ELECTRONICS, INC.
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NTE2505
Silicon NPN Transistor
Low Frequency, General Purpose Amp

Features:
- High Current Capacity
- High DC Current Gain
- Low Collector Emitter Saturation Voltage
- High Emitter Base Breakdown Voltage

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

Collector–Base Voltage, V_{CBO} 30V
Collector–Emitter Voltage, V_{CEO} 25V
Emitter–Base Voltage, V_{EBO} 15V
Collector Current, I_C
  Continuous 2A
  Peak 4A
Base Current, I_B 400mA
Collector Power Dissipation, P_C 1W
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	I_{CBO}	V_{CB} = 20V, I_E = 0	–	–	100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 10V, I_C = 0	–	–	100	nA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 500mA	800	1500	3200	
		V_{CE} = 5V, I_C = 1A	600	–	–	
Gain–Bandwidth Product	f_T	V_{CE} = 10V, I_C = 50mA	–	260	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, f = 1MHz	–	27	–	pF
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 1A, I_B = 20mA	–	0.15	0.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 20mA	–	0.85	1.2	V

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 = 10μA, I_E = 0	30	–	–	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	25	–	–	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	15	–	–	V
Turn–On Time	t_{on}	V_{CC} = 10V, V_{BE} = –5V, $100I_{B1} = -100I_{B2} = I_C$ = 700mA, Pulse Width = 20μs, Duty Cycle ≤ 1%	–	0.14	–	μs
Storage Time	t_{stg}		–	1.35	–	μs
Fall Time	t_f		–	0.1	–	μs

