

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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NPN SILICON RF TRANSISTOR
2SC4571

NPN EPITAXIAL SILICON RF TRANSISTOR
 FOR UHF TUNER OSC/MIX
 3-PIN SUPER MINIMOLD

DESCRIPTION

The 2SC4571 is a low supply voltage transistor designed for UHF OSC/MIX.
 It is suitable for a high density surface mount assembly since the transistor has been applied super minimold package.

FEATURES

- High Gain Bandwidth Product
 $f_T = 5.0 \text{ GHz TYP. @ } V_{CE} = 5 \text{ V, } I_C = 5 \text{ mA, } f = 1 \text{ GHz}$
- Low Output Capacitance
 $C_{ob} = 0.9 \text{ pF TYP. @ } V_{CB} = 5 \text{ V, } I_E = 0 \text{ mA, } f = 1 \text{ MHz}$
- 3-pin super minimold Package

★ **ORDERING INFORMATION**

Part Number	Quantity	Supplying Form
2SC4571	50 pcs (Non reel)	<ul style="list-style-type: none"> • 8 mm wide embossed taping • Pin 3 (collector) face to perforation side of the tape
2SC4571-T1	3 kpcs/reel	

Remark To order evaluation samples, contact your nearby sales office.
 The unit sample quantity is 50 pcs.

ABSOLUTE MAXIMUM RATINGS (T_A = +25°C)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V _{CBO}	20	V
Collector to Emitter Voltage	V _{CEO}	12	V
Emitter to Base Voltage	V _{EBO}	3	V
Collector Current	I _C	60	mA
Total Power Dissipation	P _{tot} ^{Note}	120	mW
Junction Temperature	T _j	125	°C
Storage Temperature	T _{stg}	-55 to +125	°C

Note Free air

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

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ELECTRICAL CHARACTERISTICS (T_A = +25°C)

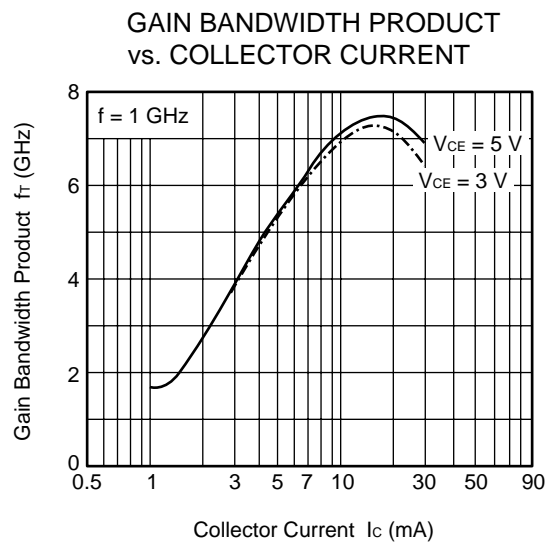
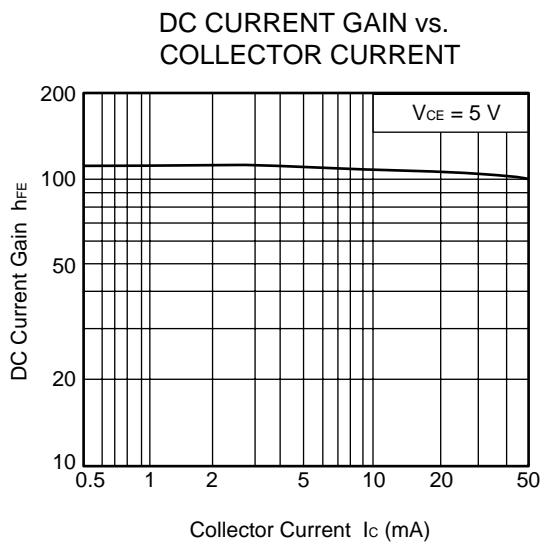
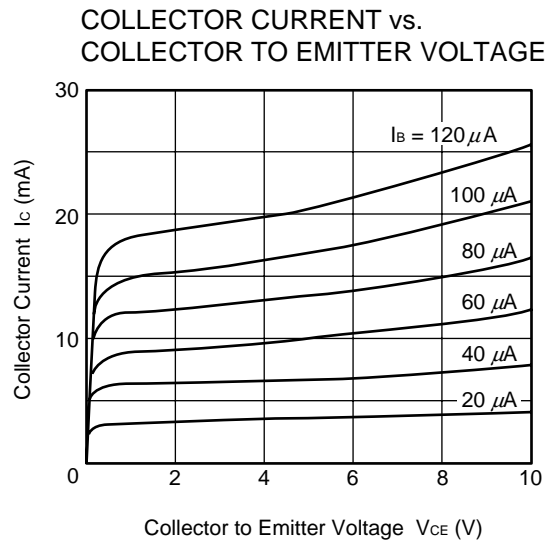
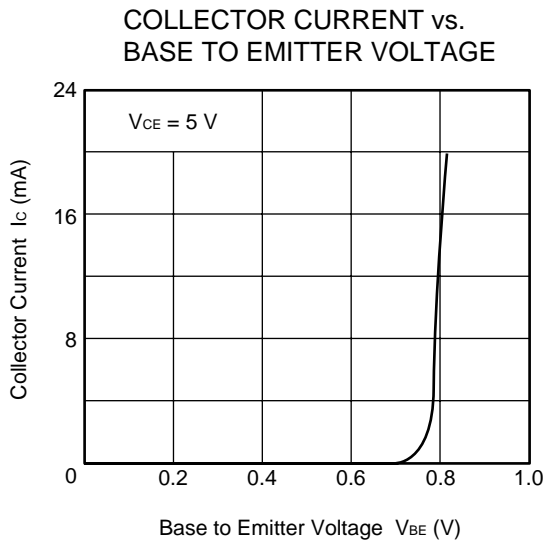
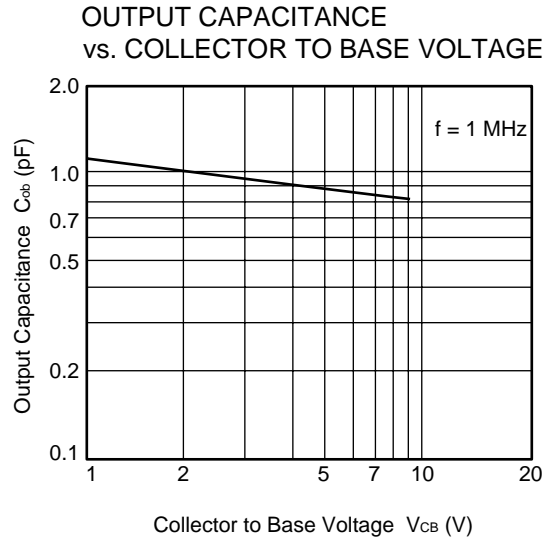
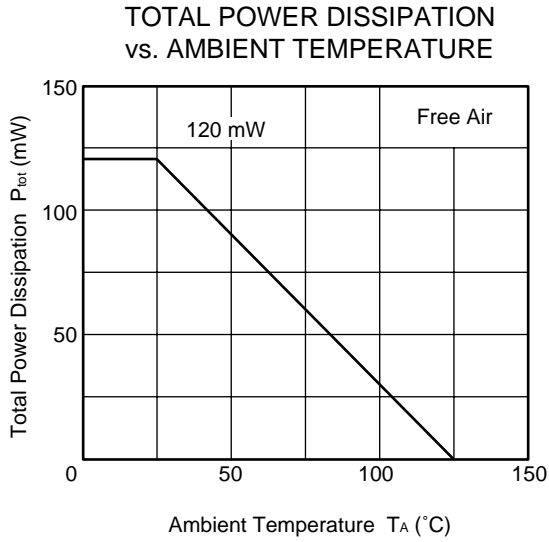
Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Characteristics						
Collector Cut-off Current	I _{CBO}	V _{CB} = 15 V, I _E = 0 mA	–	–	100	nA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 1 V, I _C = 0 mA	–	–	100	nA
Collector Saturation Voltage	V _{CE(sat)}	h _{FE} = 10, I _C = 5 mA	–	–	0.5	V
DC Current Gain	h _{FE} ^{Note 1}	V _{CE} = 5 V, I _C = 5 mA	40	100	200	–
RF Characteristics						
Gain Bandwidth Product	f _T	V _{CE} = 5 V, I _C = 5 mA, f = 1.0 GHz	–	5.0	–	GHz
Insertion Power Gain	S _{21e} ²	V _{CE} = 5 V, I _C = 5 mA, f = 1.0 GHz	5.0	–	–	dB
Output Capacitance	C _{ob} ^{Note 2}	V _{CB} = 5 V, I _E = 0 mA, f = 1.0 MHz	–	0.9	1.2	pF

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

h_{FE} CLASSIFICATION

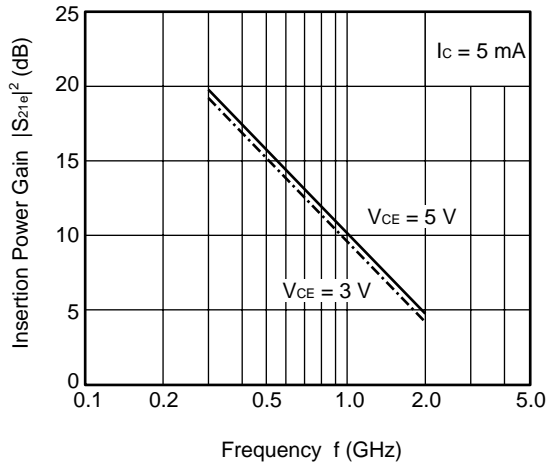
Rank	T75	T76	T77
Marking	T75	T76	T77
h _{FE} Value	40 to 80	60 to 120	100 to 200

TYPICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise specified)

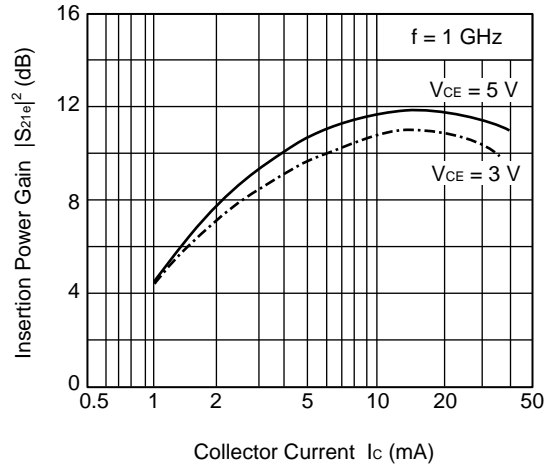


Remark The graphs indicate nominal characteristics.

INSERTION POWER GAIN vs. FREQUENCY



INSERTION POWER GAIN vs. COLLECTOR CURRENT



Remark The graphs indicate nominal characteristics.

★ **S-PARAMETERS**

S-parameters/Noise parameters are provided on the NEC Compound Semiconductor Devices Web site in a form (S2P) that enables direct import to a microwave circuit simulator without keyboard input.

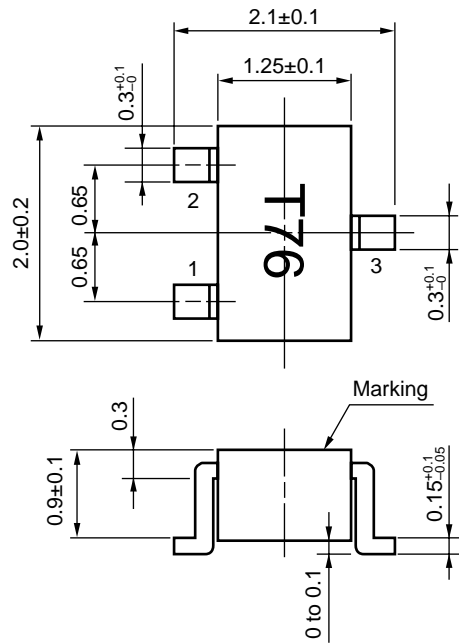
Click here to download S-parameters.

[RF and Microwave] → [Device Parameters]

URL <http://www.ncsd.necel.com/>

★ PACKAGE DIMENSIONS

3-PIN SUPER MINIMOLD PACKAGE (UNIT: mm)



PIN CONNECTIONS

- 1. Emitter
- 2. Base
- 3. Collector

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