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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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Not recommended
for new design

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2SC1906

Silicon NPN Epitaxial Planar

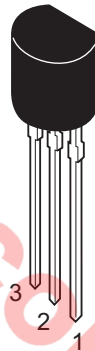
REJ03G0693-0200
 (Previous ADE-208-1058)
 Rev.2.00
 Aug.10.2005

Application

- VHF amplifier
- Mixer, Local oscillator

Outline

RENESAS Package code: PRSS0003DA-C
 (Package name: TO-92 (2))



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	19	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	50	mA
Emitter current	I_E	-50	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

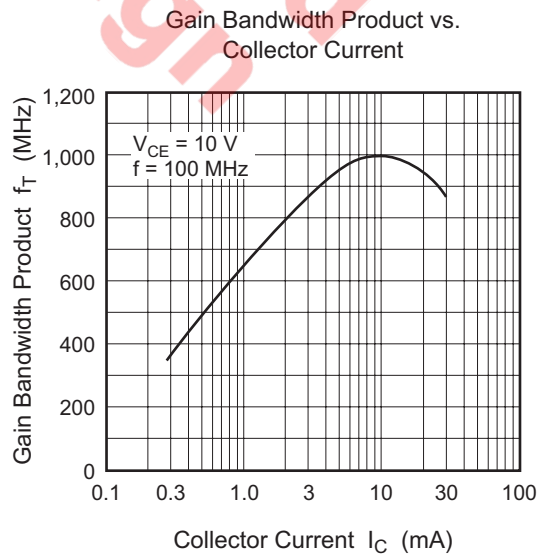
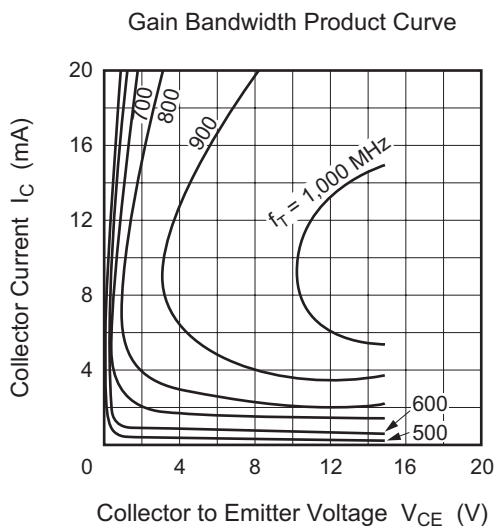
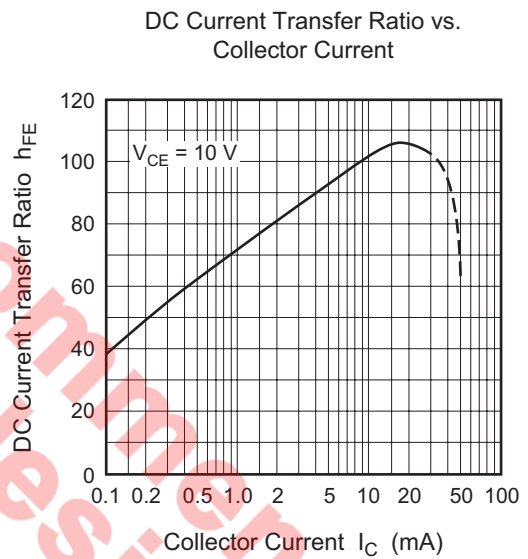
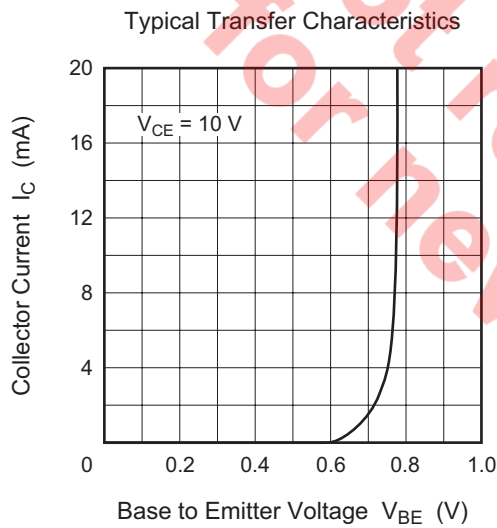
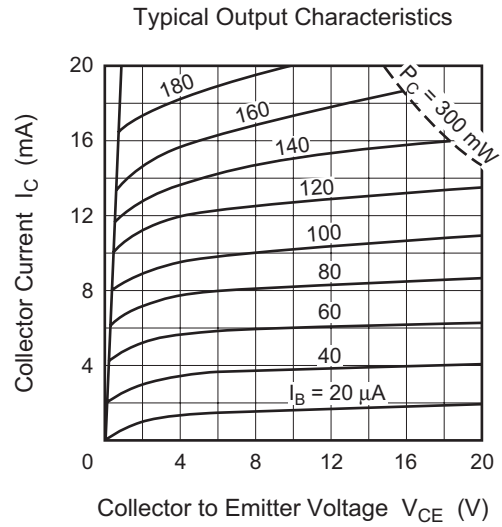
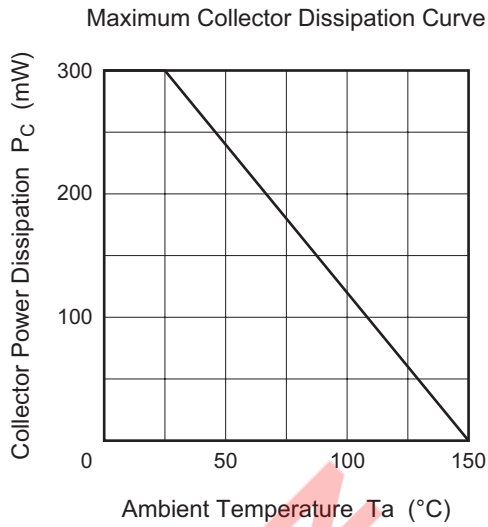
Electrical Characteristics

(Ta = 25°C)

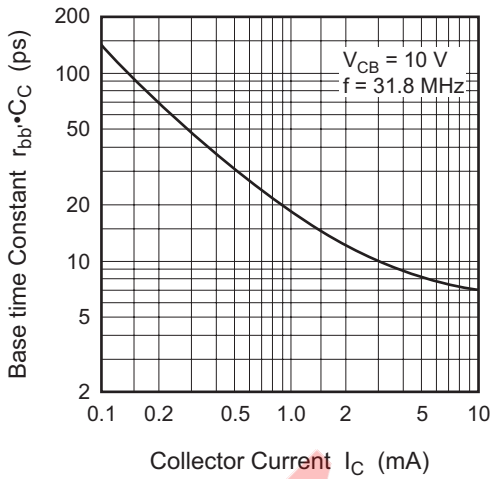
Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$	
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	19	—	—	V	$I_C = 3 \text{ mA}, R_{BE} = \infty$	
Emitter to base breakdown voltage	$V_{(BR)EBO}$	2	—	—	V	$I_E = 10 \mu A, I_C = 0$	
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 10 \text{ V}, I_E = 0$	
DC current transfer ratio	h_{FE}	40	—	—		$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$	
Gain bandwidth product	f_T	600	1000	—	MHz	$V_{CE} = 10 \text{ V}, I_C = 10 \text{ mA}$	
Collector output capacitance	C_{ob}	—	1.0	2.0	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	0.2	1.0	V	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$	
Base time constant	$r_{bb'} \cdot C_C$	—	10	25	ps	$V_{CB} = 10 \text{ V}, I_C = 10 \text{ mA}, f = 31.8 \text{ MHz}$	
Power gain	PG	—	33	—	dB	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	f = 45 MHz
		—	18	—	dB	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	f = 200 MHz

Not recommend
for new design

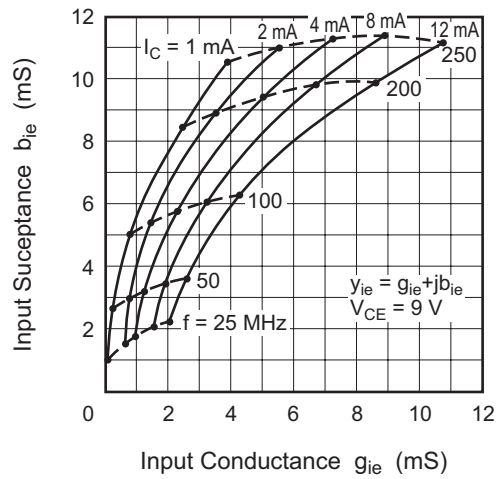
Main Characteristics



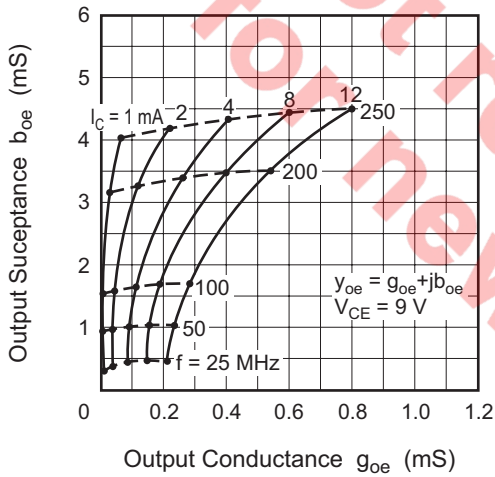
Base Time Constant vs. Collector Current



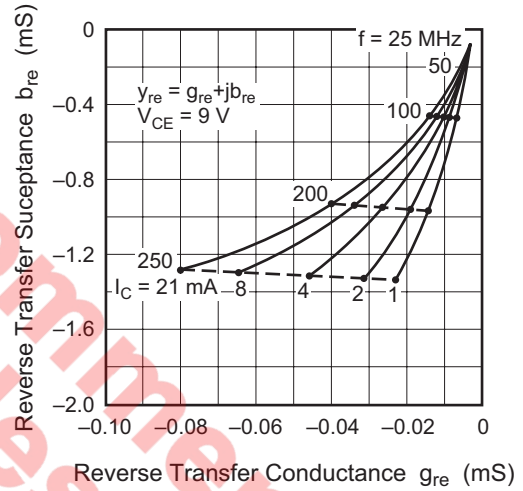
Input Admittance vs. Frequency



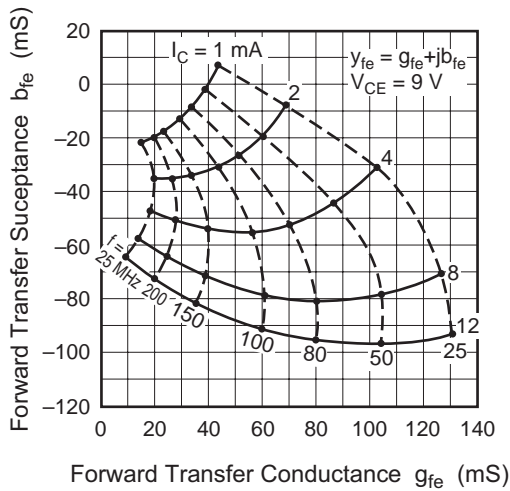
Output Admittance vs. Frequency



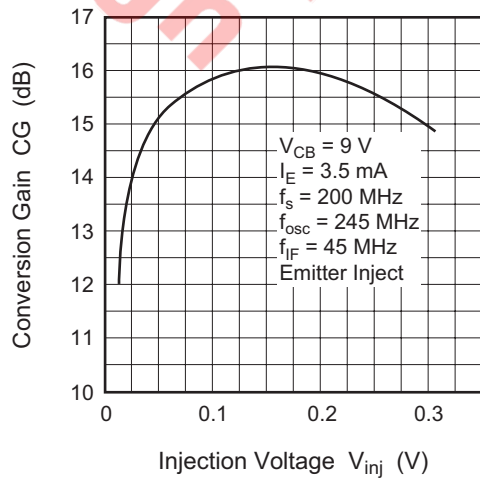
Reverse Transfer Admittance vs. Frequency

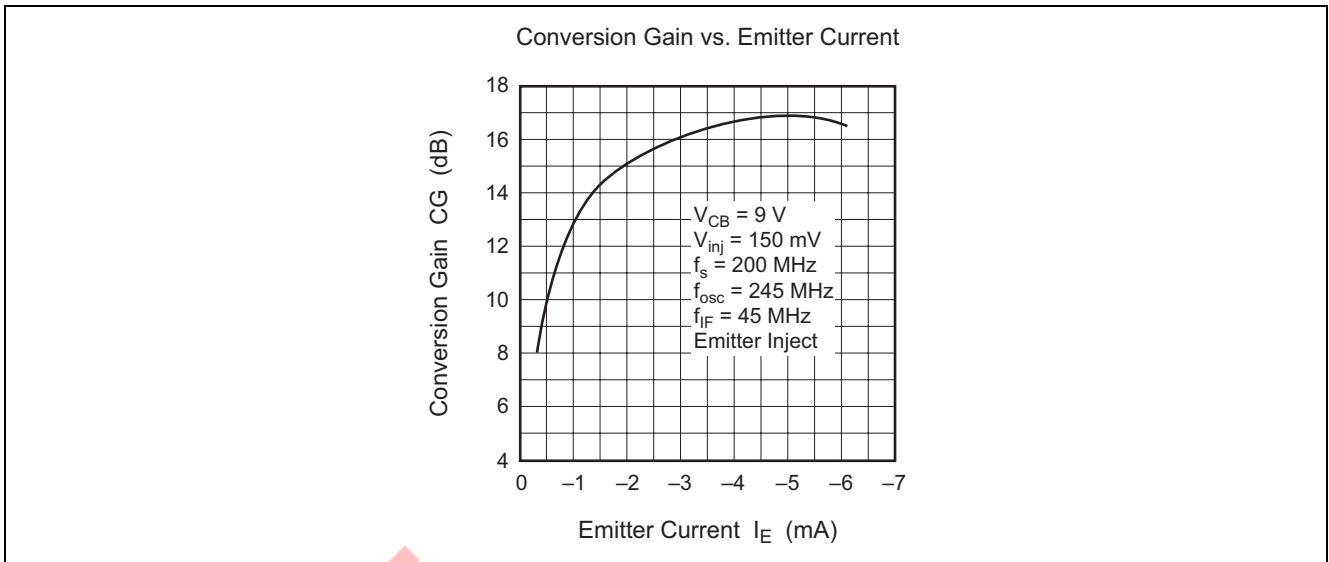


Forward Transfer Admittance vs. Frequency



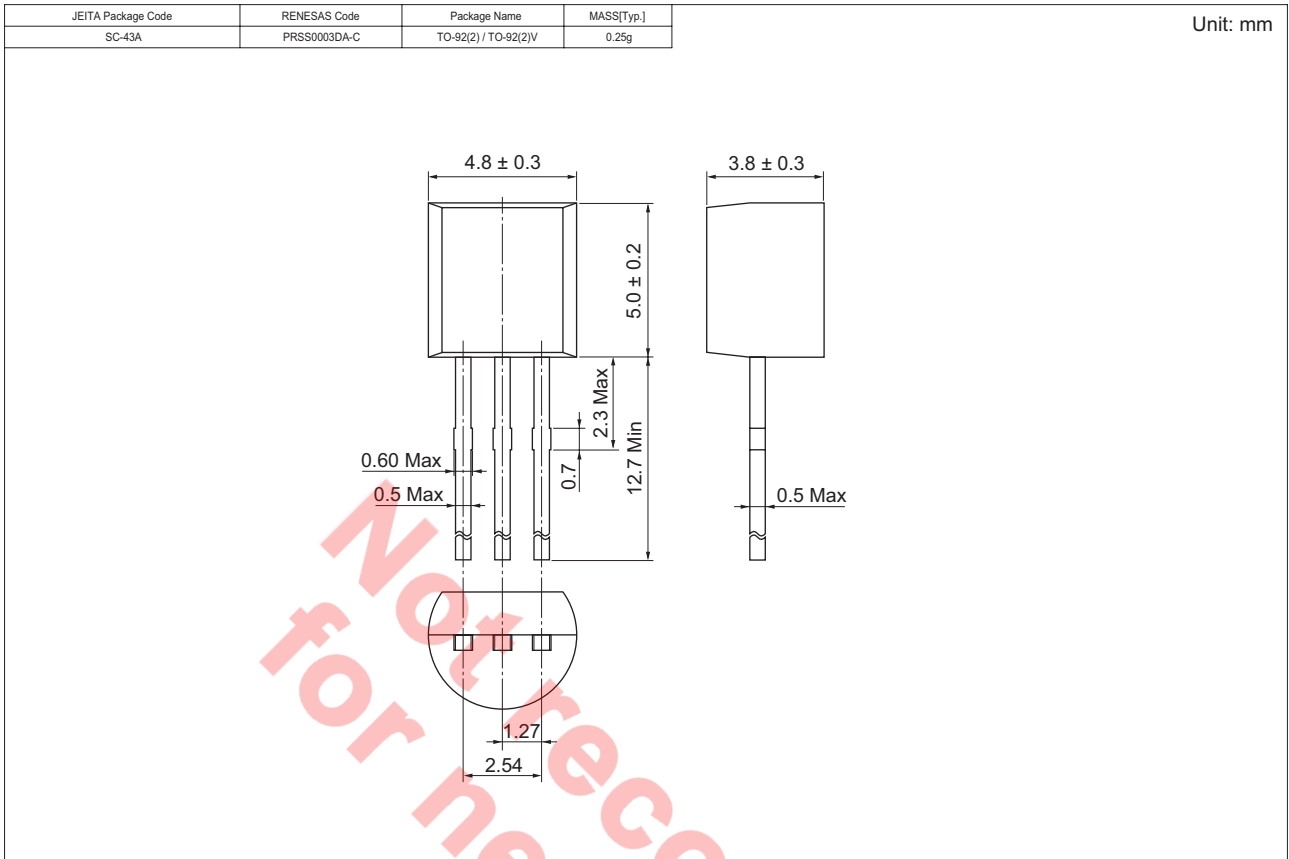
Conversion Gain vs. Local Oscillating Injection Voltage





Not recommend
for new design

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SC1906TZ-E	2500	Hold Box, Radial Taping

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