Voltage ($I_C = 0$), V_{EBO}	4V
Collector Current, I_C	1A
Base Current, I_B	500mA
Total Power Dissipation, P_{tot}	
$T_C = +25^\circ\text{C}$	10W
$T_A = +25^\circ\text{C}$	1W
Operating Junction Temperature, T_J	+200°C
Storage Temperature Range, T_{stg}	–65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC}	17.4°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA}	175°C/W

Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Collector Cutoff Current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$	–	–	1	μA	
	I_{CEO}	$V_{CE} = 80\text{V}, I_B = 0$	–	–	10	μA	
	I_{CEV}	$V_{CE} = 120\text{V}, V_{BE} = -1.5\text{V}$		–	–	1	μA
		$V_{CE} = 120\text{V}, V_{BE} = -1.5\text{V}, T_C = +150^\circ\text{C}$		–	–	1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	–	–	1	μA	
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 10\text{mA}, I_B = 0$, Note 1	120	–	–	V	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 250\text{mA}, I_B = 25\text{mA}$, Note 1	–	–	0.6	V	
		$I_C = 500\text{mA}, I_B = 50\text{mA}$, Note 1	–	–	1.0	V	
		$I_C = 1\text{A}, I_B = 200\text{mA}$, Note 1	–	–	2.0	V	

Note 1. Pulse Duration = 300 μs , Duty Cycle \leq 2%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Base-Emitter Voltage	V_{BE}	$V_{CE} = 2\text{V}, I_C = 250\text{mA}$	-	-	1.0	V
DC Current Gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 250\text{mA}, \text{Note 1}$	40	-	150	-
		$V_{CE} = 2\text{V}, I_C = 1\text{A}, \text{Note 1}$	5	-	-	-
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 100\text{mA}, f = 10\text{MHz}$	30	-	-	MHz
Collector-Base Capacitance	C_{cbo}	$V_{CB} = 20\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	50	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 1.5\text{V}, I_C = 200\text{mA}, f = 1\text{kHz}$	40	-	-	-

Note 1. Pulse Duration = $300\mu\text{s}$, Duty Cycle $\leq 2\%$.

