



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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
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}	$V_{CC} = 10\text{V}, V_{BE} = -5\text{V},$ $100I_{B1} = -100I_{B2} = I_C = 700\text{mA},$ Pulse Width = $20\mu\text{s},$ Duty Cycle $\leq 1\%$	–	0.14	–	μs
Storage Time	t_{stg}		–	1.35	–	μs
Fall Time	t_f		–	0.1	–	μs

