NTE2308
Silicon NPN Transistor
High Voltage, High Current Switch

Features:
- High Breakdown Voltage
- Fast Switching Speed
- Wide ASO

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

Collector–Base Voltage, V_{CBO} 500V

Collector–Emitter Voltage, V_{CEO} 400V

Emitter–Base Voltage, V_{EBO} 7V

Collector Current, I_C
    Continuous 12A
    Peak (Note 1) 25A

Base Current, I_B 4A

Collector Dissipation (T_A = +25°C), P_C 2.5W

Collector Dissipation (T_C = +25°C), P_C 100W

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

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

Note 1. Pules test: Pulse Width ≤ 300μs, Duty Cycle ≤ 10%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 400V, I_E = 0	–	–	10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	–	10	μA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 1.6A	15	–	–	
		V_{CE} = 5V, I_C = 8A	8	–	–	
Current Gain–Bandwidth Product	f_T	V_{CE} = 10V, I_C = 1.6A	–	20	–	MHz
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 8A, I_B = 1.6A	–	–	1.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 8A, I_B = 1.6A	–	–	1.5	V
Output Capacitance	C_{ob}	V_{CB} = 10V, f = 1MHz	–	160	–	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1mA, I_E = 0$	500	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10mA, R_{BE} = \infty$	400	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1mA, I_C = 0$	7	–	–	V
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 12A, I_B = 2.4A, L = 50\mu H$	400	–	–	V
	$V_{CEX(sus)}$	$I_C = 12A, I_{B1} = 2.4A, L= 200\mu H,$ $I_{B2} = -2.4A,$ Clamped	400	–	–	V
		$I_C = 3A, I_{B1} = 0.6A, L= 200\mu H,$ $I_{B2} = -0.6A,$ Clamped	450	–	–	V
Turn–On Time	t_{on}	$V_{CC} = 200V, I_C = 10A, I_{B1} = 2A,$ $I_{B2} = -2A, R_L = 20\Omega$	–	–	1.0	μs
Storage Time	t_{stg}		–	–	2.5	μs
Fall Time	t_f		–	–	1.0	μs