



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)

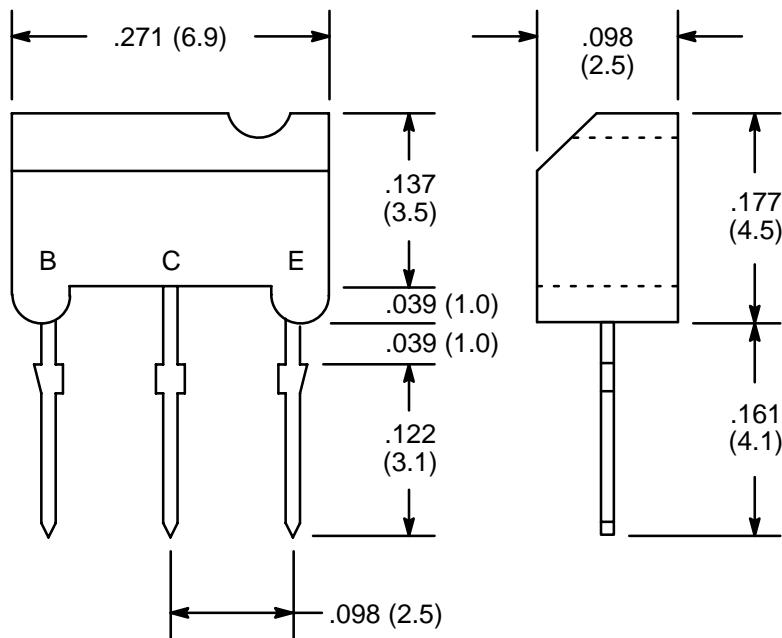
Collector–Base Voltage, $V_{CBO}$ .....	30V
Collector–Emitter Voltage, $V_{CEO}$ .....	25V
Emitter–Base Voltage, $V_{EBO}$ .....	15V
Collector Current, $I_C$	
Continuous .....	2A
Peak .....	4A
Base Current, $I_B$ .....	400mA
Collector Power Dissipation, $P_C$ .....	1W
Operating Junction Temperature, $T_J$ .....	+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	$I_{CBO}$	$V_{CB} = 20\text{V}$ , $I_E = 0$	–	–	100	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 10\text{V}$ , $I_C = 0$	–	–	100	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}$ , $I_C = 500\text{mA}$	800	1500	3200	
		$V_{CE} = 5\text{V}$ , $I_C = 1\text{A}$	600	–	–	
Gain–Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}$ , $I_C = 50\text{mA}$	–	260	–	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$	–	27	–	pF
Collector Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C = 1\text{A}$ , $I_B = 20\text{mA}$	–	0.15	0.5	V
Base Emitter Saturation Voltage	$V_{BE(\text{sat})}$	$I_C = 1\text{A}$ , $I_B = 20\text{mA}$	–	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	$V_{(\text{BR})\text{CBO}}$	$I_C = 10\mu\text{A}, I_E = 0$	30	—	—	V
Collector Emitter Breakdown Voltage	$V_{(\text{BR})\text{CEO}}$	$I_C = 1\text{mA}, R_{BE} = \infty$	25	—	—	V
Emitter Base Breakdown Voltage	$V_{(\text{BR})\text{EBO}}$	$I_E = 10\mu\text{A}, I_C = 0$	15	—	—	V
Turn-On Time	$t_{\text{on}}$	$V_{CC} = 10\text{V}, V_{BE} = -5\text{V},$ $100I_{B1} = -100I_{B2} = I_C = 700\text{mA},$ Pulse Width = $20\mu\text{s}$ , Duty Cycle $\leq 1\%$	—	0.14	—	$\mu\text{s}$
Storage Time	$t_{\text{stg}}$		—	1.35	—	$\mu\text{s}$
Fall Time	$t_f$		—	0.1	—	$\mu\text{s}$



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