To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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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2SC2545, 2SC2546, 2SC2547

Silicon NPN Epitaxial

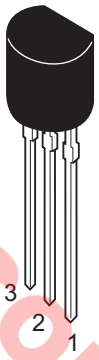
REJ03G0699-0300
(Previous ADE-208-1067A)
Rev.3.00
Aug.10.2005

Application

Low frequency low noise amplifier

Outline

RENESAS Package code: PRSS0003DA-A
(Package name: TO-92 (1))



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	2SC2545	2SC2546	2SC2547	Unit
Collector to base voltage	V_{CBO}	60	90	120	V
Collector to emitter voltage	V_{CEO}	60	90	120	V
Emitter to base voltage	V_{EBO}	5	5	5	V
Collector current	I_C	100	100	100	mA
Emitter current	I_E	–100	–100	–100	mA
Collector power dissipation	P_C	400	400	400	mW
Junction temperature	Tj	150	150	150	°C
Storage temperature	Tstg	–55 to +150	–55 to +150	–55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

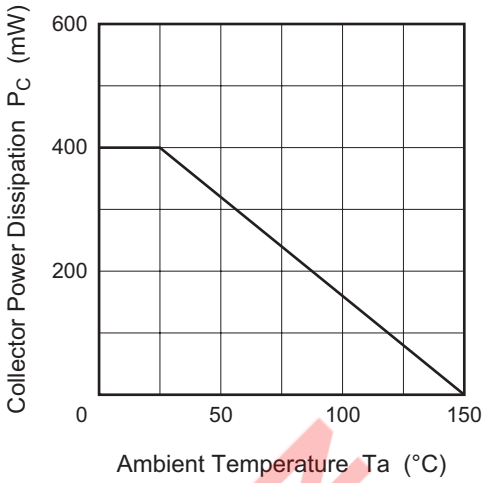
Item	Symbol	2SC2545			2SC2546			2SC2547			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	90	—	—	120	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	90	—	—	120	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	5	—	—	5	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.1	—	—	0.1	—	—	0.1	µA	V_{CB} = 50 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	0.1	—	—	0.1	—	—	0.1	µA	V_{EB} = 2 V, I_C = 0
DC current transfer ratio	h_{FE}*[1]	250	—	1200	600	—	1200	250	—	800		V_{CE} = 12 V, I_C = 2 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.2	—	—	0.2	—	—	0.2	V	I_C = 10 mA, I_B = 1 mA
Base to emitter voltage	V_{BE}	—	0.6	—	—	0.6	—	—	0.6	—	V	V_{CE} = 12 V, I_C = 2 mA
Gain bandwidth product	f_T	—	90	—	—	90	—	—	90	—	MHz	V_{CE} = 12 V, I_C = 2 mA
Collector output capacitance	Cob	—	3.0	—	—	3.0	—	—	3.0	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Noise voltage referred input	e_n	—	0.5	—	—	0.5	—	—	0.5	—	nV/$\sqrt{Hz}$	V_{CE} = 6V, I_C = 10 mA, f = 1 kHz, R_g = 0, Δf = 1Hz

Note: 1. The 2SC2545 and 2SC2547 are grouped by h_{FE} as follows.

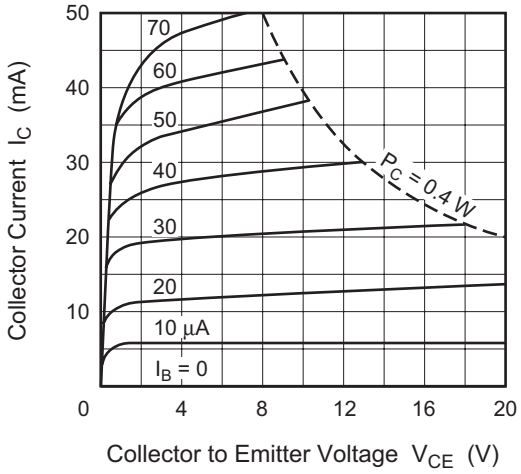
	D	E	F
2SC2545	—	400 to 800	600 to 1200
2SC2547	250 to 500	400 to 800	—

Main Characteristics

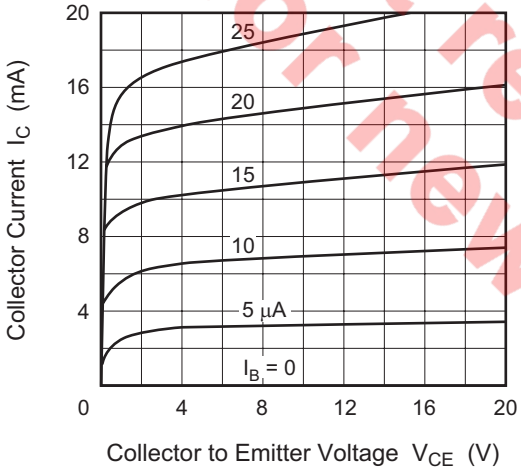
Maximum Collector Dissipation Curve



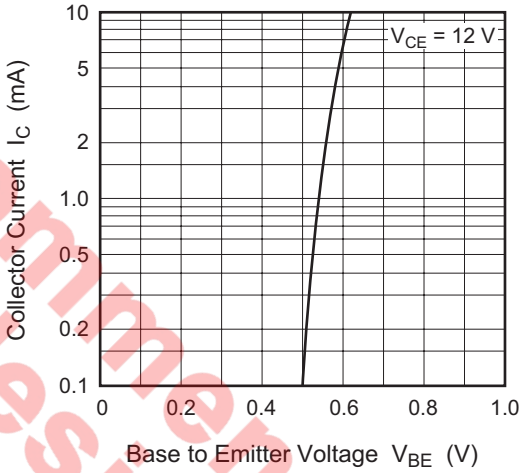
Typical Output Characteristics



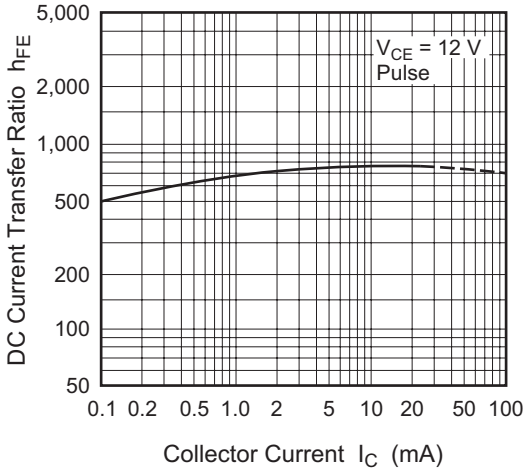
Typical Output Characteristics



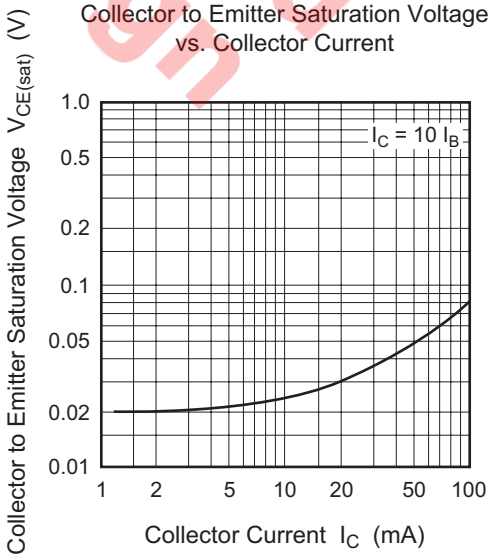
Typical Transfer Characteristics



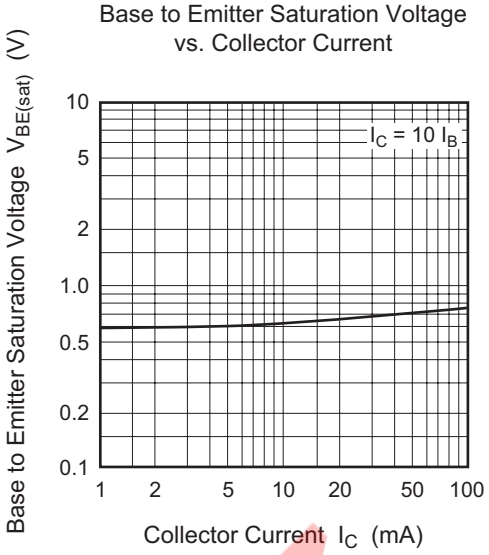
DC Current Transfer Ratio vs. Collector Current



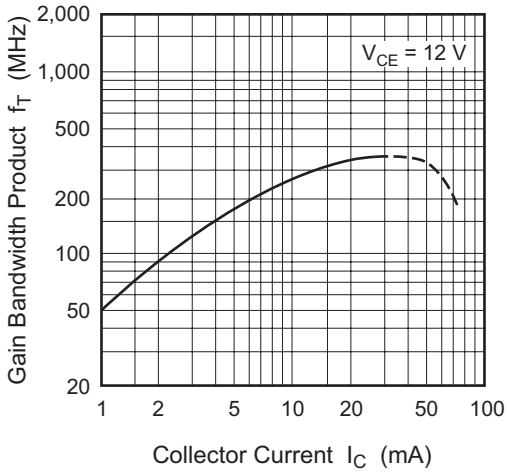
Collector to Emitter Saturation Voltage vs. Collector Current



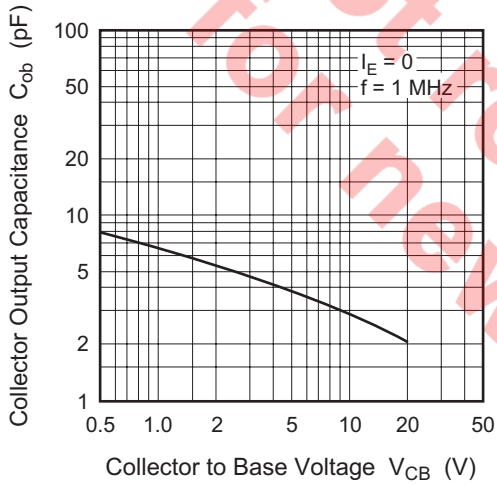
Base to Emitter Saturation Voltage vs. Collector Current



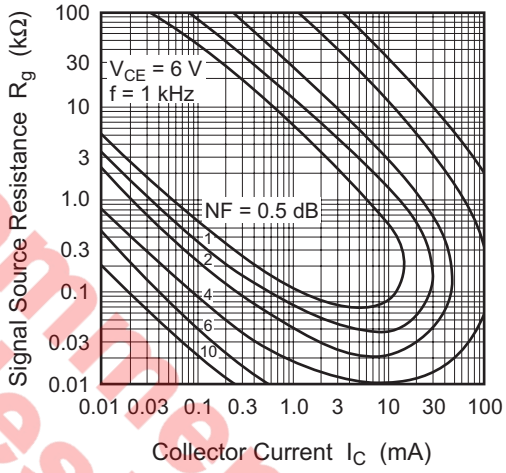
Gain Bandwidth Product vs. Collector Current



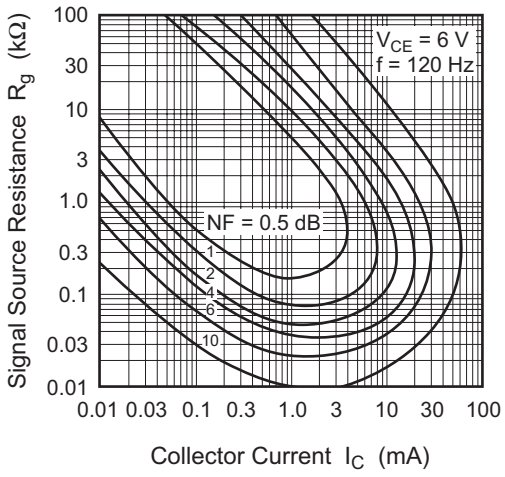
Collector Output Capacitance vs. Collector to Base Voltage



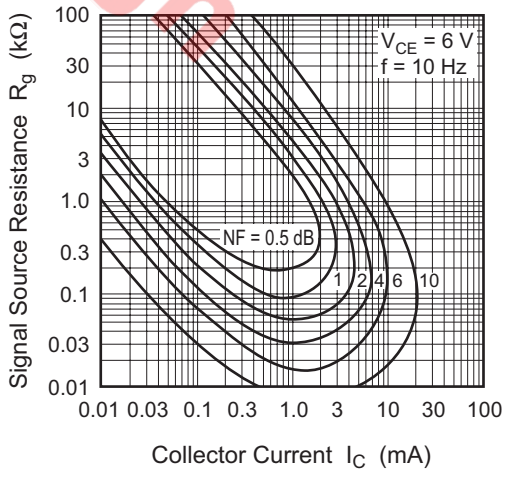
Contours of Constant Noise Figure



Contours of Constant Noise Figure



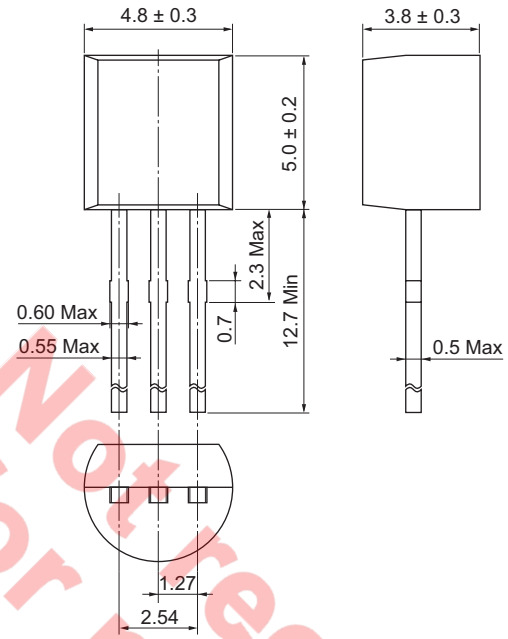
Contours of Constant Noise Figure



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-43A	PRSS0003DA-A	TO-92(1) / TO-92(1)V	0.25g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
2SC2545ETZ-E 2SC2545FTZ-E 2SC2546FTZ-E 2SC2547ETZ-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.

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

RENESAS SALES OFFICES

http://www.renesas.com

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Colophon .3.0