

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 = 5GHz Typ

Absolute Maximum Ratings: (T_A = +25°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°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 12V, I_E = 0$	–	–	1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 2V, I_C = 0$	–	–	10	μA
DC Current Gain	h_{FE}	$V_{CE} = 10V, I_C = 20mA$	40	–	200	
Gain–Bandwidth Product	f_T	$V_{CE} = 10V, I_C = 20mA$	–	5.0	–	GHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, f = 1MHz$	–	0.8	1.1	pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = 10V, f = 1MHz$	–	0.5	–	pF
Forward Transfer Gain	$ S_{21e} ^2$	$V_{CE} = 10V, I_C = 20mA, f = 0.9GHz$	8	10	–	dB
Maximum Available Power Gain	MAG	$V_{CE} = 10V, I_C = 5mA, f = 0.9GHz$	–	14	–	dB
Noise Figure	NF	$V_{CE} = 10V, I_C = 5mA, f = 0.9GHz$	–	2.2	4.5	dB

