

NPN SILICON TRANSISTOR 2SC2570A

HIGH FREQUENCY LOW NOISE AMPLIFIER

NPN SILICON EPITAXIAL TRANSISTOR

DESCRIPTION

The 2SC2570A is designed for use in Low Noise Amplifier of VHF & UHF stages.

FEATURES

- Low noise and high gain : NF = 1.5 dB TYP., Ga = 8 dB TYP. @f = 1.0 GHz, V_{CE} = 10 V, I_c = 5.0 mA
- Wide dynamic range : NF = 1.9 dB, Ga = 9 dB @f = 1 GHz, V_{CE} = 10 V, I_c = 15 mA

ORDERING INFORMATION

Part Number	Quantity
2SC2570A	Loose products (500 pcs)
2SC2570A-T	Taping products (Box type) (2 500 pcs)

Remark To order evaluation samples, please contact your NEC sales office (available in 500-pcs units).

ABSOLUTE MAXIMUM RATINGS (T_A = +25 °C)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V _{CBO}	25	V
Collector to Emitter Voltage	V _{CEO}	12	V
Emitter to Base Voltage	V _{EBO}	3.0	V
Collector Current	I _c	70	mA
Total Power Dissipation	P _{tot}	600	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-65 to +150	°C

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Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

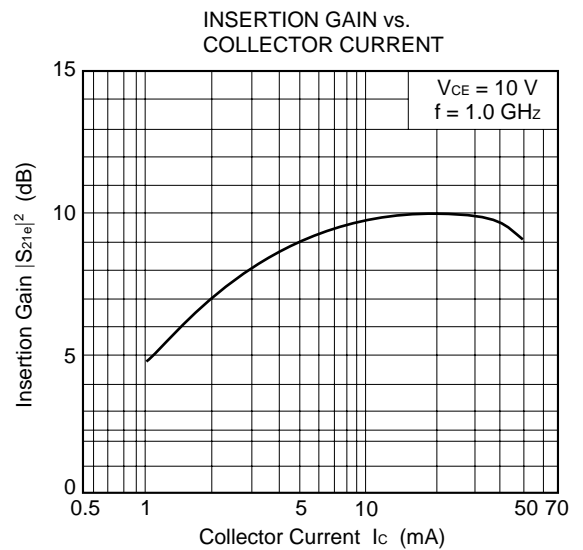
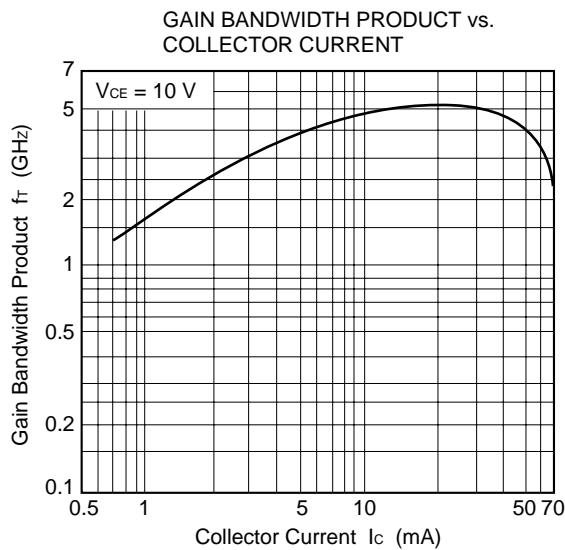
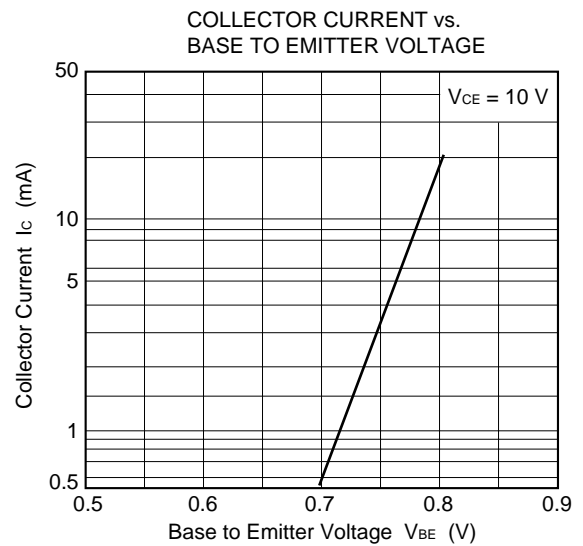
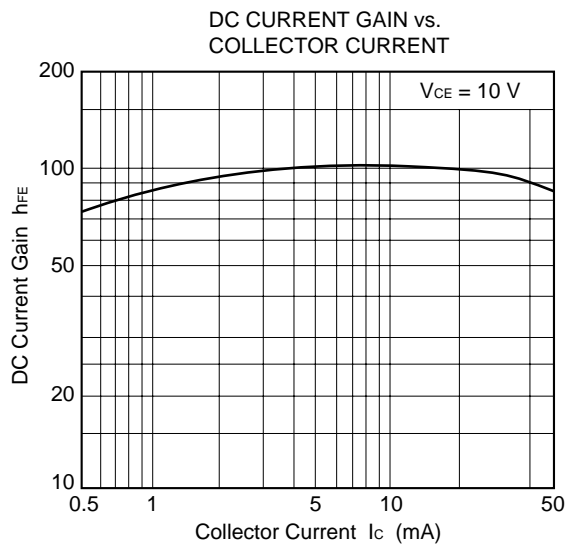
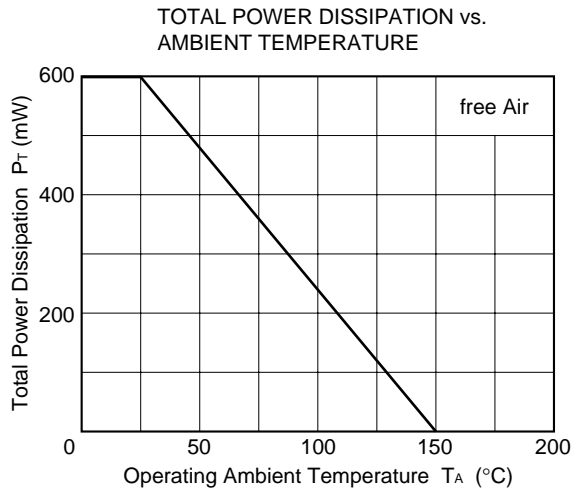
ELECTRICAL CHARACTERISTICS (T_A = +25 °C)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Current Gain	h_{FE} ^{Note 1}	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}$	40	–	200	–
Gain Bandwidth Product	f_T	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}$	–	5.0	–	GHz
Output Capacitance	C_{Ob} ^{Note 2}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$	–	0.7	0.9	pF
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}, f = 1.0\text{ GHz}$	8	10	–	dB
Noise Figure	NF	$V_{CE} = 10\text{ V}, I_C = 5\text{ mA}, f = 1.0\text{ GHz}$	–	1.5	3.0	dB
Maximum Available Gain	MAG	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}, f = 1.0\text{ GHz}$	–	11.5	–	dB
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{ V}, I_E = 0$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 2.0\text{ V}, I_C = 0$	–	–	0.1	μA

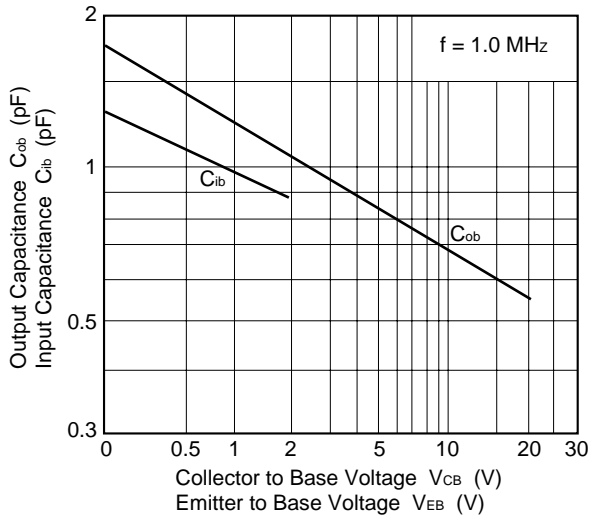
Notes 1. Pulse Measurement: $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

2. The emitter and case terminal should be connected to the guard terminal of the capacitance bridge.

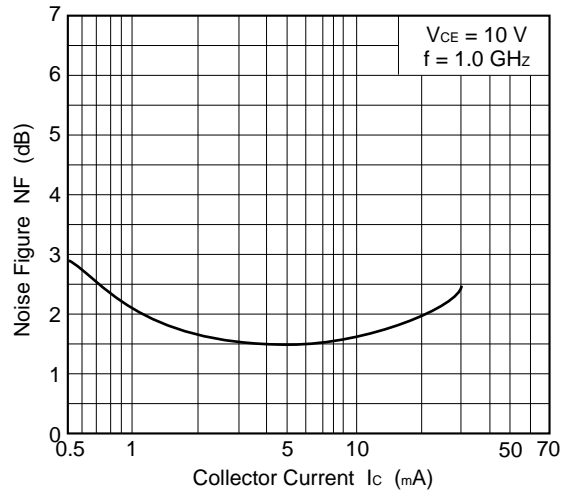
TYPICAL CHARACTERISTICS (T_A = +25 °C)



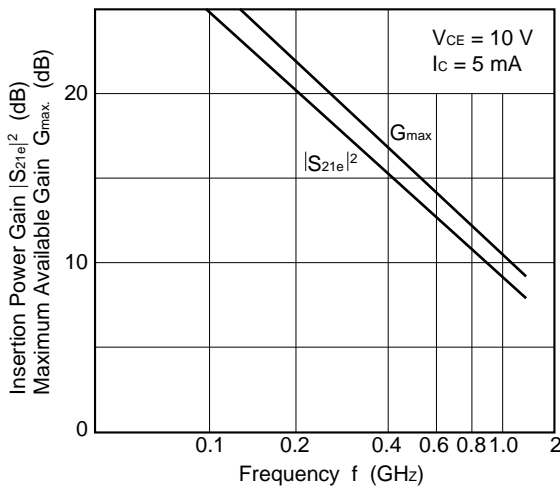
OUTPUT AND INPUT CAPACITANCE vs. REVERSE VOLTAGE



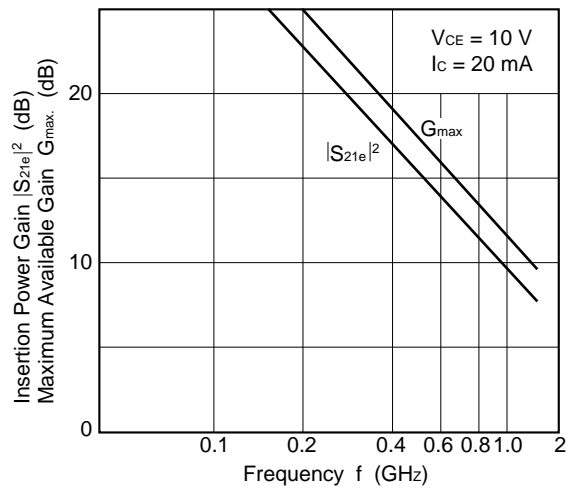
NOISE FIGURE vs. COLLECTOR CURRENT



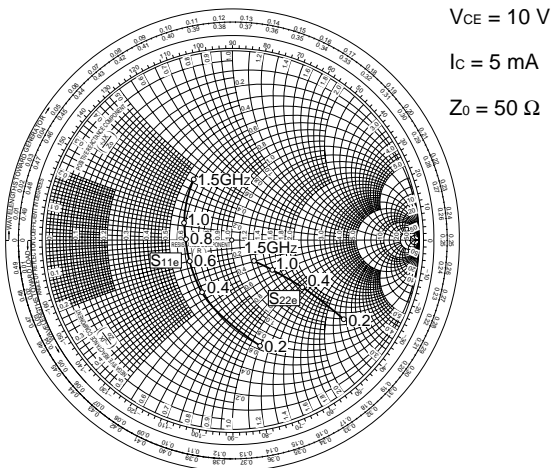
INSERTION POWER GAIN, MAXIMUM AVAILABLE GAIN vs. FREQUENCY



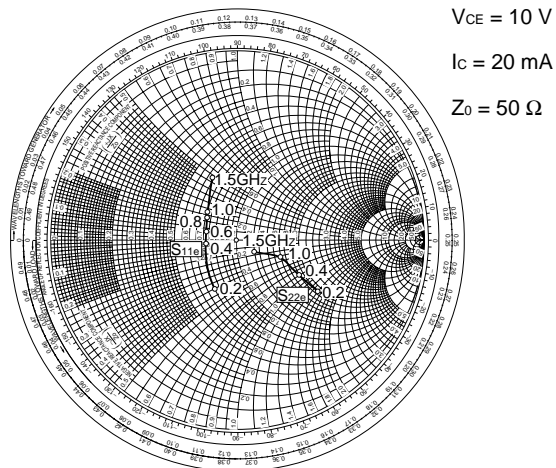
INSERTION POWER GAIN, MAXIMUM AVAILABLE GAIN vs. FREQUENCY



S-PARAMETER

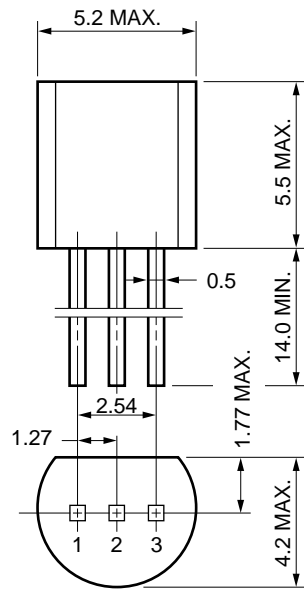


S-PARAMETER



PACKAGE DIMENSION

TO-92 (UNIT:mm)



- | | | |
|--------------|-------|----------|
| 1. BASE | EIAJ | : SC-43B |
| 2. EMITTER | JEDEC | : TO-92 |
| 3. COLLECTOR | IEC | : PA33 |

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