

NE85630 / 2SC4226

Data Sheet

NPN Silicon RF Transistor

R09DS0022EJ0200

Rev.2.00

NPN Epitaxial Silicon RF Transistor for High-Frequency Low-Noise Amplification 3-pin super Minimold

Jun 29, 2011

DESCRIPTION

The 2SC4226 is a low supply voltage transistor designed for VHF, UHF low noise amplifier.

It is suitable for a high density surface mount assembly since the transistor has been applied 3-pin super minimold package.

FEATURES

- Low noise : NF = 1.2 dB TYP. @ $V_{CE} = 3\text{ V}$, $I_C = 7\text{ mA}$, $f = 1\text{ GHz}$
- High gain : $|S_{21e}|^2 = 9\text{ dB}$ TYP. @ $V_{CE} = 3\text{ V}$, $I_C = 7\text{ mA}$, $f = 1\text{ GHz}$
- 3-pin super minimold package

<R> ORDERING INFORMATION

Part Number	Order Number	Package	Quantity	Supplying Form
NE85630 2SC4226	NE85630-A 2SC4226-A	3-pin super	50 pcs (Non reel)	• 8 mm wide embossed taping • Pin 3 (Collector) face the perforation side of the tape
NE85630-T1 2SC4226-T1	NE85630-T1-A 2SC4226-T1-A	Minimold (Pb-Free)	3 kpcs/reel	

Remark To order evaluation samples, please 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	100	mA
Total Power Dissipation	P_{tot} ^{Note}	150	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 mark <R> shows major revised points.

The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Characteristics						
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$	–	–	1.0	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$	–	–	1.0	μA
DC Current Gain	h_{FE} ^{Note 1}	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}$	40	110	250	–
RF Characteristics						
Gain Bandwidth Product	f_T	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}$	3.0	4.5	–	GHz
Insertion Power Gain	$ S_{21e} ^2$	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}, f = 1\text{ GHz}$	7	9	–	dB
Noise Figure	NF	$V_{CE} = 3\text{ V}, I_C = 7\text{ mA}, f = 1\text{ GHz}$	–	1.2	2.5	dB
Reverse Transfer Capacitance	C_{re} ^{Note 2}	$V_{CB} = 3\text{ V}, I_E = 0, f = 1\text{ MHz}$	–	0.7	1.5	pF

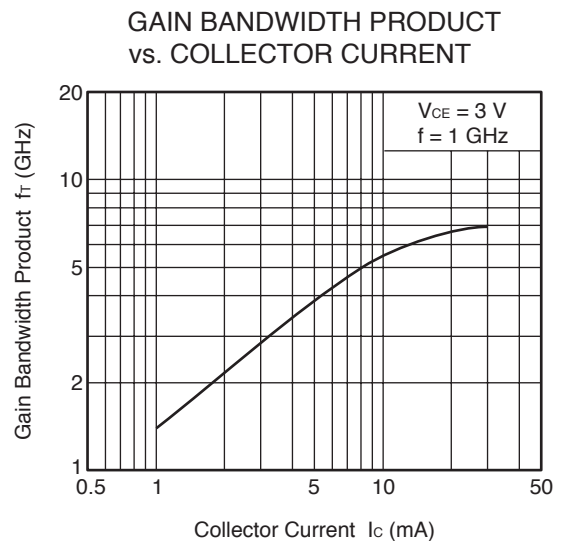
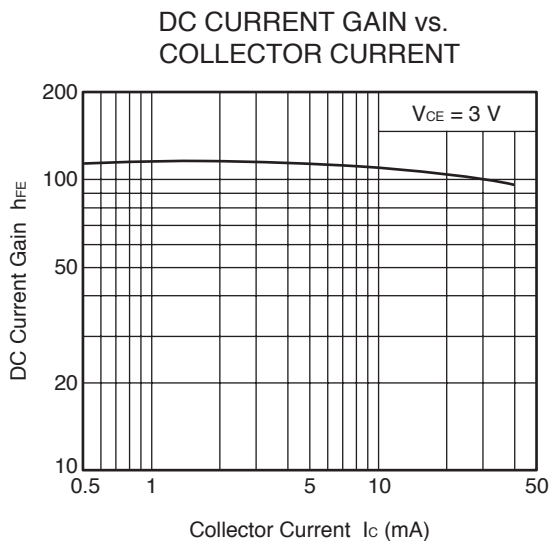
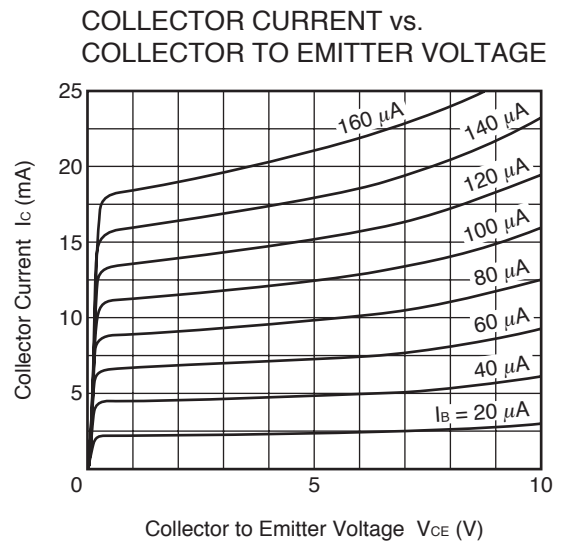
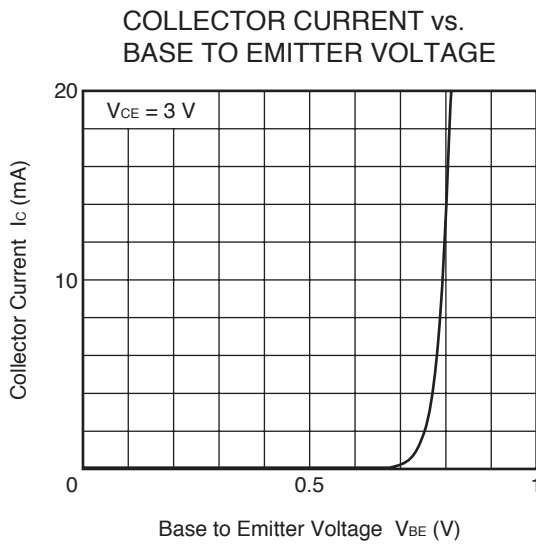
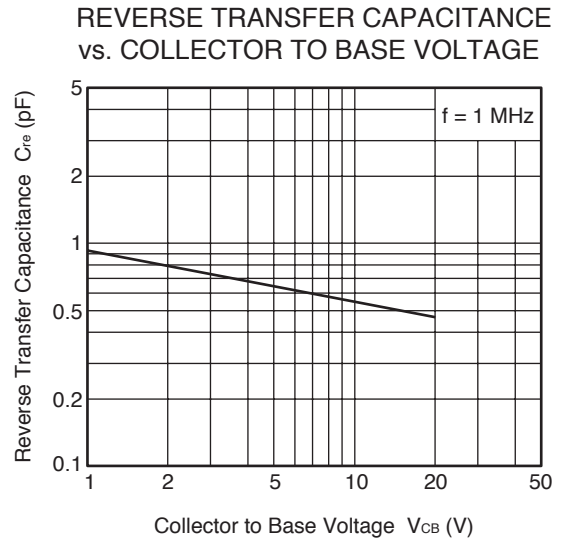
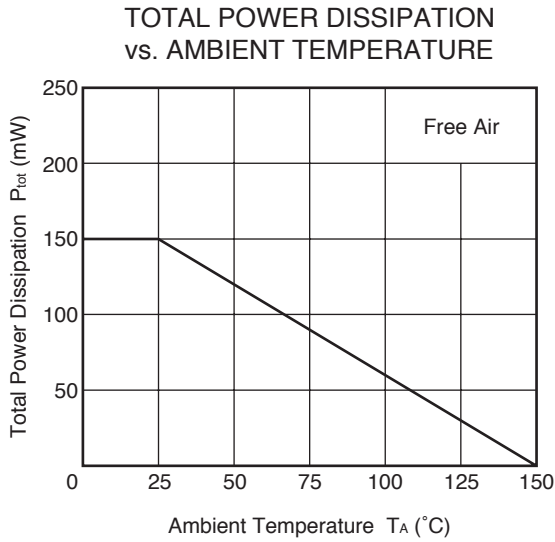
Notes 1. Pulse measurement: $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

2. Collector to base capacitance when the emitter grounded

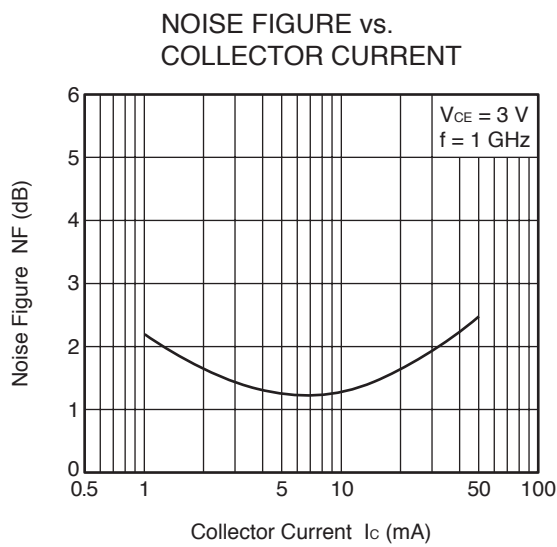
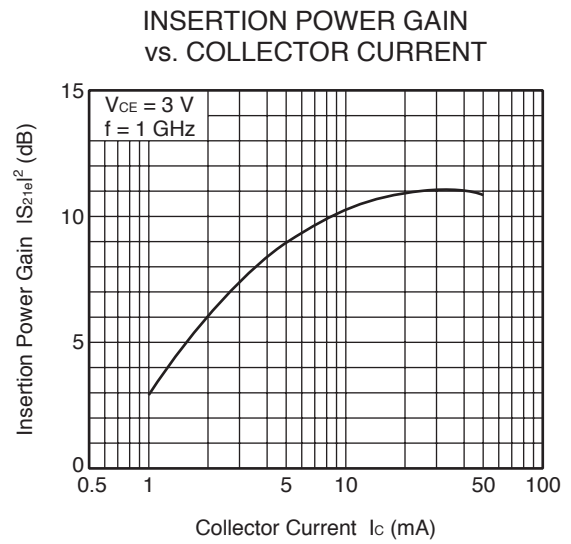
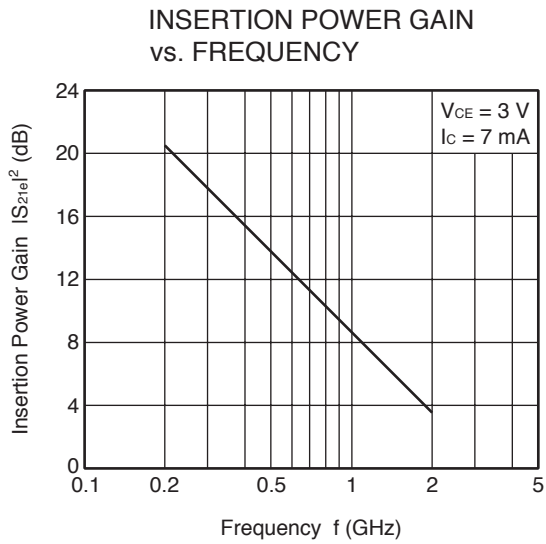
<R> h_{FE} CLASSIFICATION

Rank	R23/Y23	R24/Y24	R25/Y25
Marking	R23	R24	R25
h_{FE} Value	40 to 80	70 to 140	125 to 250

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



Remark The graphs indicate nominal characteristics.



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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.

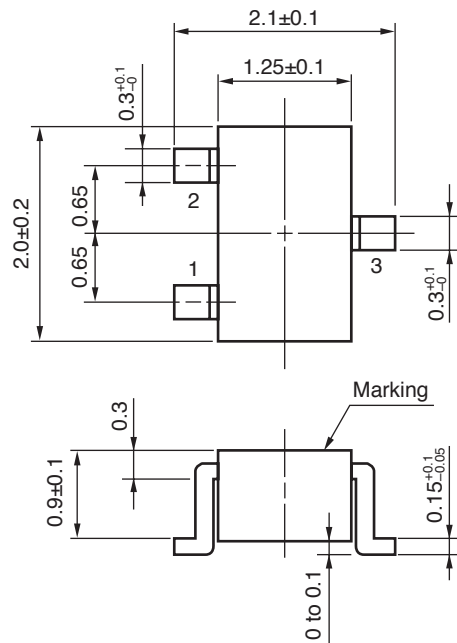
[RF and Microwave] → [Device Parameters]

URL <http://www2.renesas.com/microwave/en/download.html>

NE85630 / 2SC4226

PACKAGE DIMENSIONS

3-PIN SUPER MINIMOLD (UNIT: mm)



PIN CONNECTIONS

1. Emitter
 2. Base
 3. Collector
- (EIAJ : SC-70)

Revision History	2SC4226 Data Sheet
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Rev.	Date	Description	
		Page	Summary
-	Dec 2003	-	Previous No. :PU10450EJ01V0DS
2.00	Jun 29, 2011	p.1	Modification of ORDERING INFORMATION
		p.2	Modification of h_{FE} CLASSIFICATION

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