

NTE2339 Silicon NPN Transistor High Voltage, High Speed Switch

Features:

- High Breakdown Voltage, High Reliability
- Fast Switching Speed
- Wide Safe Operating Area

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

Collector–Base Voltage, V_{CBO}	1100V
Collector–Emitter Voltage, V_{CEO}	800V
Emitter–Base Voltage, V_{EBO}	7V
Collector Current, I_C	
Continuous	3A
Peak (Note 1)	10A
Collector Dissipation ($T_C = +25^\circ\text{C}$), P_C	30W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–55° to +150°C

Note 1. Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 10\%$.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 800\text{V}, I_E = 0$	–	–	10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	–	–	10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5\text{V}, I_C = 200\text{mA}$	20	–	40	
	$h_{FE(2)}$	$V_{CE} = 5\text{V}, I_C = 1\text{A}$	8	–	–	
Gain Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 200\text{mA}$	–	15	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	–	60	–	pF
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5\text{A}, I_B = 300\text{mA}$	–	–	2.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1.5\text{A}, I_B = 300\text{mA}$	–	–	1.5	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	1100	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}, R_{BE} = \infty$	800	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	7	–	–	V
Collector–Emitter Sustaining Voltage	$V_{CEX(sus)}$	$I_C = 1.5\text{A}, I_{B1} = I_{B2} = 300\text{mA}, L = 2\text{mH}, \text{Clamped}$	800	–	–	V
Turn–On Time	t_{on}	$V_{CC} = 400\text{V}, I_{B1} = -2.5\text{A}, I_{B2} = I_C = 2\text{A}, R_L = 200\Omega$	–	–	0.5	μs
Storage Time	t_{stg}		–	–	3.0	μs
Fall Time	t_f		–	–	0.3	μs

