

DATA SHEET

NEC

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)	• 8 mm wide embossed taping
2SC4571-T1	3 kpcs/reel	• Pin 3 (collector) face to perforation side of the tape

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

ABSOLUTE MAXIMUM RATINGS ($T_A = +25^\circ\text{C}$)

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	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

Note Free air

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

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 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} = 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

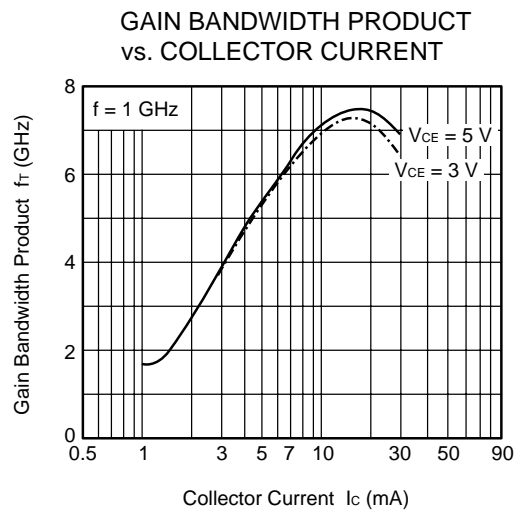
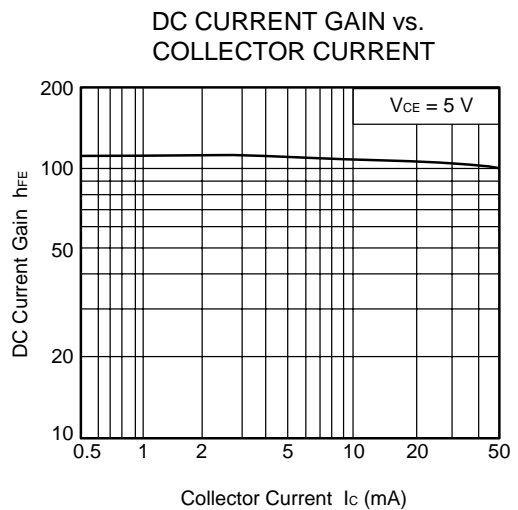
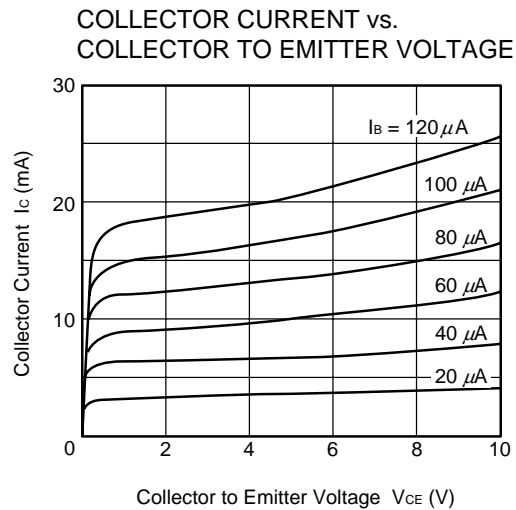
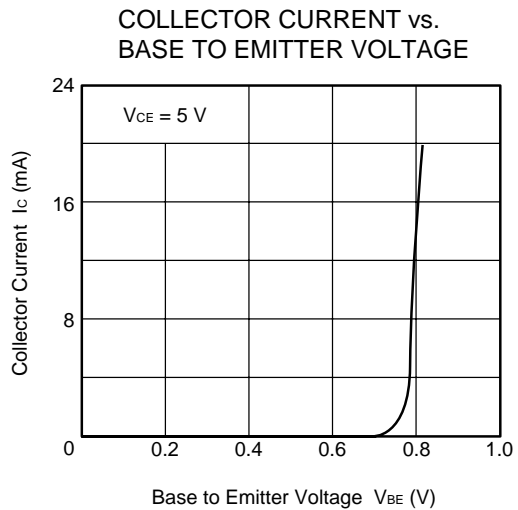
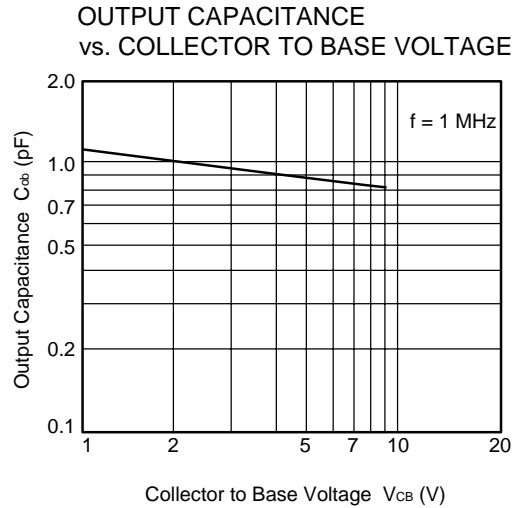
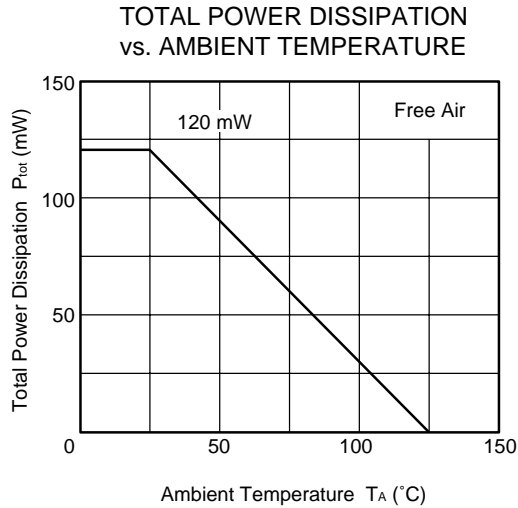
Notes 1. Pulse measurement: PW ≤ 350 μs, Duty Cycle ≤ 2%

2. Collector to base capacitance when the emitter grounded

h_{FE} CLASSIFICATION

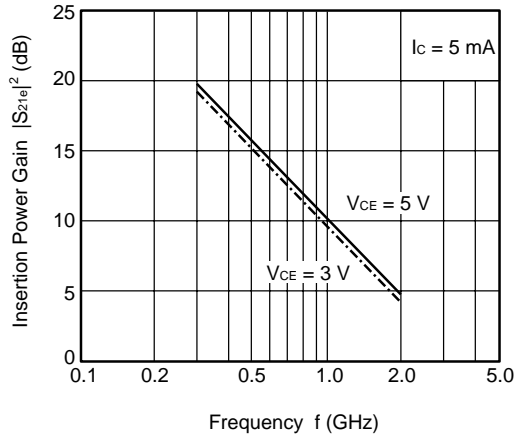
Rank	T75	T76	T77
Marking	T75	T76	T77
h _{FE} Value	40 to 80	60 to 120	100 to 200

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

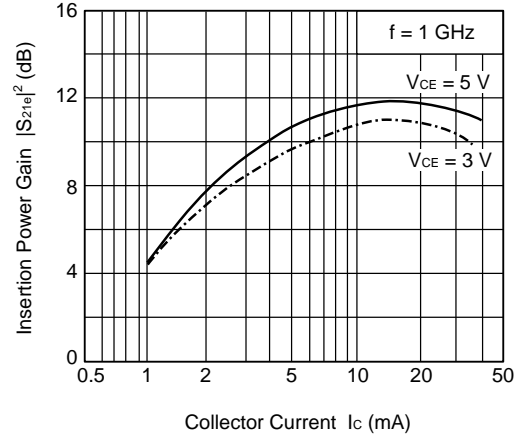


Remark The graphs indicate nominal characteristics.

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.

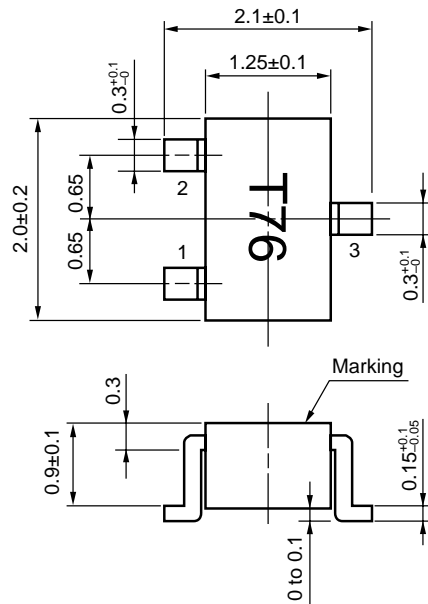
Click here to download S-parameters.

[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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