



ELECTRONICS, INC.
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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.

