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## NTE395 Silicon PNP Transistor Wide Band Linear Amplifier

**Absolute Maximum Ratings:**

Collector–Base Voltage, $V_{CB0}$ .....	30V
Collector–Emitter Voltage, $V_{CEO}$ .....	25V
Emitter–Base Voltage, $V_{EBO}$ .....	3V
Collector Current, $I_C$ .....	50mA
Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_{tot}$ .....	225mW
Power Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_{tot}$ .....	360mW
Operating Junction Temperature, $T_J$ .....	+200°C
Storage Temperature Range, $T_{stg}$ .....	–55° to +200°C
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	485°C/W
Thermal Resistance, Junction–to–Ambient, $R_{thJA}$ .....	775°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Cutoff Current	$I_{CBO}$	$V_{CB} = 15V, I_E = 0$	–	–	50	nA
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu A, I_E = 0$	30	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5mA, I_B = 0$	25	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	3	–	–	V
Static Forward Current Transfer Ratio	$h_{21E}$	$V_{CE} = 10V, I_C = 10mA$ , Note 1	20	–	–	
Base–Emitter Voltage	$V_{BE}$	$V_{CE} = 10V, I_C = 10mA$	–	0.75	–	V
Knee Voltage	$V_{CEK}$	$I_C = 20mA$ , Note 2	–	0.8	–	V
Transition Frequency	$f_T$	$V_{CE} = 15V, I_C = 10mA$	1.4	2.3	–	GHz
Maximum Oscillation Frequency	$f$	$V_{CE} = 15V, I_C = 10mA$	–	6.5	–	GHz
Output Capacitance	$C_{22b}$	$V_{CB} = 15V, I_E = 0, f = 1MHz$	–	1.1	–	pF

Note 1. Pulsed.

Note 2.  $V_{CEK}$  tested with  $I_C = 100mA$  and  $I_B =$  values for which  $I_C = 110mA$  at  $V_{CE} = 1V$ .

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Power Gain		$V_{CE} = 15\text{V}, I_C = 10\text{mA}, f = 800\text{MHz}$	–	10	–	dB
Wide Band Power Gain	$G_P$	$f = 40 \text{ to } 860\text{MHz}, R_S = R_L = 75\Omega$	–	16	–	dB
Noise Figure	NF	$V_{CE} = 15\text{V}, I_C = 3\text{mA}, f = 200\text{MHz}$	–	2.5	–	dB
		$V_{CE} = 15\text{V}, I_C = 10\text{mA}, f = 800\text{MHz}$	–	3.5	–	dB
		$V_{CE} = 15\text{V}, I_C = 10\text{mA}, f = 200\text{MHz}$	–	3.0	–	dB
		$V_{CE} = 15\text{V}, I_C = 10\text{mA}, f = 800\text{MHz}$	–	4.0	–	dB

