ELECTRONICS, INC.
44 FARRAND STREET
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NTE2407
Silicon PNP Transistor
General Purpose Amp, Surface Mount
(Compl to NTE2406)

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

Collector–Base Voltage, V_{CBO} 60V
Collector–Emitter Voltage, V_{CEO} 60V
Emitter–Base Voltage, V_{EBO} 5V
Continuous Collector Current, I_C 600mA
Total Device Dissipation (FR–5 Board, Note 1), P_D 225mW
Derate above +25°C . . . . . 1.8mW/°C
Thermal Resistance, Junction–to–Ambient (FR–5 Board, Note 1), R_{thJA} . . . . . 556°C/W
Total Device Dissipation (Alumina Substrate, Note 2), P_D 300mW
Derate above +25°C . . . . . 2.4mW/°C
Thermal Resistance, Junction–to–Ambient (Alumina Substrate, Note 2), R_{thJA} . . . . . 417°C/W
Operating Junction Temperature Range, T_J . . . . . –55 ° to +150°C
Storage Temperature Range, T_{stg} . . . . . –55 ° to +150°C

Note 1. FR–5 = 1.000 (25.4mm) x .750 (19.05mm) x .062 (1.57mm).

Note 2. Alumina = .400 (10.2mm) x .300 (7.62mm) x .024 (.609mm), 99.5% alumina.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, I_B = 0, Note 3	60	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	5	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 50V, I_E = 0	–	–	0.01	μA
		V_{CB} = 50V, I_E = 0, T_A = +125°C	–	–	10	μA
	I_{CEX}	V_{CE} = 30V, $V_{EB(off)}$ = 0.5V	–	–	50	nA
Base Current	I_B	V_{CE} = 30V, $V_{EB(off)}$ = 0.5V	–	–	50	nA

Note 3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 3)						
DC Current Gain	h_{FE}	V_{CE} = 10V, I_C = 0.1mA	35	–	–	
		V_{CE} = 10V, I_C = 1mA	50	–	–	
		V_{CE} = 10V, I_C = 10mA	100	–	–	
		V_{CE} = 10V, I_C = 150mA	100	–	300	
		V_{CE} = 10V, I_C = 500mA	50	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 150mA, I_B = 15mA	–	–	0.4	V
		I_C = 500mA, I_B = 50mA	–	–	1.6	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 150mA, I_B = 15mA	–	–	1.3	V
		I_C = 500mA, I_B = 50mA	–	–	2.6	V
Small–Signal Characteristics						
Current Gain–Bandwidth Product	f_T	I_C = 50mA, V_{CE} = 20V, f = 100MHz, Note 3	300	–	–	MHz
Output Capacitance	C_{obo}	V_{CB} = 10V, I_E = 0, f = 1MHz	–	–	8	pF
Input Capacitance	C_{ibo}	V_{EB} = 2V, I_C = 0, f = 1MHz	–	–	30	pF
Switching Characteristics						
Turn–On Time	t_{on}	V_{CC} = 30V, I_C = 150mA, I_{B1} = 15mA	–	–	45	ns
Delay Time	t_d		–	–	10	ns
Rise Time	t_r		–	–	40	ns
Turn–On Time	t_{off}	V_{CC} = 6V, I_C = 150mA, I_{B1} = I_{B2} = 15mA	–	–	100	ns
Delay Time	t_s		–	–	80	ns
Rise Time	t_f		–	–	30	ns

Note 3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.