

**NTE10**  
**Silicon NPN Transistor**  
**UHF Low Noise Wide-Band Amplifier**

**Features:**

- Low Noise Figure: NF = 2.2dB Typ (f = 0.9GHz)
- High Power Gain: MAG = 14dB Typ (f = 0.9GHz)
- High Cutoff Frequency:  $f_T = 5\text{GHz Typ}$

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

Collector-Base Voltage, $V_{CBO}$ .....	20V
Collector-Emitter Voltage, $V_{CER}$ .....	12V
Emitter-Base Voltage, $V_{EBO}$ .....	3V
Collector Current, $I_C$ .....	70mA
Base Current, $I_B$ .....	30mA
Collector Power Dissipation, $P_C$ .....	500mW
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	$I_{CBO}$	$V_{CB} = 12\text{V}, I_E = 0$	-	-	1.0	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 2\text{V}, I_C = 0$	-	-	10	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$	40	-	200	
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 20\text{mA}$	-	5.0	-	GHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	0.8	1.1	pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	0.5	-	pF
Forward Transfer Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{V}, I_C = 20\text{mA}, f = 0.9\text{GHz}$	8	10	-	dB
Maximum Available Power Gain	MAG	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 0.9\text{GHz}$	-	14	-	dB
Noise Figure	NF	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 0.9\text{GHz}$	-	2.2	4.5	dB

