

**NTE319P**  
**Silicon NPN Transistor**  
**VHF Amp <sup>w</sup>/Forward AGC**

**Absolute Maximum Ratings:**

Collector–Emitter Voltage, $V_{CEO}$ .....	20V
Collector–Base Voltage, $V_{CBO}$ .....	20V
Emitter–Base Voltage, $V_{EBO}$ .....	3V
Collector Current, $I_C$ .....	50mA
Total Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_T$ .....	625mW
Derate above $+25^\circ\text{C}$ .....	5mW/ $^\circ\text{C}$
Operating Junction Temperature, $T_J$ .....	+150 $^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	-55 $^\circ$ to +150 $^\circ\text{C}$
Lead Temperature (During Soldering, 1/16" $\pm$ 1/32" from case, 10sec), $T_L$ .....	+230 $^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$ , $I_E = 0$	20	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}$ , $I_C = 0$	3	–	–	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 20\text{V}$ , $I_E = 0$	–	–	50	nA
DC Current Gain	$h_{FE}$	$I_C = 2\text{mA}$ , $V_{CE} = 10\text{V}$	20	80	220	
Collector Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$ , $I_B = 5\text{mA}$	–	–	2.75	V
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 1\text{mA}$ , $I_B = 0$	20	–	–	V
Current Gain–Bandwidth Product	$f_T$	$I_C = 2\text{mA}$ , $V_{CE} = 10\text{V}$ , $f = 100\text{MHz}$	300	–	500	MHz
Power Gain	$G_{pe}$	$V_{BE} = 2\text{V}$ , $f = 45\text{MHz}$	27	29	–	dB
Capacitance	$C_{cb}$	$I_E = 0$ , $V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$	–	0.13	0.22	pF
Noise Figure	NF	$V_{BE} = 2\text{V}$ , $f = 45\text{MHz}$	–	2.7	5.0	dB

