



NE85630 / 2SC4226 JEITA Part No.

Data Sheet

R09DS0022EJ0200 Rev.2.00 Jun 29, 2011

NPN Silicon RF Transistor

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

DESCRIPTION

The NE85630 / 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. @ VcE = 3 V, Ic = 7 mA, f = 1 GHz
- High gain : $|S_{21e}|^2 = 9 \text{ dB TYP.}$ @ VcE = 3 V, Ic = 7 mA, f = 1 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
NE85630-T1 2SC4226-T1	NE85630-T1-A 2SC4226-T1-A	Minimold (Pb-Free)	3 kpcs/reel	Pin 3 (Collector) face the perforation side of the tape

Remark To order evaluation samples, please contact your nearby sales office.

The unit sample quantity is 50 pcs.

ABSOLUTE MAXIMUM RATINGS (TA = +25°C)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V _{CBO}	20	V
Collector to Emitter Voltage	VCEO	12	٧
Emitter to Base Voltage	VEBO	3	٧
Collector Current	lc	100	mA
Total Power Dissipation	P _{tot} Note	150	mW
Junction Temperature	Tj	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 (TA = +25°C)

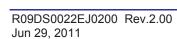
Parameter	Symbol	Test Conditions	MIN.	TYP.	MAX.	Unit
DC Characteristics						
Collector Cut-off Current	Ісво	Vcb = 10 V, IE = 0	-	-	1.0	μΑ
Emitter Cut-off Current	Ієво	V _{EB} = 1 V, I _C = 0	-	-	1.0	μΑ
DC Current Gain	hfE Note 1	Vce = 3 V, Ic = 7 mA	40	110	250	_
RF Characteristics						
Gain Bandwidth Product	f⊤	Vce = 3 V, Ic = 7 mA	3.0	4.5	-	GHz
Insertion Power Gain	S _{21e} ²	Vce = 3 V, Ic = 7 mA, f = 1 GHz	7	9	_	dB
Noise Figure	NF	Vce = 3 V, Ic = 7 mA, f = 1 GHz	-	1.2	2.5	dB
Reverse Transfer Capacitance	Cre Note 2	Vcb = 3 V, IE = 0, f = 1 MHz	\triangle	0.7	1.5	pF

Notes 1. Pulse measurement: PW \leq 350 μ s, Duty Cycle \leq 2%

2. Collector to base capacitance when the emitter grounded

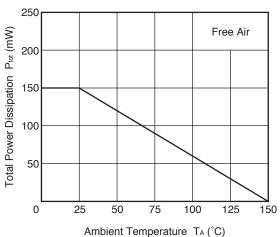
<R> hfe CLASSIFICATION

Rank	R23/Y23	R24/Y24	R25/Y25	
Marking	R23	R24	R25	
hre Value 40 to 80		70 to 140	125 to 250	

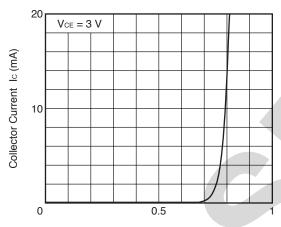


TYPICAL CHARACTERISTICS (TA = +25°C, unless otherwise specified)

TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE

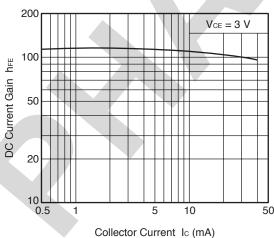


COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



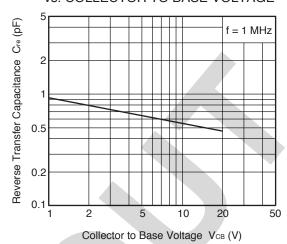
Base to Emitter Voltage $V_{BE}(\overline{V})$

DC CURRENT GAIN vs. COLLECTOR CURRENT

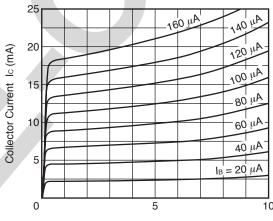


Remark The graphs indicate nominal characteristics.

REVERSE TRANSFER CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE

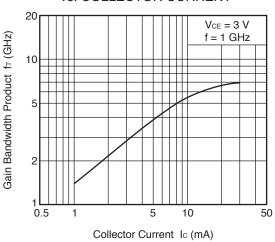


COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE

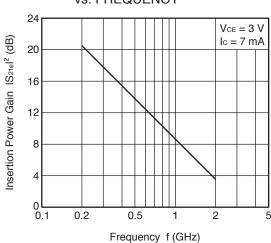


Collector to Emitter Voltage VcE (V)

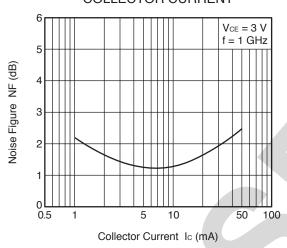
GAIN BANDWIDTH PRODUCT vs. COLLECTOR CURRENT



INSERTION POWER GAIN vs. FREQUENCY

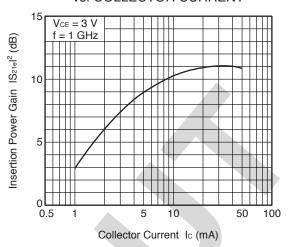


NOISE FIGURE vs. COLLECTOR CURRENT



Remark The graphs indicate nominal characteristics.

INSERTION POWER GAIN vs. COLLECTOR CURRENT





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.

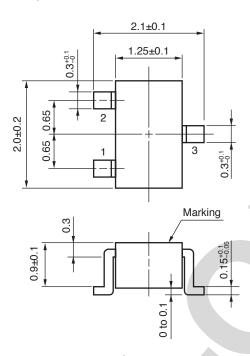
[RF and Microwave] → [Device Parameters]

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



PACKAGE DIMENSIONS

3-PIN SUPER MINIMOLD (UNIT: mm)



PIN CONNECTIONS

- Emitter
 Base
- 3. Collector

(EIAJ : SC-70)

NE85630 / 2SC4226 Data Sheet

		Description		
Rev.	Date	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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