



# 2SC5049

Silicon NPN Epitaxial

REJ03G0740-0300  
(Previous ADE-208-1129A)  
Rev.3.00  
Aug.10.2005

## Application

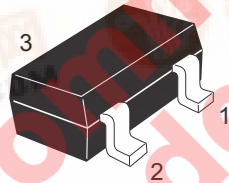
VHF / UHF wide band amplifier

## Features

- High gain bandwidth product  
 $f_T = 10 \text{ GHz Typ}$
- High gain, low noise figure  
 $PG = 15.0 \text{ dB Typ, NF} = 1.2 \text{ dB Typ at } f = 900 \text{ MHz}$

## Outline

RENESAS Package code: PLSP0003ZB-A  
(Package name: MPAK)



1. Emitter
2. Base
3. Collector

Note: Marking is "YA-".

Attention: This device is very sensitive to electro static discharge.  
It is recommended to adopt appropriate cautions when handling this transistor.

## Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	15	V
Collector to emitter voltage	$V_{CEO}$	8	V
Emitter to base voltage	$V_{EBO}$	1.5	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



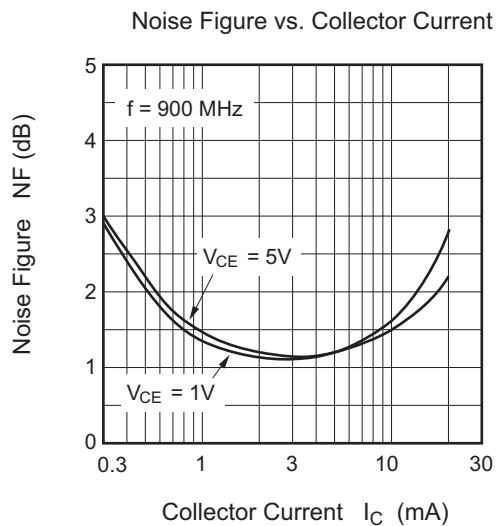
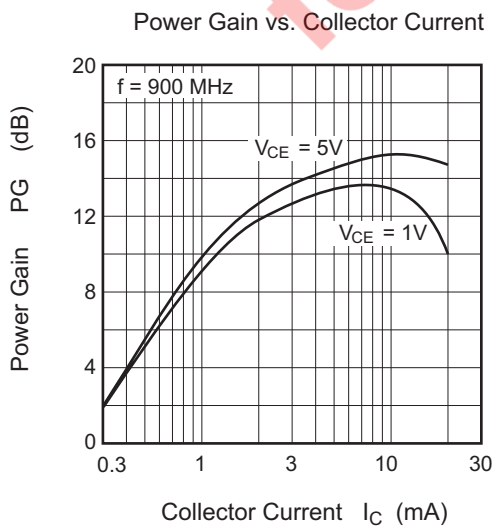
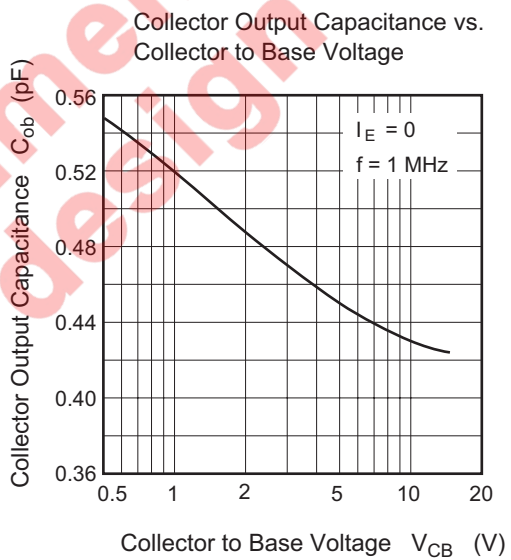
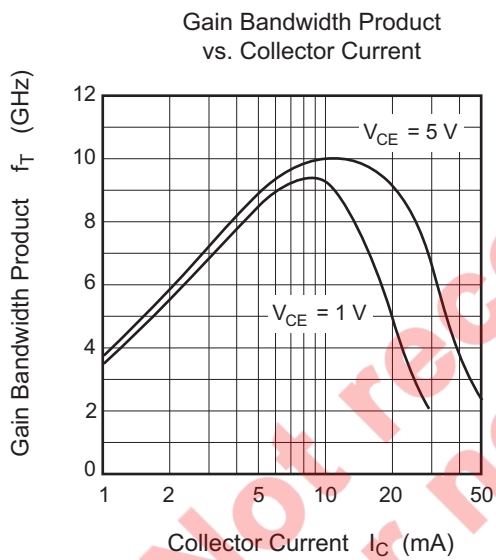
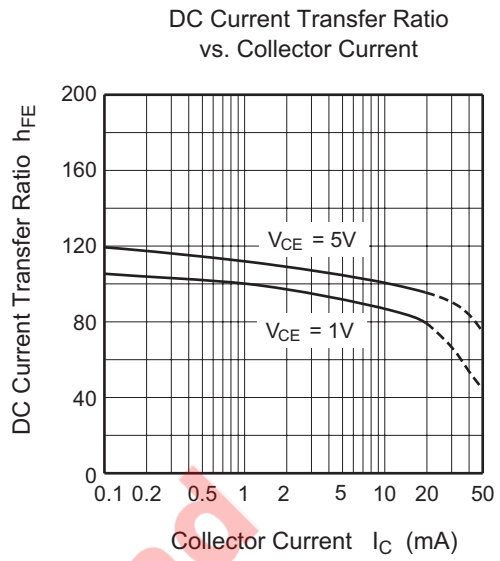
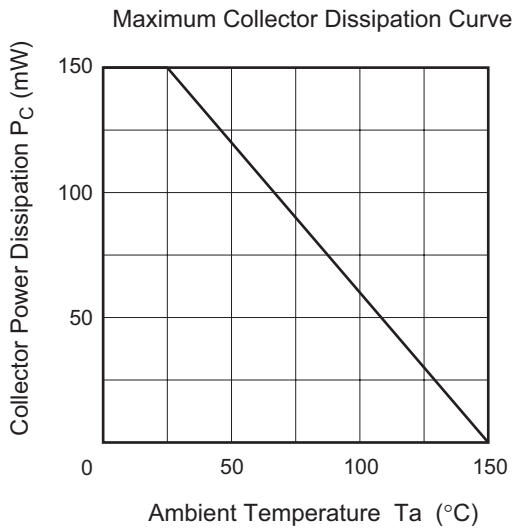
## Electrical Characteristics

(Ta = 25°C)

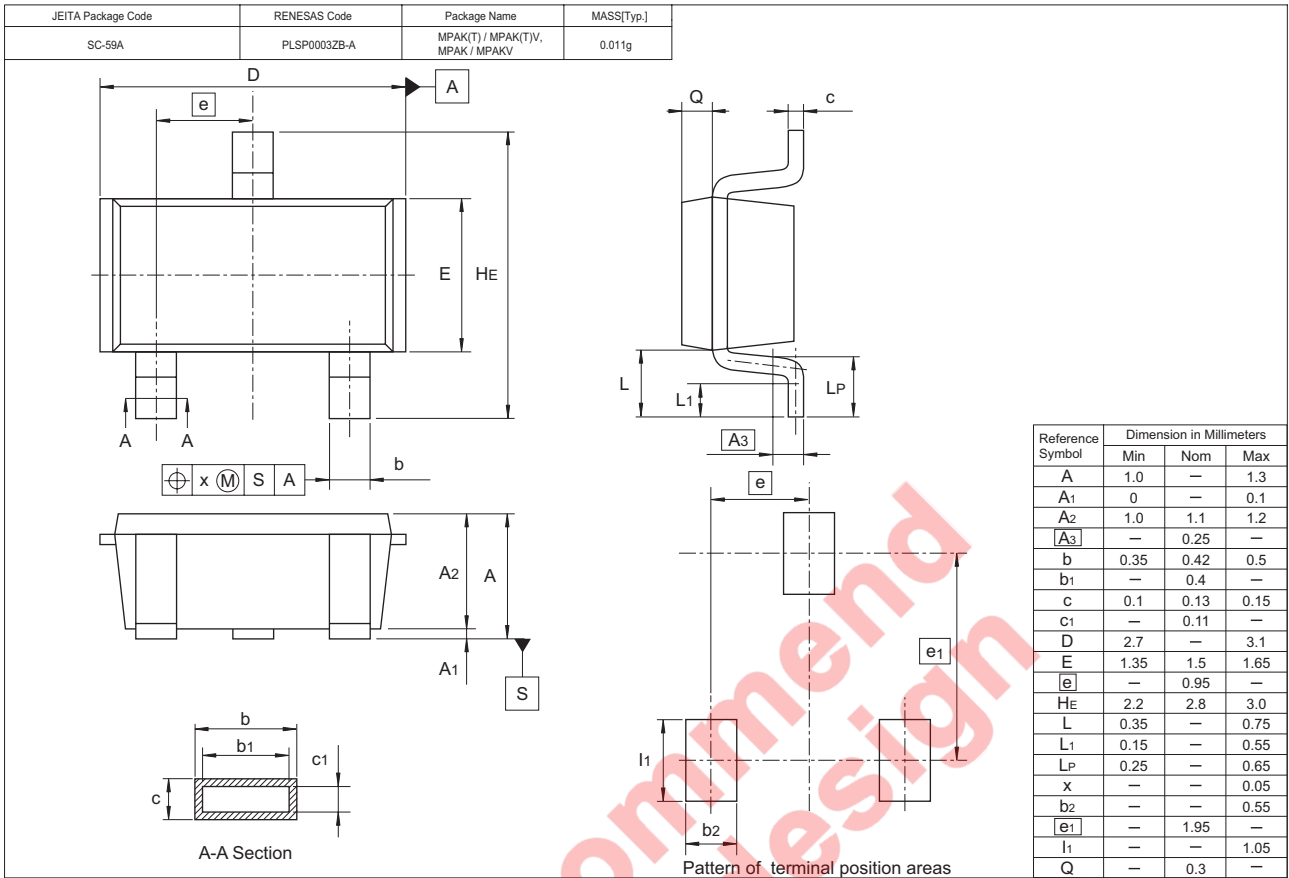
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu\text{A}$	$V_{CB} = 15\text{ V}, I_E = 0$
	$I_{CEO}$	—	—	1	mA	$V_{CE} = 8\text{ V}, R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu\text{A}$	$V_{EB} = 1.5\text{ V}, I_C = 0$
DC current transfer ratio	$h_{FE}$	50	120	250		$V_{CE} = 5\text{ V}, I_C = 20\text{ mA}$
Collector output capacitance	$C_{ob}$	—	0.45	0.8	pF	$V_{CB} = 5\text{ V}, I_E = 0, f = 1\text{ MHz}$
Gain bandwidth product	$f_T$	7.0	10.0	—	GHz	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$
Power gain	PG	12.0	15.0	—	dB	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA},$ $f = 900\text{ MHz}$
Noise figure	NF	—	1.2	2.5	dB	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA},$ $f = 900\text{ MHz}$

Not recommend  
for new design

Main Characteristics



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SC5049YA-TL-E	3000	φ 178 mm Reel, 8 mm Emboss 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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