

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° 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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$	–	–	1.0	μA
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	–	pF
			–	22	–	pF
Collector–Emitter Saturation Voltage NTE2528	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	–	0.13	0.5	V
			–	0.2	0.45	V
NTE2529						

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.

