

## NTE2528 (NPN) & NTE2529 (PNP) Silicon Complementary Transistors High Voltage Switch

**Features:**

- High Voltage and High Current Capacity
- Fast Switching Time

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

Collector Base Voltage, $V_{CBO}$ .....	180V
Collector Emitter Voltage, $V_{CEO}$ .....	160V
Emitter Base Voltage, $V_{EBO}$ .....	6V
Collector Current, $I_C$	
Continuous .....	1.5A
Pulse .....	2.5A
Collector Power Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$ .....	1W
$T_C = +25^\circ\text{C}$ .....	15W
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	$I_{CBO}$	$V_{CB} = 120\text{V}, I_E = 0$	-	-	1.0	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$	-	-	1.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	100	-	400	
		$V_{CE} = 5\text{V}, I_C = 10\text{A}$	80	-	-	
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	-	120	-	MHz
Output Capacitance NTE2528	$C_{ob}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	12	-	$\mu\text{F}$
NTE2529			-	22	-	$\mu\text{F}$
Collector-Emitter Saturation Voltage NTE2528	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	0.13	0.5	V
NTE2529			-	0.2	0.45	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	–	0.85	1.2	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	180	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	160	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6	–	–	V
Turn–On Time	$t_{on}$	$V_{CC} = 100\text{V}, V_{BE} = -5\text{V},$ $10I_{B1} = -10I_{B2} = I_C = 700\text{mA},$ Pulse Width = $20\mu\text{s},$ Duty Cycle $\leq 1\%$ , Note 1	–	60	–	ns
Storage Time NTE2528	$t_{stg}$		–	1.2	–	ns
NTE2529			–	0.7	–	ns
Fall Time NTE2528	$t_f$		–	80	–	ns
NTE2529		–	50	–	ns	

Note 1. For NTE2529, the polarity is reversed.

