

NTE2524 (NPN) & NTE2525 (PNP) Silicon Complementary Transistors High Current Switch

Features:

- Low Collector–Emitter Saturation Voltage
- High Current and High f_T
- Excellent Linearity of h_{FE}
- Fast Switching Time

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Collector Base Voltage, V_{CBO}	60V
Collector Emitter Voltage, V_{CEO}	50V
Emitter Base Voltage, V_{EBO}	6V
Collector Current, I_C	
Continuous	8A
Pulse	12A
Collector Power Dissipation, P_C	
$T_A = +25^\circ\text{C}$	1W
$T_C = +25^\circ\text{C}$	20W
Operating Junction Temperature, T_J	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V, I_E = 0$	–	–	1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	–	–	1.0	μA
DC Current Gain	h_{FE}	$V_{CE} = 2V, I_C = 500\text{mA}$	100	–	400	
		$V_{CE} = 2V, I_C = 6A$	35	–	–	
Gain–Bandwidth Product NTE2524	f_T	$V_{CE} = 5V, I_C = 1A$	–	180	–	MHz
			–	130	–	MHz
Output Capacitance NTE2524	C_{ob}	$V_{CB} = 10V, f = 1\text{MHz}$	–	65	–	pF
			–	95	–	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage NTE2524	$V_{CE(sat)}$	$I_C = 4A, I_B = 200mA$	–	200	400	mV
NTE2525			–	250	500	mV
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4A, I_B = 200mA$	–	0.95	1.2	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	50	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6	–	–	V
Turn–On Time	t_{on}	$V_{CC} = 25V, V_{BE} = -5V,$ $10I_{B1} = -10I_{B2} = I_C = 4A,$ Pulse Width = $20\mu s,$ Duty Cycle $\leq 1\%$, Note 1	–	50	–	ns
Storage Time NTE2524	t_{stg}		–	500	–	ns
NTE2525			–	450	–	ns
Fall Time	t_f		–	20	–	ns

Note 1. For NTE2525, the polarity is reversed.

