

NPN SILICON RF TRANSISTOR
2SC2570A

NPN EPITAXIAL SILICON RF TRANSISTOR
 FOR HIGH-FREQUENCY LOW-NOISE AMPLIFICATION

DESCRIPTION

The 2SC2570A is designed for use in Low Noise Amplifier of VHF and UHF satges.

FEATURES

- Low noise and high gain : NF = 1.5 dB TYP., $G_a = 8$ dB TYP. @ $V_{CE} = 10$ V, $I_c = 5$ mA, $f = 1$ GHz
- Wide dynamic range : NF = 1.9 dB TYP., $G_a = 9$ dB TYP. @ $V_{CE} = 10$ V, $I_c = 15$ mA, $f = 1$ GHz

★ **ORDERING INFORMATION**

Part Number	Quantity	Supplying Form
2SC2570A	500 pcs (Non reel)	<ul style="list-style-type: none"> • 18 mm wide radial taping • Supplying paper tape with in a box
2SC2570A-T	2.5 kpcs/box (Box type)	

Remark To order evaluation samples, contact your nearby sales office.
 The unit sample quantity is 500 pcs.

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} ^{Note}	600	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-65 to +150	°C

Note Free air

Caution Observe precautions when handling because these devices are sensitive to electrostatic discharge.

The information in this document is subject to change without notice. Before using this document, please confirm that this is the latest version.
 Not all devices/types available in every country. Please check with local NEC Compound Semiconductor Devices representative for availability and additional information.

ELECTRICAL CHARACTERISTICS (T_A = +25°C)

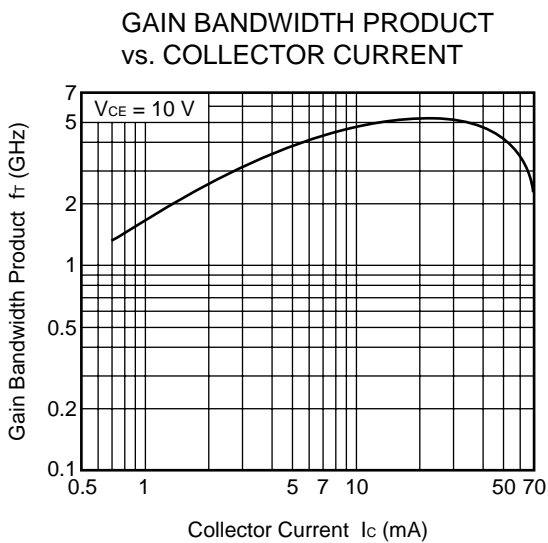
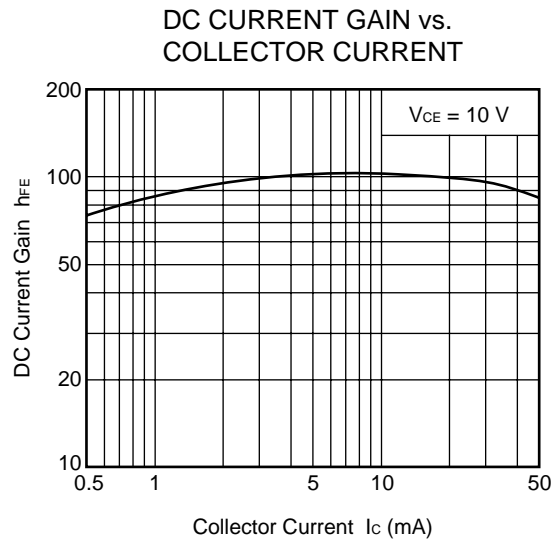
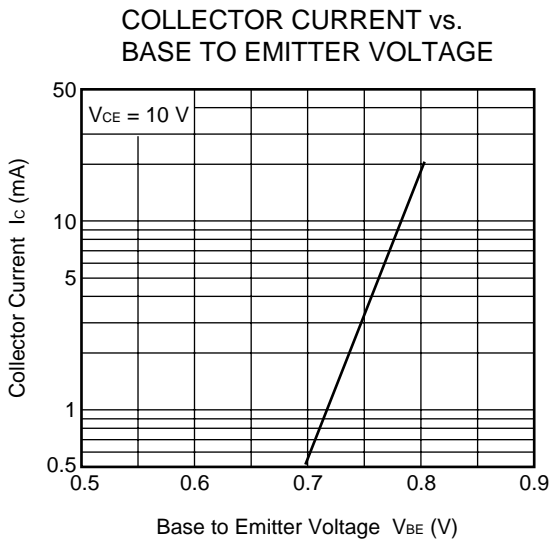
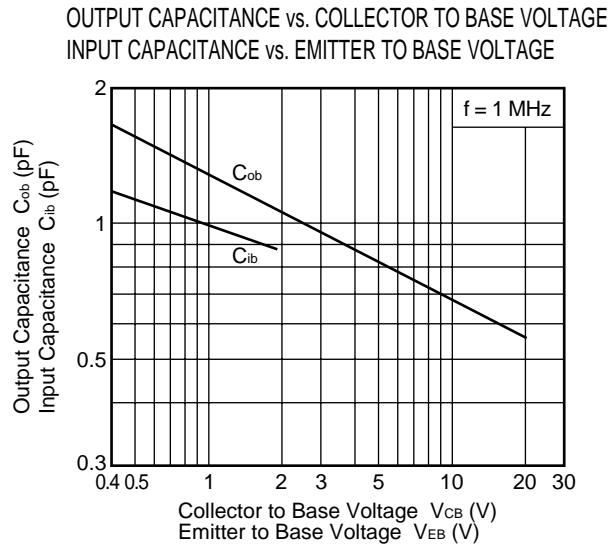
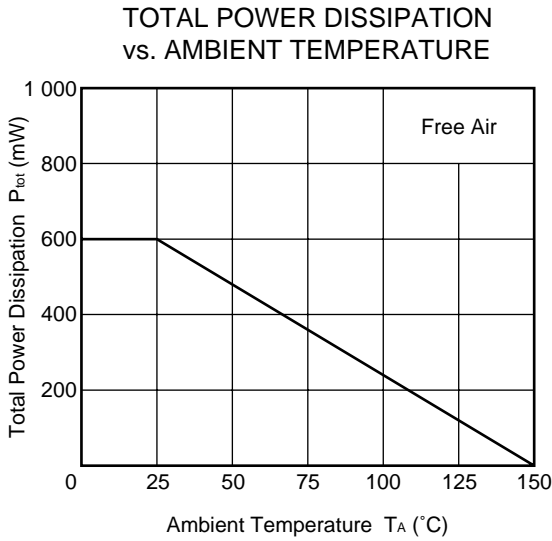
Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Characteristics						
Collector Cut-off Current	I _{CBO}	V _{CB} = 10 V, I _E = 0 mA	–	–	1.0	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 1.0 V, I _C = 0 mA	–	–	1.0	μA
DC Current Gain	h _{FE} ^{Note 1}	V _{CE} = 10 V, I _C = 20 mA	40	–	200	–
RF Characteristics						
Gain Bandwidth Product	f _T	V _{CE} = 10 V, I _C = 20 mA	–	5.0	–	GHz
Insertion Power Gain	S _{21e} ²	V _{CE} = 10 V, I _C = 20 mA, f = 1 GHz	8	10	–	dB
Noise Figure	NF	V _{CE} = 10 V, I _C = 5 mA, f = 1 GHz	–	1.5	3.0	dB
Output Capacitance	C _{ob} ^{Note 2}	V _{CB} = 10 V, I _E = 0 mA, f = 1 MHz	–	0.7	0.9	pF
Maximum Available Power Gain	MAG	V _{CE} = 10 V, I _C = 20 mA, f = 1 GHz	–	11.5	–	dB

- Notes** 1. Pulse measurement: PW ≤ 350 μs, Duty Cycle ≤ 2%
 2. Collector to base capacitance when the emitter grounded

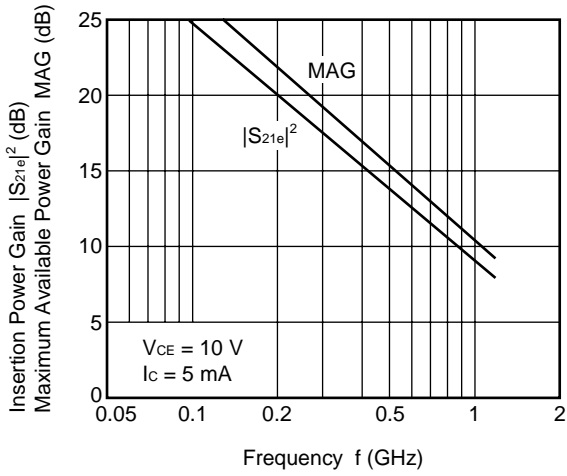
★ **h_{FE} CLASSIFICATION**

Rank	E
Marking	E
h _{FE} Value	40 to 200

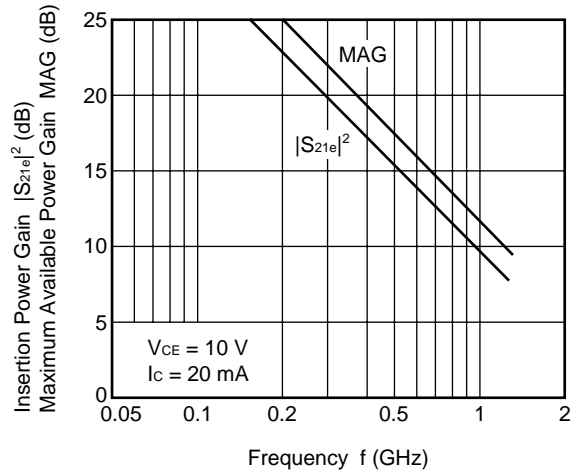
TYPICAL CHARACTERISTICS (T_A = +25°C, unless otherwise specified)



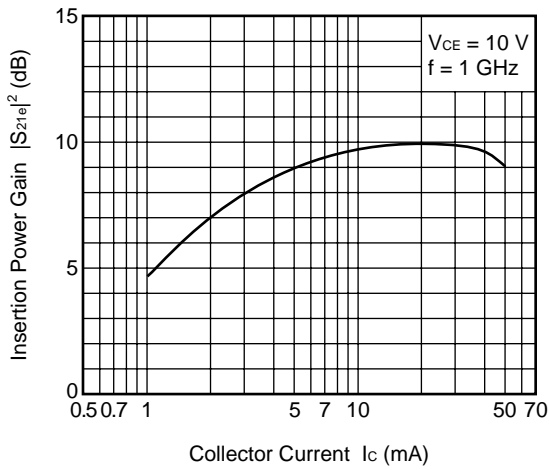
INSERTION POWER GAIN, MAG vs. FREQUENCY



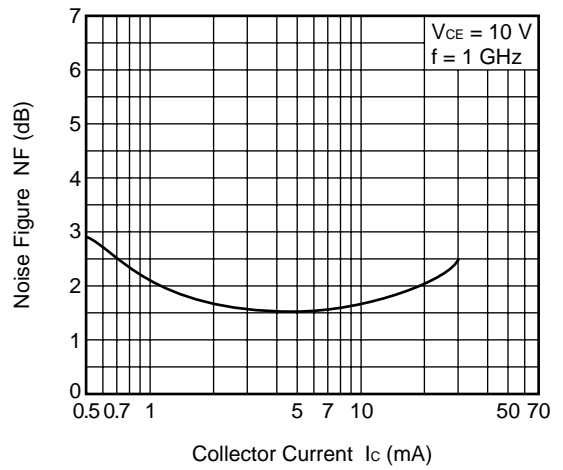
INSERTION POWER GAIN, MAG vs. FREQUENCY



INSERTION POWER GAIN vs. COLLECTOR CURRENT



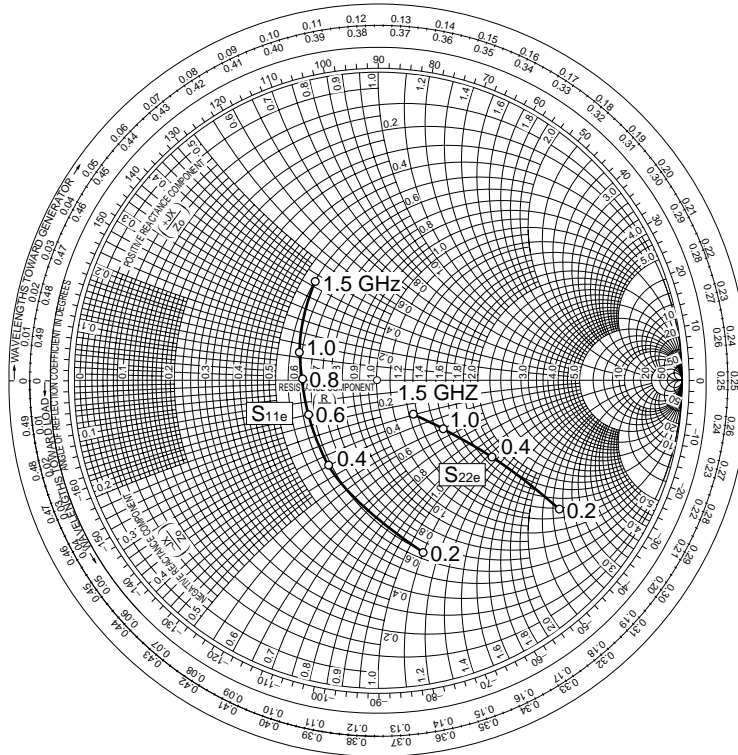
NOISE FIGURE vs. COLLECTOR CURRENT



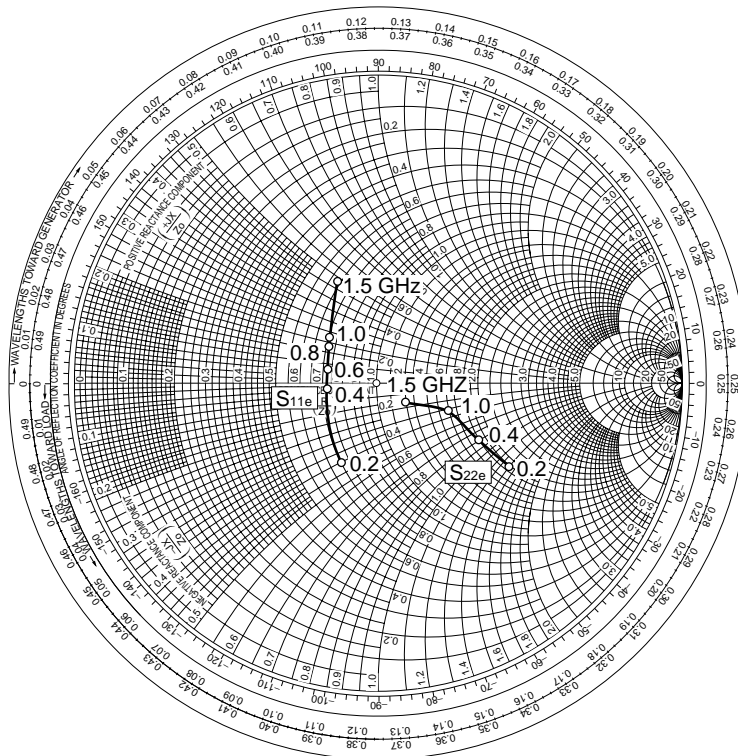
Remark The graphs indicate nominal characteristics.

SMITH CHART

$V_{CE} = 10\text{ V}$
 $I_C = 5\text{ mA}$
 $Z_0 = 50\ \Omega$

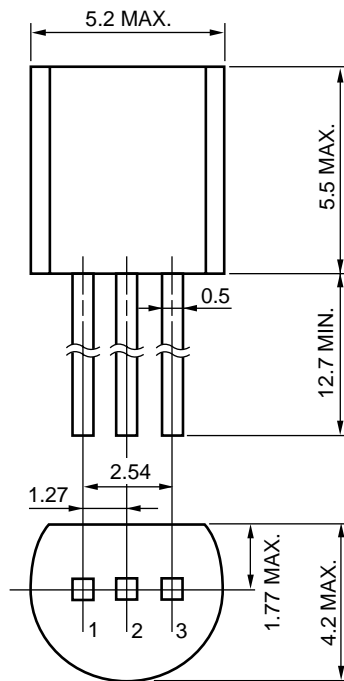


$V_{CE} = 10\text{ V}$
 $I_C = 20\text{ mA}$
 $Z_0 = 50\ \Omega$



★ PACKAGE DIMENSIONS

TO-92 (UNIT: mm)



PIN CONNECTIONS

- 1. Base EIAJ : SC-43B
- 2. Emitter JEDEC: TO-92
- 3. Collector IEC : PA33

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► For further information, please contact

NEC Compound Semiconductor Devices, Ltd.

5th Sales Group, Sales Division TEL: +81-44-435-1588 FAX: +81-44-435-1579 E-mail: salesinfo@csd-nec.com

NEC Compound Semiconductor Devices Hong Kong Limited

Hong Kong Head Office TEL: +852-3107-7303 FAX: +852-3107-7309 E-mail: ncsd-hk@elhk.nec.com.hk

Taipei Branch Office TEL: +886-2-8712-0478 FAX: +886-2-2545-3859

Korea Branch Office TEL: +82-2-558-2120 FAX: +82-2-558-5209

NEC Electronics (Europe) GmbH <http://www.ee.nec.de/>

TEL: +49-211-6503-01 FAX: +49-211-6503-487

California Eastern Laboratories, Inc. <http://www.cel.com/>

TEL: +1-408-988-3500 FAX: +1-408-988-0279