

To our customers,

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## Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
for new design

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# 2SC2545, 2SC2546, 2SC2547

Silicon NPN Epitaxial

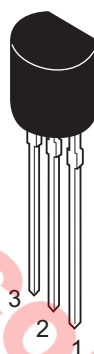
REJ03G0699-0300  
 (Previous ADE-208-1067A)  
 Rev.3.00  
 Aug.10.2005

## 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	$T_j$	150	150	150	°C
Storage temperature	$T_{stg}$	-55 to +150	-55 to +150	-55 to +150	°C

## Electrical Characteristics

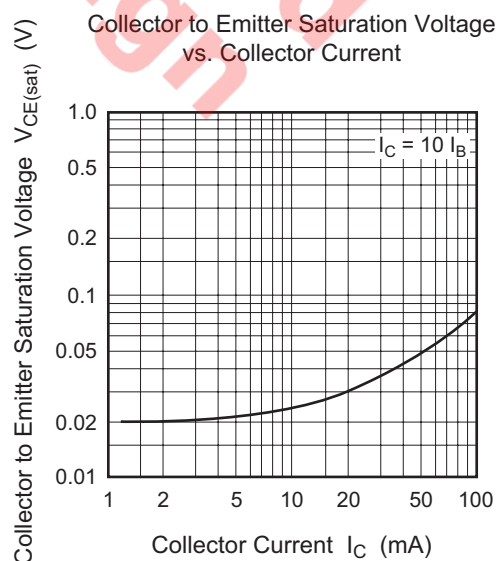
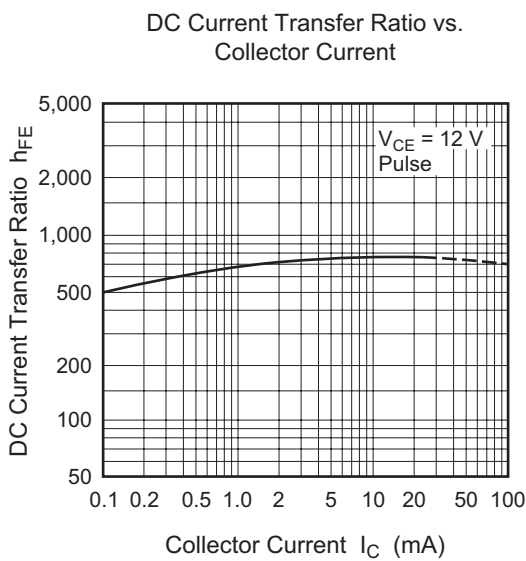
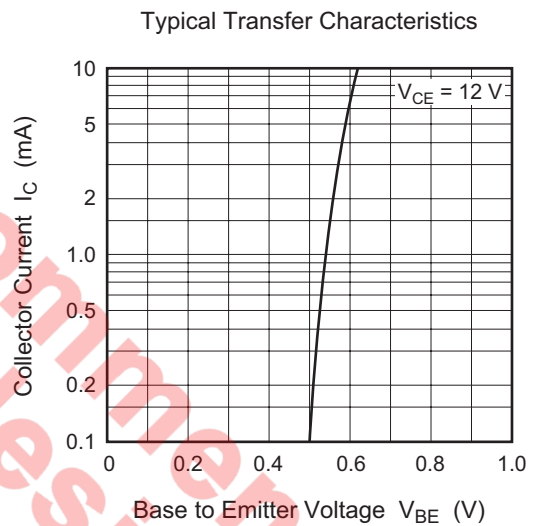
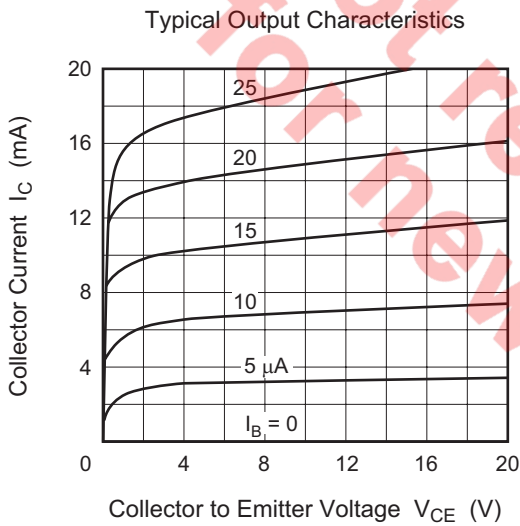
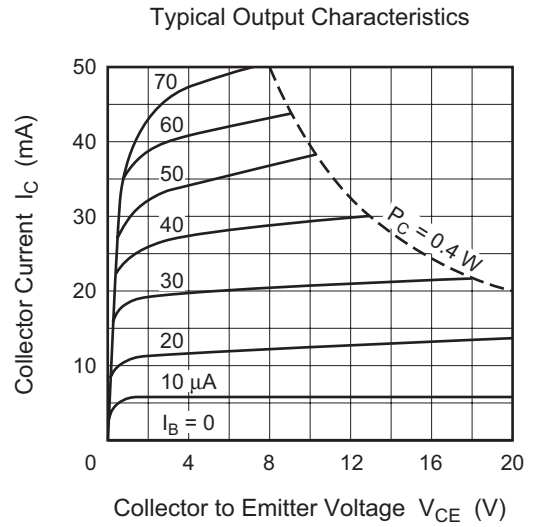
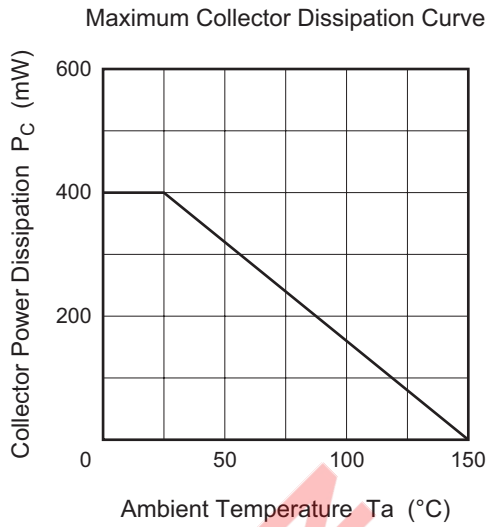
(Ta = 25°C)

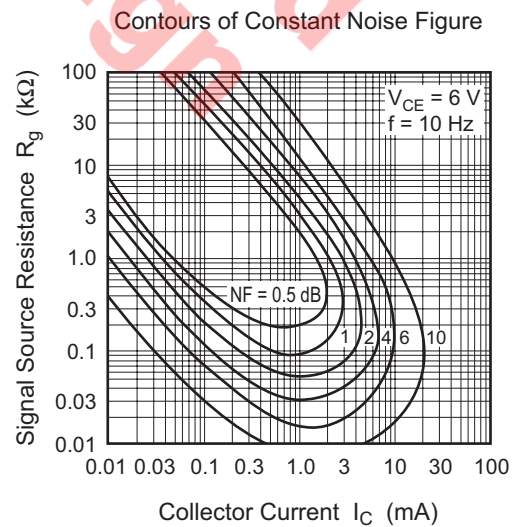
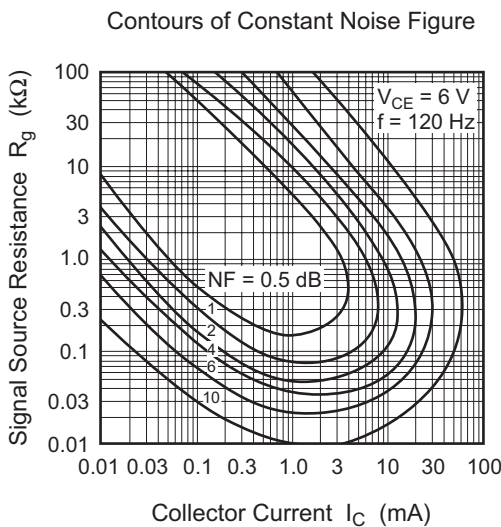
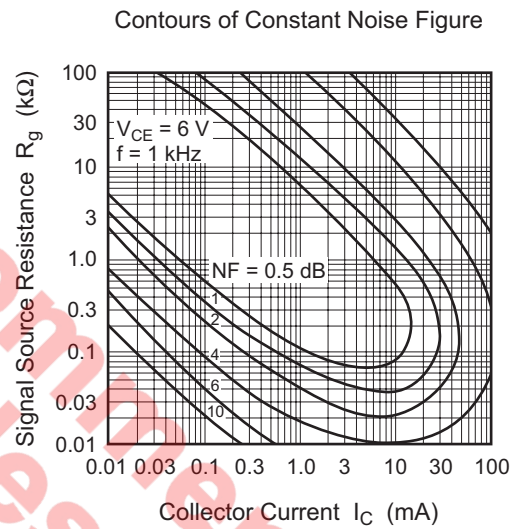
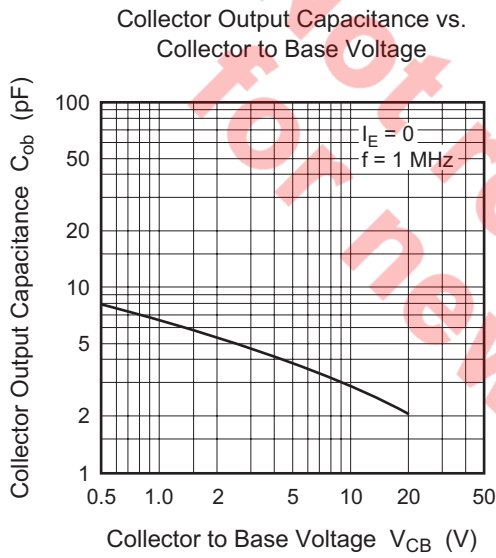
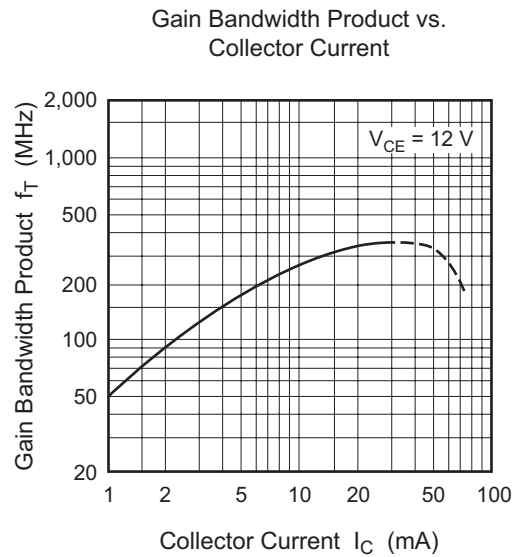
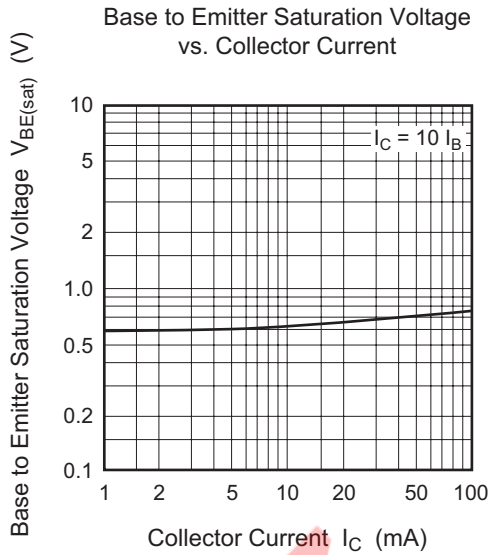
Item	Symbol	2SC2545			2SC2546			2SC2547			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	60	—	—	90	—	—	120	—	—	V	$I_C = 1 \text{ mA},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

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

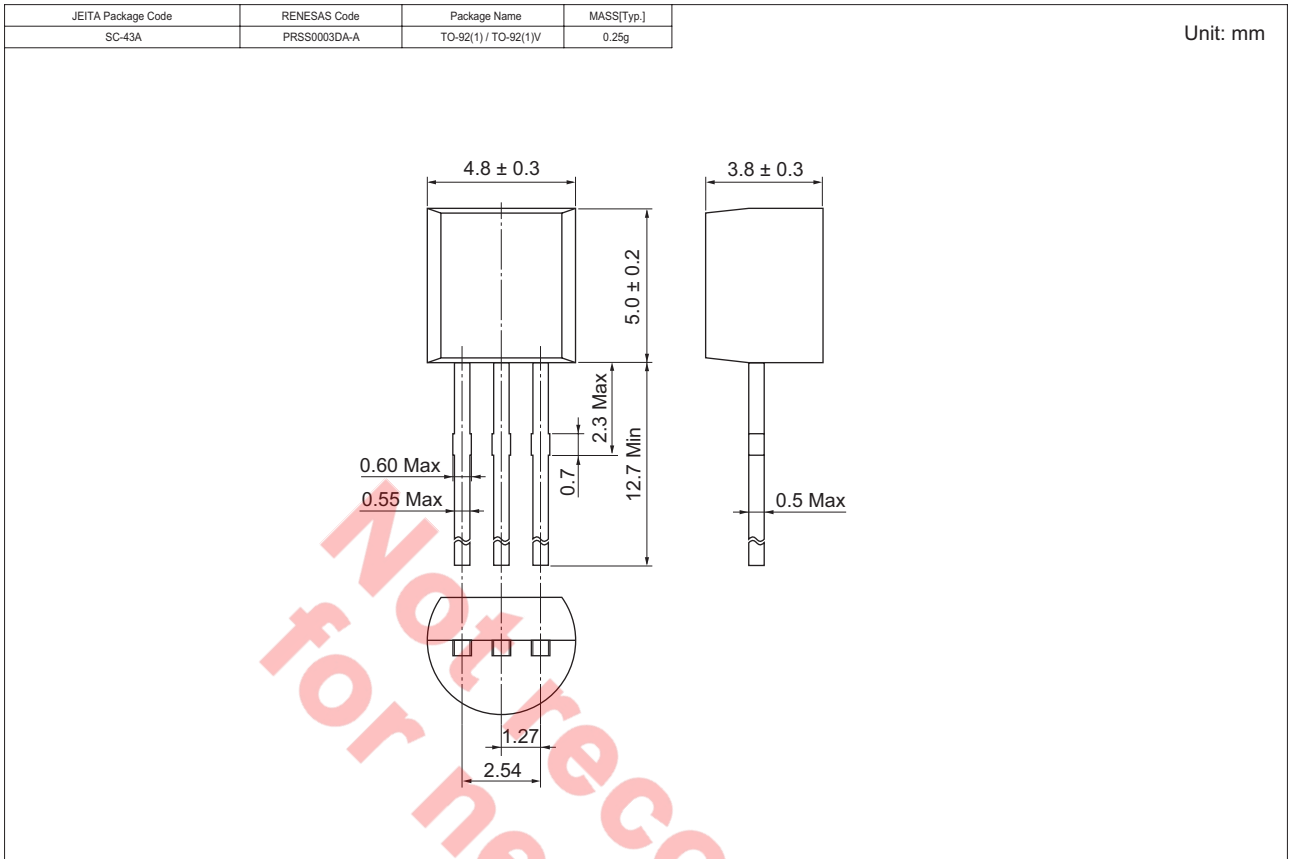
	D	E	F
2SC2545	—	400 to 800	600 to 1200
2SC2547	250 to 500	400 to 800	—

Main Characteristics





### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SC2545ETZ-E	2500	Hold Box, Radial Taping
2SC2545FTZ-E		
2SC2546FTZ-E		
2SC2547ETZ-E		

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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