THERMAL RESISTANCE

Parameter	Symbol	Value	Unit
Junction to Ambient Resistance	$R_{th\ (j\text{-}a)}$ Note	62.5	°C/W

Note Mounted on 16 cm^2 × 0.7 mm (t) ceramic substrate

ELECTRICAL CHARACTERISTICS (T_A = +25°C)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Characteristics						
Collector Cut-off Current	I_{CBO}	V_{CB} = 10 V, I_E = 0 mA	–	–	1.0	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 1.0 V, I_C = 0 mA	–	–	1.0	μA
DC Current Gain	h_{FE} Note 1	V_{CE} = 10 V, I_C = 20 mA	50	120	250	–
RF Characteristics						
Gain Bandwidth Product	f_T	V_{CE} = 10 V, I_C = 20 mA	–	6.5	–	GHz
Insertion Power Gain	$\lvert S_{21e} \rvert^2$	V_{CE} = 10 V, I_C = 20 mA, f = 1 GHz	–	9.0	–	dB
Noise Figure (1)	NF	V_{CE} = 10 V, I_C = 7 mA, f = 1 GHz	–	1.1	–	dB
Noise Figure (2)	NF	V_{CE} = 10 V, I_C = 40 mA, f = 1 GHz	–	1.8	3.0	dB
Reverse Transfer Capacitance	C_{re} Note 2	V_{CB} = 10 V, I_E = 0 mA, f = 1 MHz	–	0.65	1.0	pF

Notes 1. Pulse measurement: PW ≤ 350 μs, Duty Cycle ≤ 2%

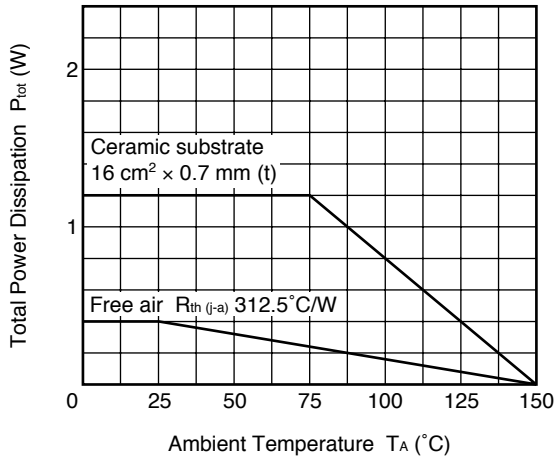
2. The emitter terminal and the case shall be connected to the guard terminal of the three-terminal capacitance bridge.

h_{FE} CLASSIFICATION

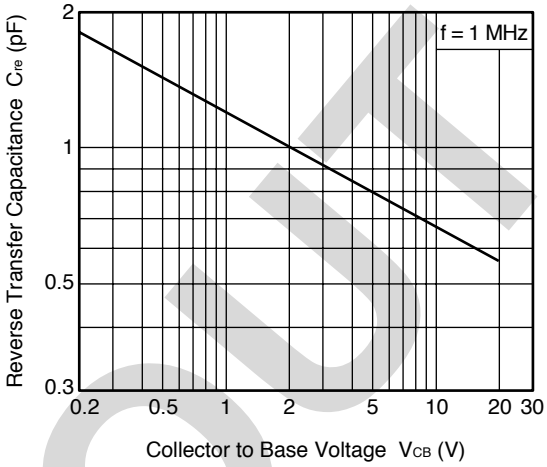
Rank	RH	RF	RE
Marking	RH	RF	RE
h_{FE} Value	50 to 100	80 to 160	125 to 250

★ **TYPICAL CHARACTERISTICS (T_A = +25°C, unless otherwise specified)**

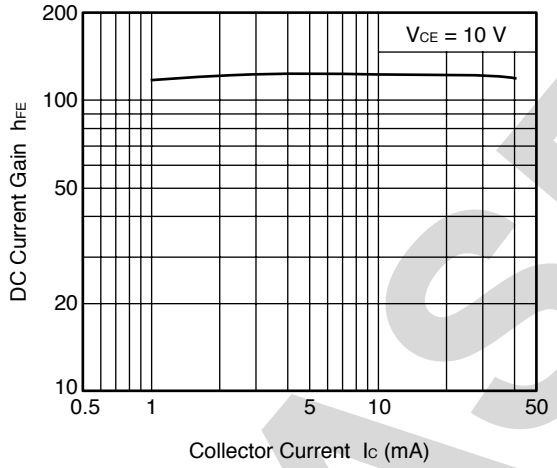
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



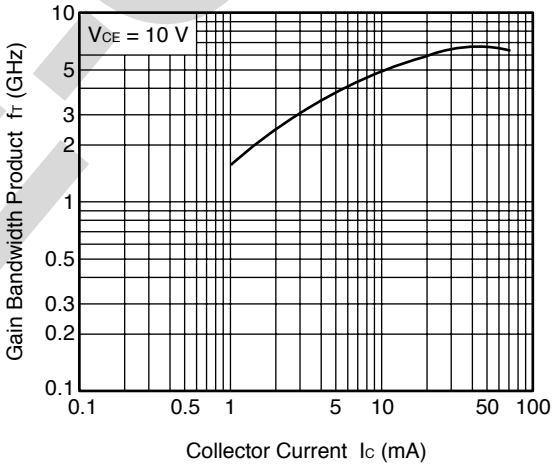
REVERSE TRANSFER CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



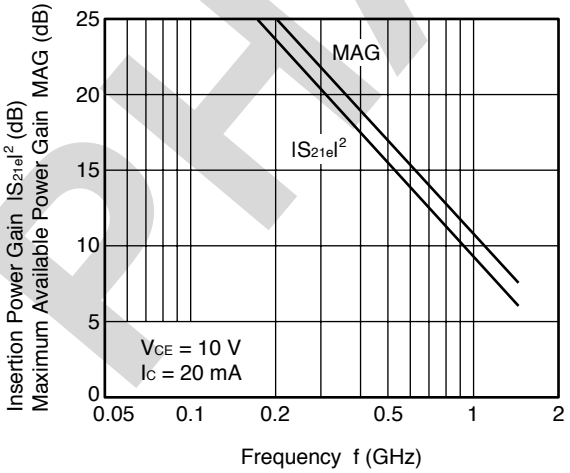
DC CURRENT GAIN vs. COLLECTOR CURRENT



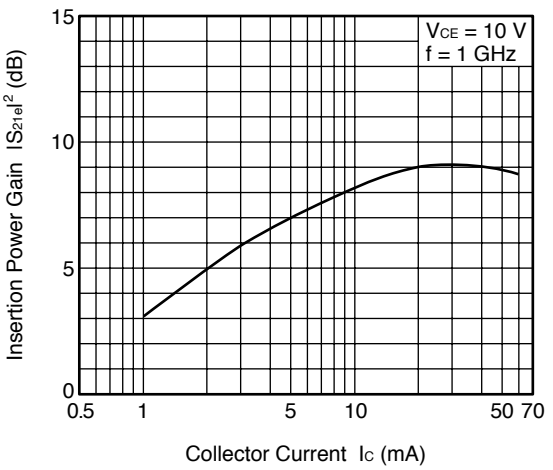
GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



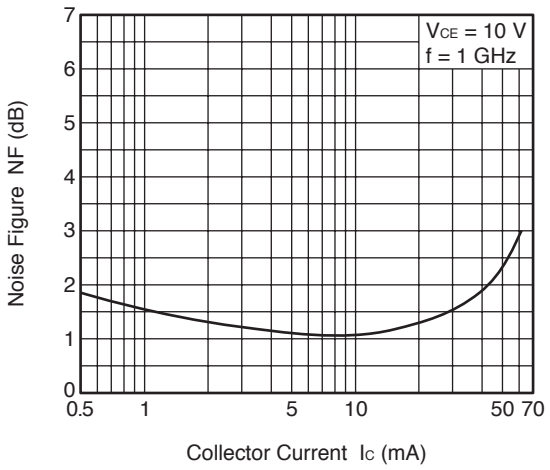
INSERTION POWER GAIN, MAG vs. FREQUENCY



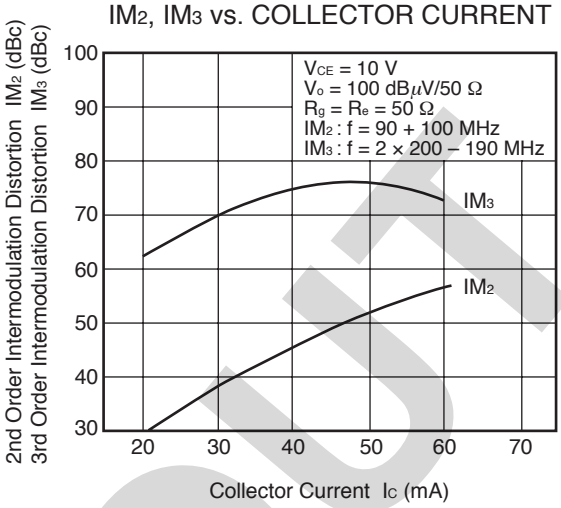
INSERTION POWER GAIN vs. COLLECTOR CURRENT



NOISE FIGURE vs.
COLLECTOR CURRENT



IM2, IM3 vs. COLLECTOR CURRENT



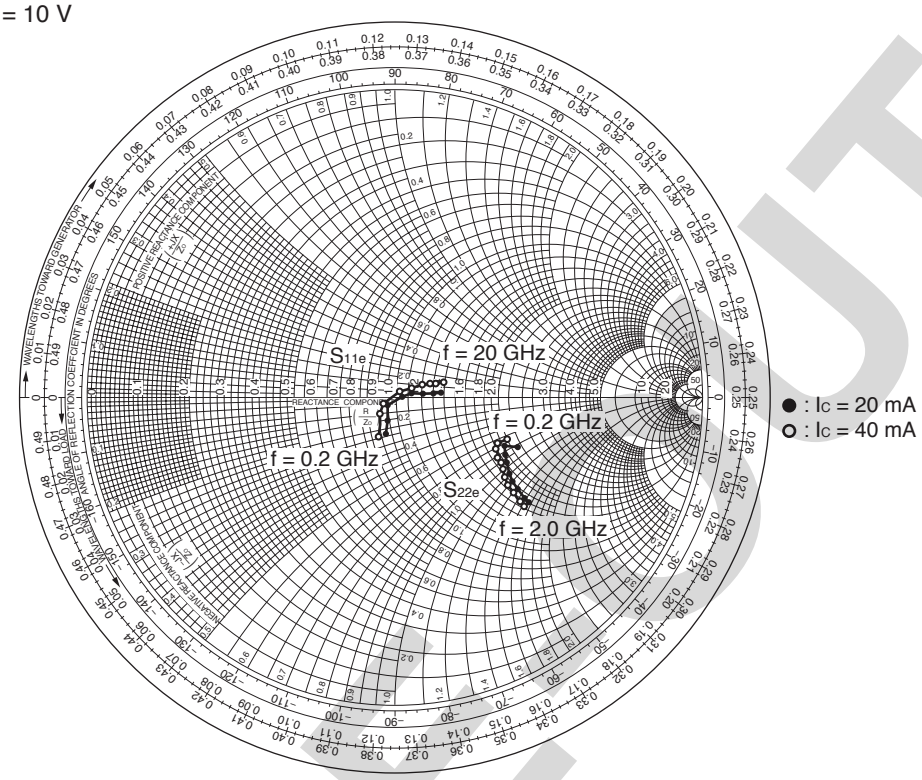
Remark The graphs indicate nominal characteristics.

S-PARAMETERS

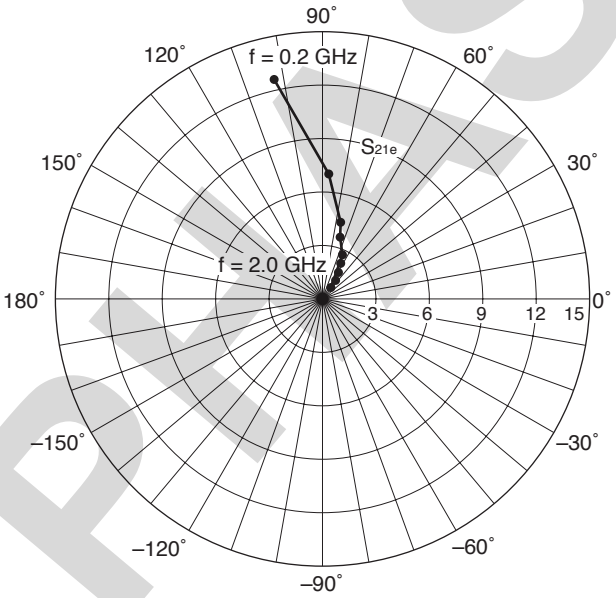
- S-parameters and noise parameters are provided on our Web site in a format (S2P) that enables the direct import of the parameters to microwave circuit simulators without the need for keyboard inputs.
- Click here to download S-parameters.
- [RF and Microwave] ® [Device Parameters]
- URL http://www.necel.com/microwave/en/

★ SMITH CHART

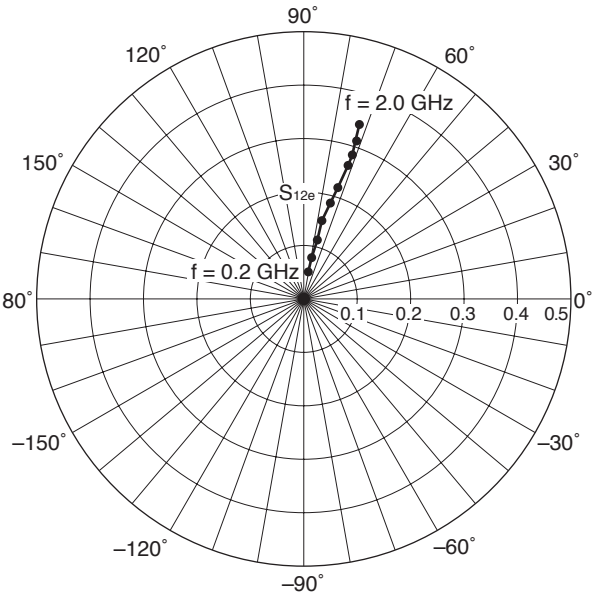
S_{11e}, S_{22e}-FREQUENCY
CONDITION : V_{CE} = 10 V



S_{21e}-FREQUENCY
CONDITION : V_{CE} = 10 V, I_C = 20 mA

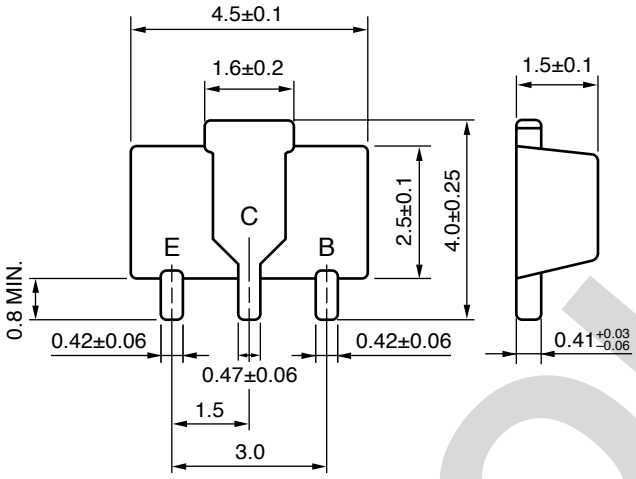


S_{12e}-FREQUENCY
CONDITION : V_{CE} = 10 V, I_C = 20 mA



★ PACKAGE DIMENSIONS

3-PIN POWER MINIMOLD (UNIT: mm)



PIN CONNECTIONS

E : Emitter
C : Collector (Fin)
B : Base

(IEC : SOT-89)

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