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## NTE2524 (NPN) & NTE2525 (PNP) Silicon Complementary Transistors High Current Switch TO251

**Features:**

- Low Collector-Emitter Saturation Voltage
- High Current and High  $f_T$
- Excellent Linearity of  $h_{FE}$
- Fast Switching Time
- TO251 Type Package

**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, $T_{stg}$ .....	$-55^\circ$ 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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$	-	-	1.0	$\mu\text{A}$
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	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 200\text{mA}$	–	200	400	mV
NTE2525			–	250	500	mV
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 200\text{mA}$	–	0.95	1.2	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	50	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6	–	–	V
Turn–On Time	$t_{on}$	$V_{CC} = 25\text{V}, V_{BE} = -5\text{V},$ $10I_{B1} = -10I_{B2} = I_C = 4\text{A},$ Pulse Width = $20\mu\text{s},$ 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.

