

NTE2503 Silicon NPN Transistor High Gain Switch

Features:

- High DC Current Gain
- High Current Capacity
- Low Collector–Emitter Saturation Voltage
- High Emitter–Base Voltage

Applications:

- AF Amplifier
- Various Driver

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

Collector–Emitter Voltage, V_{CEO}	25V
Collector–Base Voltage, V_{CBO}	30V
Emitter–Base Voltage, V_{EBO}	15V
Collector Current, I_C	
Continuous	700mA
Pulse	1.5A
Collector Dissipation, P_C	600mW
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–55° to +150°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}	$V_{CB} = 20\text{V}, I_E = 0$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 10\text{V}, I_C = 0$	–	–	0.1	μA
DC Current Gain	h_{FE}	$I_C = 50\text{mA}, V_{CE} = 5\text{V}$	800	1500	3200	
		$I_C = 500\text{mA}, V_{CE} = 5\text{V}$	600	–	–	
Current Gain–Bandwidth Product	f_T	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$	–	270	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	–	9	–	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$, $I_B = 10\text{mA}$	—	0.15	0.50	V
Base Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}$, $I_B = 10\text{mA}$	—	0.9	1.2	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$, $I_E = 0$	30	—	—	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}$, $R_{BE} = \infty$	25	—	—	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = 0$	15	—	—	V
Turn–On Time	t_{on}	$I_{B1} = 100\text{mA}$, $I_{B2} = I_C = 300\text{mA}$, Pulse Width = $20\mu\text{s}$, Duty Cycle $\leq 1\%$	—	0.1	—	μs
Storage Time	t_{stg}		—	0.6	—	μs
Fall Time	t_f		—	0.06	—	μs

