

# 2SA1084, 2SA1085

Silicon PNP Epitaxial

REJ03G0635-0300  
 (Previous ADE-208-1007A)  
 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	2SA1084	2SA1085	Unit
Collector to base voltage	$V_{CBO}$	-90	-120	V
Collector to emitter voltage	$V_{CEO}$	-90	-120	V
Emitter to base voltage	$V_{EBO}$	-5	-5	V
Collector current	$I_C$	-100	-100	mA
Emitter current	$I_E$	100	100	mA
Collector power dissipation	$P_C$	400	400	mW
Junction temperature	$T_j$	150	150	°C
Storage temperature	$T_{stg}$	-55 to +150	-55 to +150	°C

## Electrical Characteristics

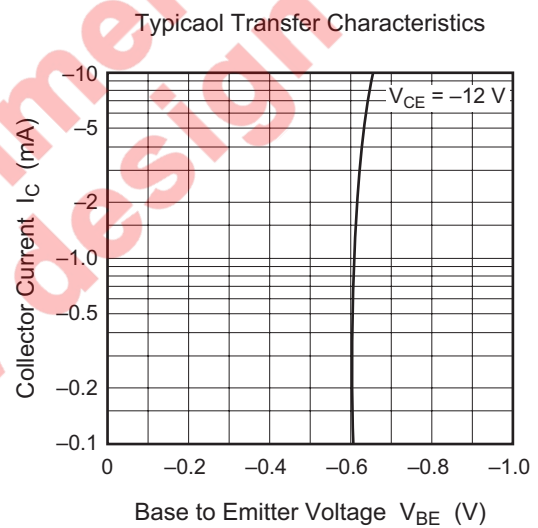
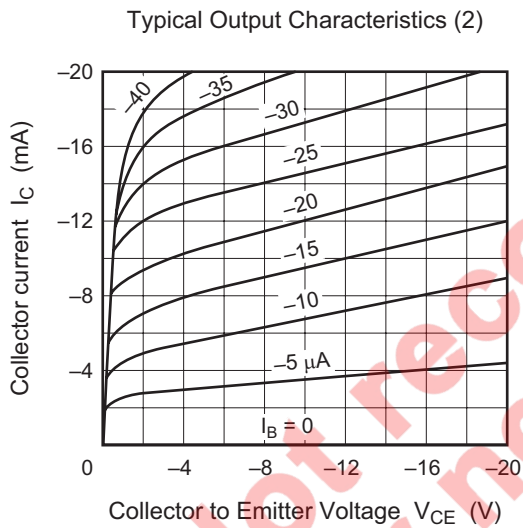
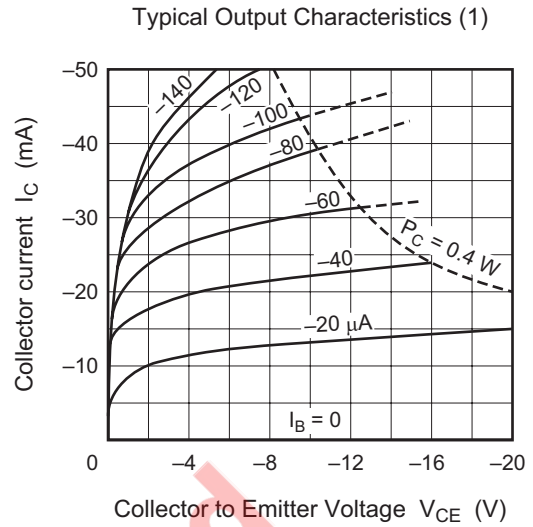
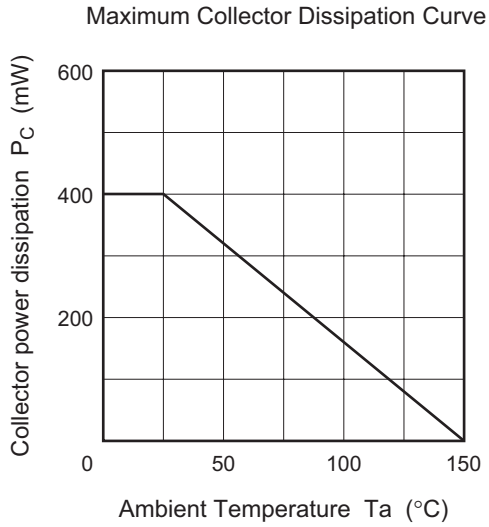
(Ta = 25°C)

Item	Symbol	2SA1084			2SA1085			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	$V_{(BR)CBO}$	-90	—	—	-120	—	—	V	$I_C = -10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-90	—	—	-120	—	—	V	$I_C = -1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	-5	—	—	V	$I_E = -10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-0.1	—	—	-0.1	$\mu A$	$V_{CB} = -50 \text{ V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	-0.1	—	—	-0.1	$\mu A$	$V_{EB} = -2 \text{ V}, I_C = 0$
DC current transfer ratio	$h_{FE}^{*1}$	250	—	800	250	—	800		$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-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	—	V	$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$
Gain bandwidth product	$f_T$	—	90	—	—	90	—	MHz	$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	3.5	—	—	3.5	—	pF	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$
Noise voltage referred to input	$e_n$	—	0.5	—	—	0.5	—	nV/ $\sqrt{\text{Hz}}$	$V_{CE} = -6 \text{ V}, I_C = -10 \text{ mA}, f = 1 \text{ kHz}, R_g = 0, \Delta f = 1 \text{ Hz}$

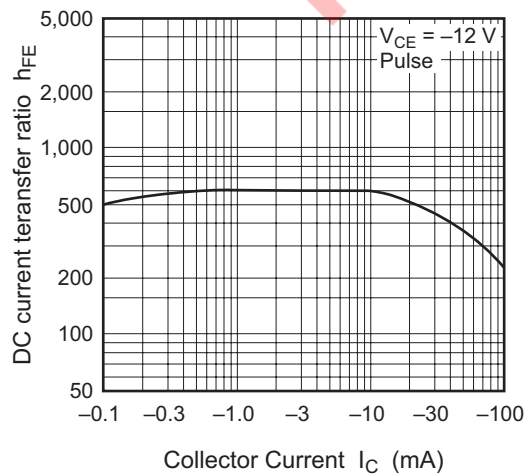
Note: 1. The 2SA1084 and 2SA1085 are grouped by  $h_{FE}$  as follows.

D	E
250 to 500	400 to 800

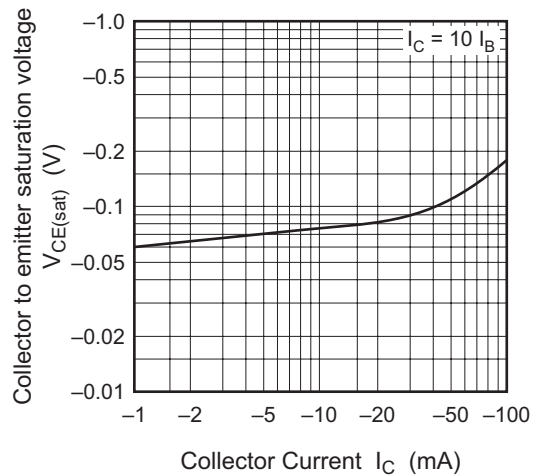
Main Characteristics

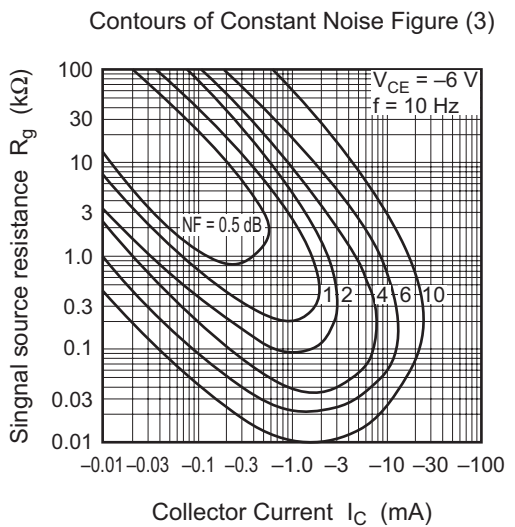
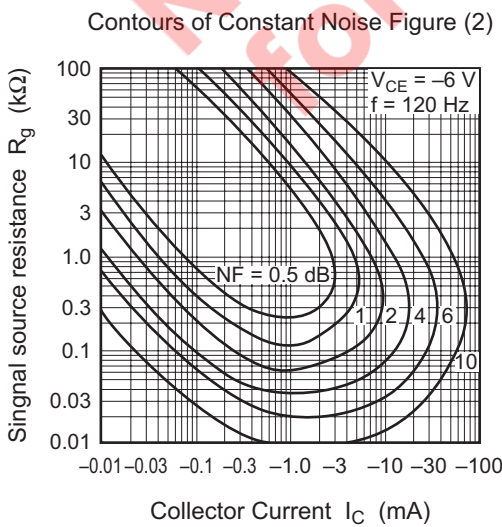
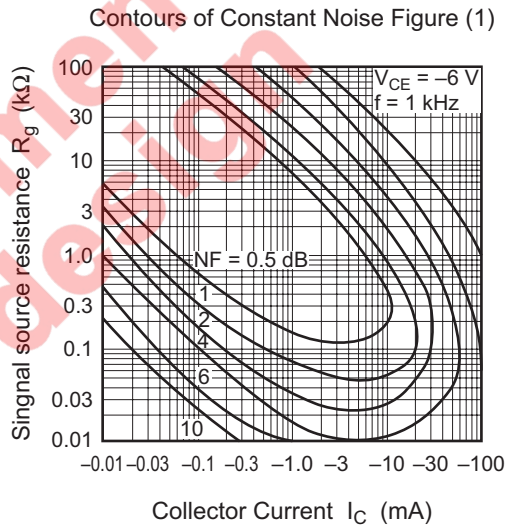
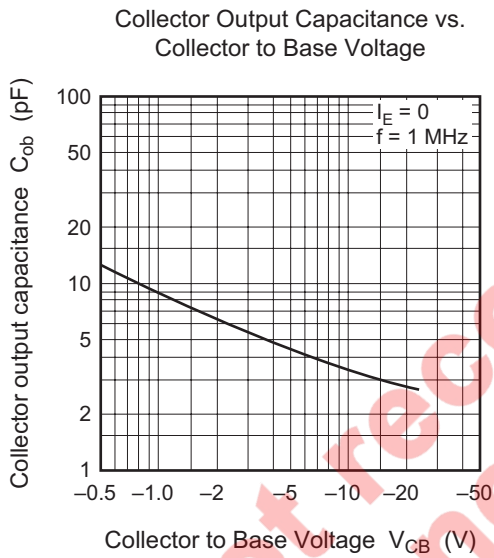
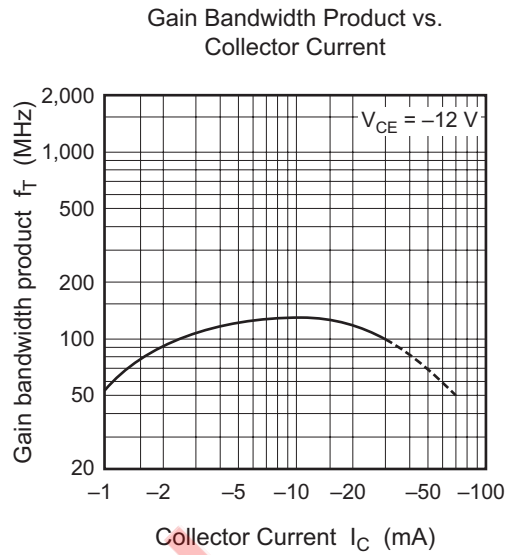
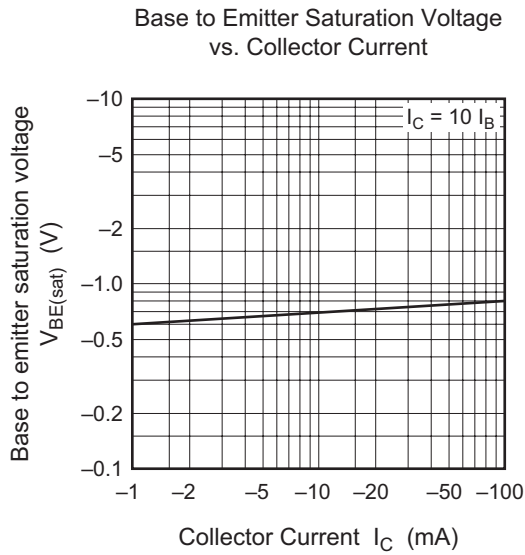


DC Current Transfer Ratio vs. Collector Current

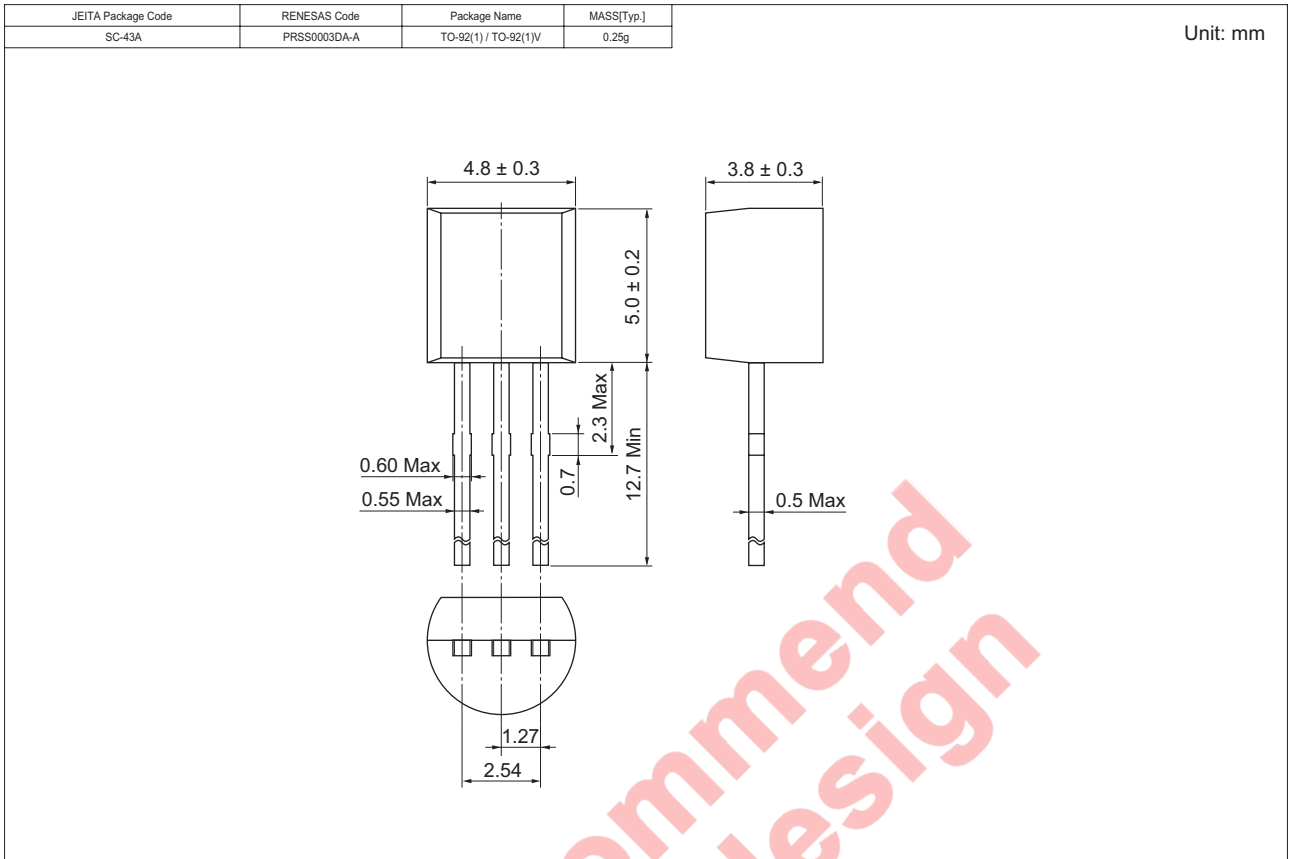


Collector to Emitter Saturation Voltage vs. Collector Current





### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SA1084ETZ-E 2SA1085DTZ-E 2SA1085ETZ-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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