NTE2522 (NPN) & NTE2523 (PNP)
Silicon Complementary Transistors
High Speed Switch

Features:
- High Current Capacity
- High Collector–Emitter Saturation Voltage

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector Base Voltage, V_{CBO}

NTE2522 . . . . 60V

NTE2523 . . . . 50V

Collector Emitter Voltage, V_{CEO}

NTE2522 . . . . 45V

NTE2523 . . . . 40V

Emitter Base Voltage, V_{EBO} 5V

Collector Current, I_C

Continuous 8A

Pulse 12A

Collector Power Dissipation, P_C

T_A = +25°C 1W

T_C = +25°C 15W

Operating Junction Temperature, T_J . . . . +150°C

Storage Temperature Range, T_{stg} . . . . −55° to +150°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current NTE2522	I_{CBO}	V_{CB} = 45V, I_E = 0	–	–	1.0	μA
NTE2523		V_{CB} = 3V, I_E = 0	–	–	1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 4V, I_C = 0	–	–	1.0	μA
DC Current Gain NTE2522	h_{FE1}	V_{CE} = 2V, I_C = 500mA	140	–	400	
NTE2523			100	–	400	
NTE2522	h_{FE2}	V_{CE} = 2V, I_C = 8A	40	–	–	
NTE2523			25	–	–	
Gain–Bandwidth Product	f_T	V_{CE} = 2V, I_C = 500mA	–	250	–	MHz

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2522	C_{ob}	V_{CB} = 10V, f = 1MHz	–	65	–	pF
NTE2523			–	100	–	pF
Collector–Emitter Saturation Voltage NTE2522	$V_{CE(sat)}$	I_C = 4A, I_B = 200mA	–	0.25	0.7	V
NTE2523			–	0.3	0.8	V
Base–Emitter Saturation Voltage NTE2522	$V_{BE(sat)}$	I_C = 4A, I_B = 200mA	–	0.95	1.8	V
NTE2523			–	0.95	1.3	V
Collector–Base Breakdown Voltage NTE2522	$V_{(BR)CBO}$	I_C = 100µA, I_E = 0	60	–	–	V
NTE2523			50	–	–	V
Collector–Emitter Breakdown Voltage NTE2522	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	45	–	–	V
NTE2523			40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10µA, I_C = 0	5	–	–	V
Turn–On Time	t_{on}	V_{CC} = 25V, V_{BE} = 1V, $20I_{B1}$ = $−20I_{B2}$ = I_C = 4A, Pulse Width = 20µs, Duty Cucle ≤ 1%, Note 1	–	50	100	ns
Storage Time NTE2522	t_{stg}		–	150	270	ns
NTE2523			–	120	220	ns
Turn–Off Time NTE2522	t_{off}		–	180	350	ns
NTE2523			–	150	300	ns

Note 1. For NTE2523, the polarity is reversed.