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	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

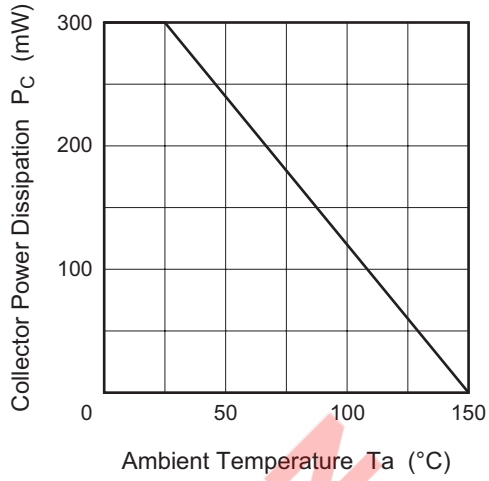
Electrical Characteristics

(Ta = 25°C)

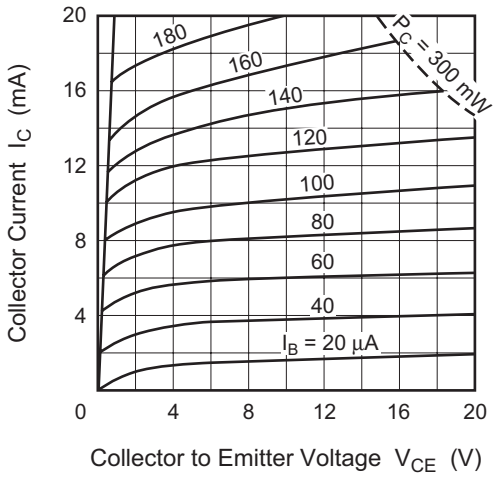
Item	Symbol	Min	Typ	Max	Unit	Test conditions	
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	I_C = 10 µA, I_E = 0	
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	19	—	—	V	I_C = 3 mA, R_{BE} = ∞	
Emitter to base breakdown voltage	$V_{(BR)EBO}$	2	—	—	V	I_E = 10 µA, I_C = 0	
Collector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

Main Characteristics

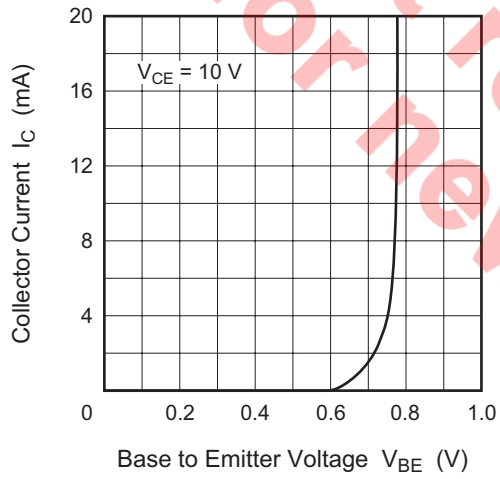
Maximum Collector Dissipation Curve



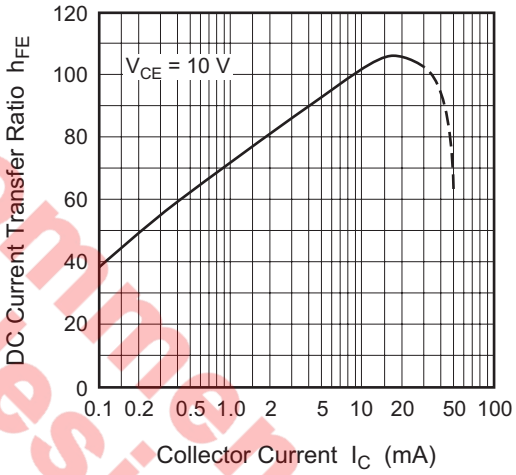
Typical Output Characteristics



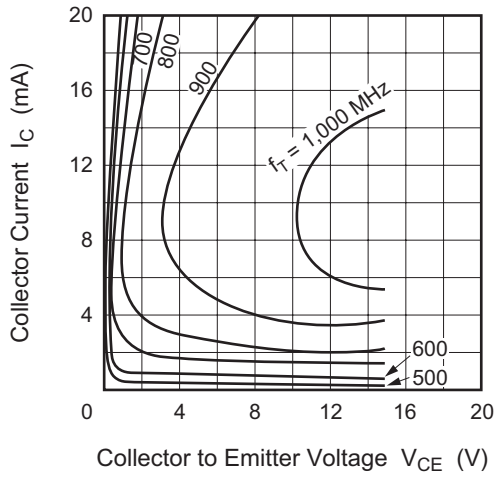
Typical Transfer Characteristics



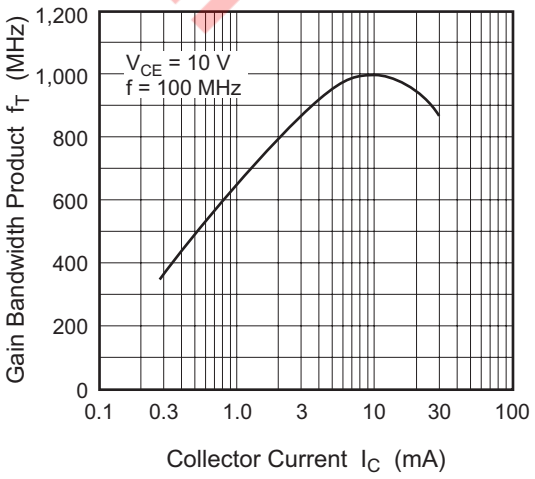
DC Current Transfer Ratio vs. Collector Current



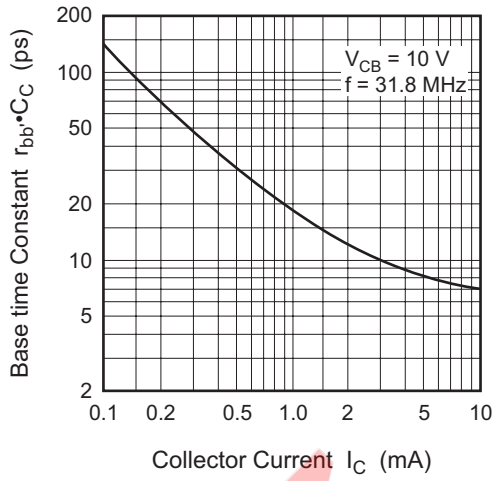
Gain Bandwidth Product Curve



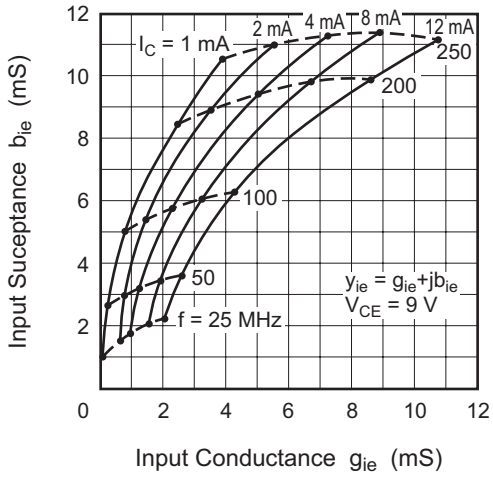
Gain Bandwidth Product vs. Collector Current



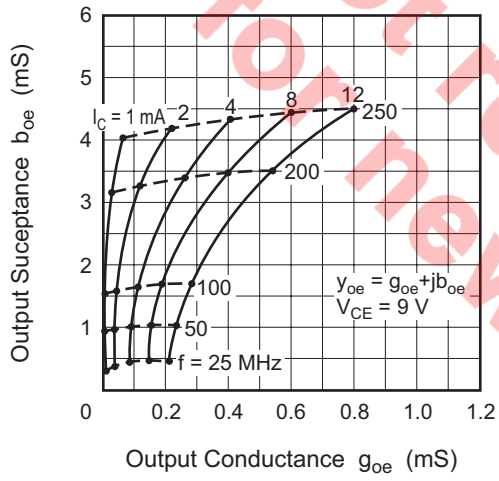
Base Time Constant vs. Collector Currnt



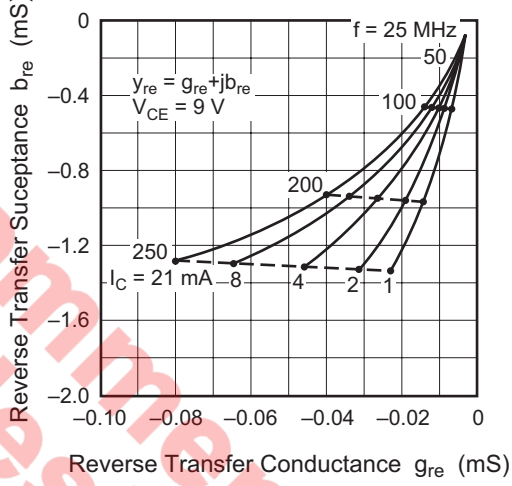
Input Admittance vs. Frequency



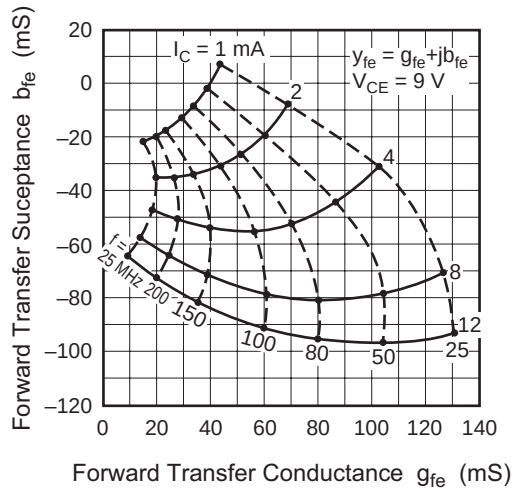
Output Admittance vs. Frequency



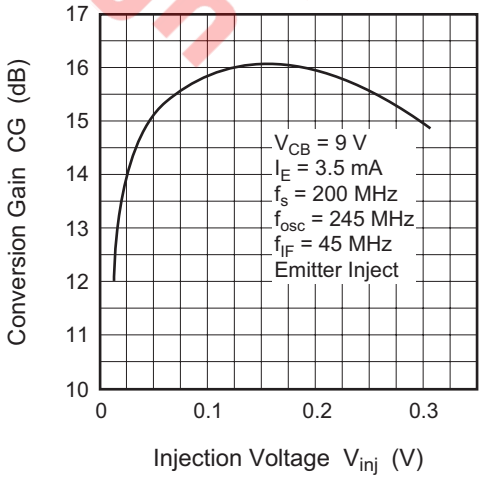
Reverse Transfer Admittance vs. Frequency



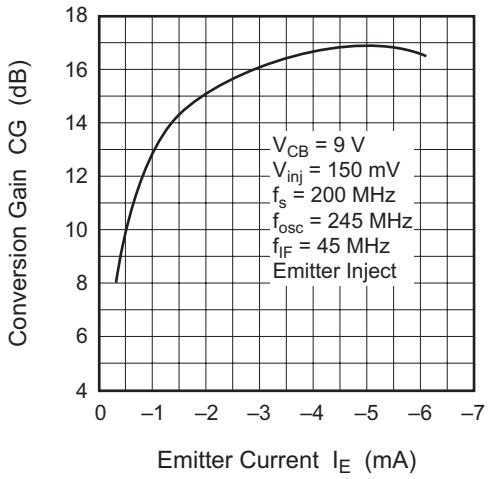
Forward Transfer Admittance vs. Frequency



Conversion Gain vs. Local Oscillating Injection Voltage



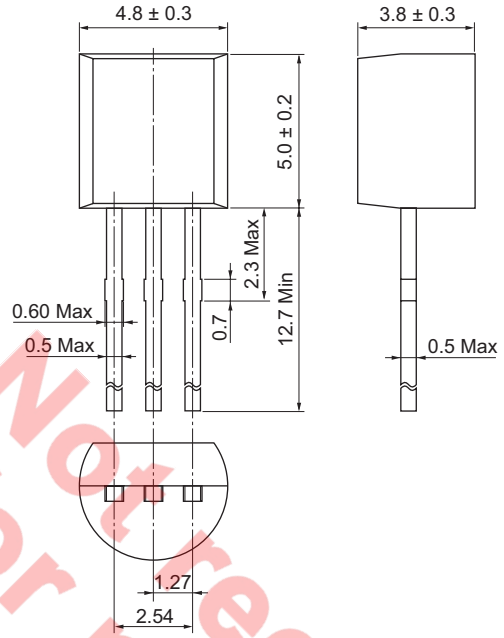
Conversion Gain vs. Emitter Current



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-43A	PRSS0003DA-C	TO-92(2) / TO-92(2)V	0.25g

Unit: mm



Ordering Information

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

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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