

## 2SC5081

Silicon NPN Epitaxial

REJ03G0743-0300  
 (Previous ADE-208-1133A)  
 Rev.3.00  
 Aug.10.2005

### Application

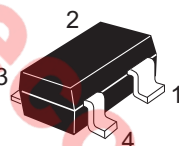
VHF / UHF wide band amplifier

### Features

- High gain bandwidth product  
 $f_T = 13.5$  GHz Typ
- High gain, low noise figure  
 $PG = 18$  dB Typ,  $NF = 1.1$  dB Typ at  $f = 900$  MHz

### Outline

RENESAS Package code: PTSP0004ZA-A  
 (Package name: CMPAK-4)



1. Collector
2. Emitter
3. Base
4. Emitter

Note: Marking is "ZD-".

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	$I_C$	50	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

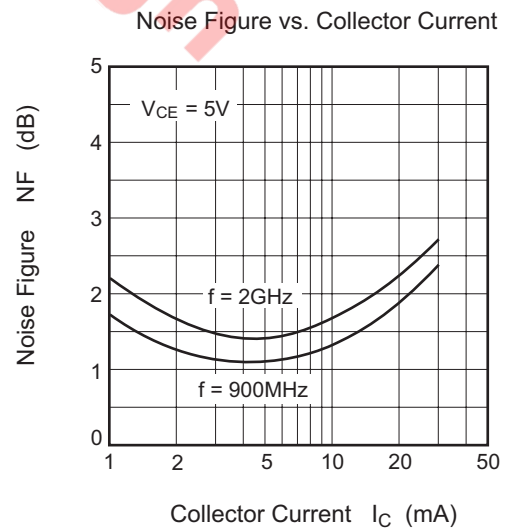
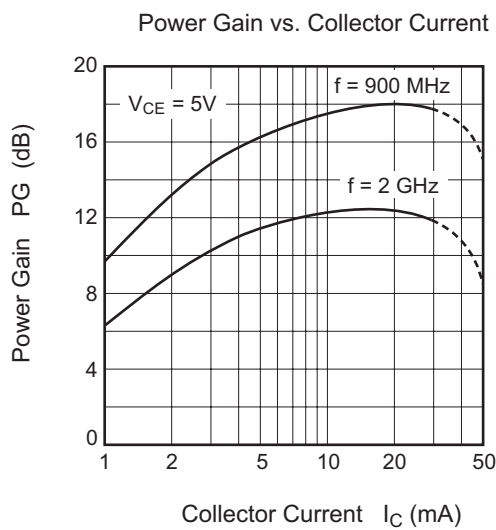
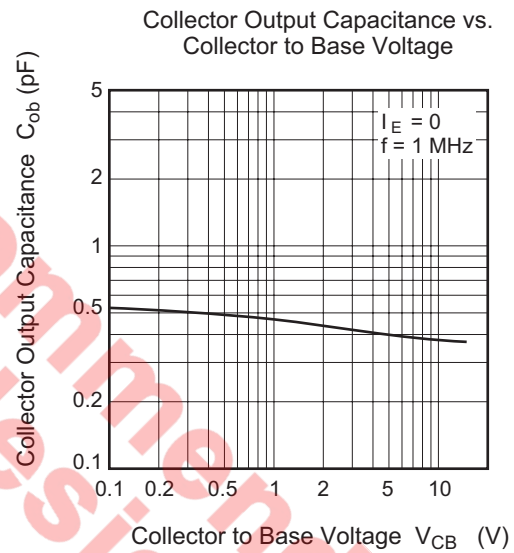
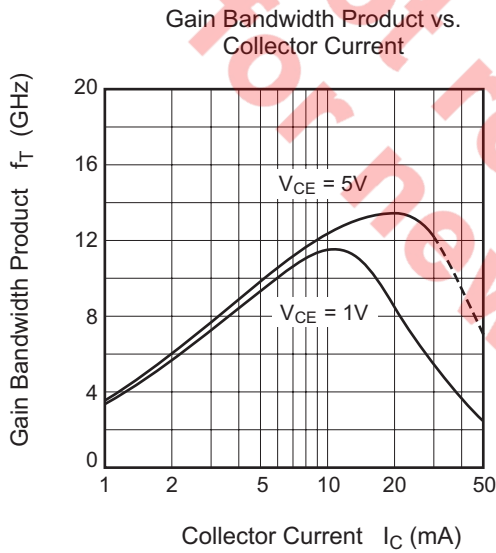
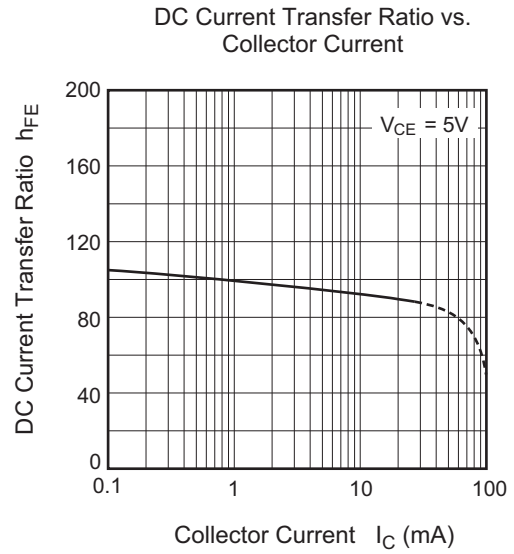
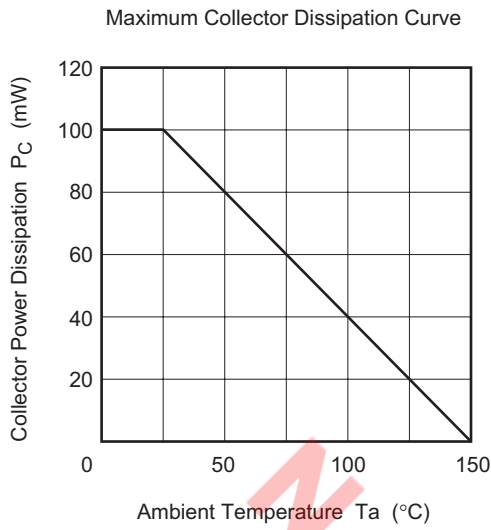
## Electrical Characteristics

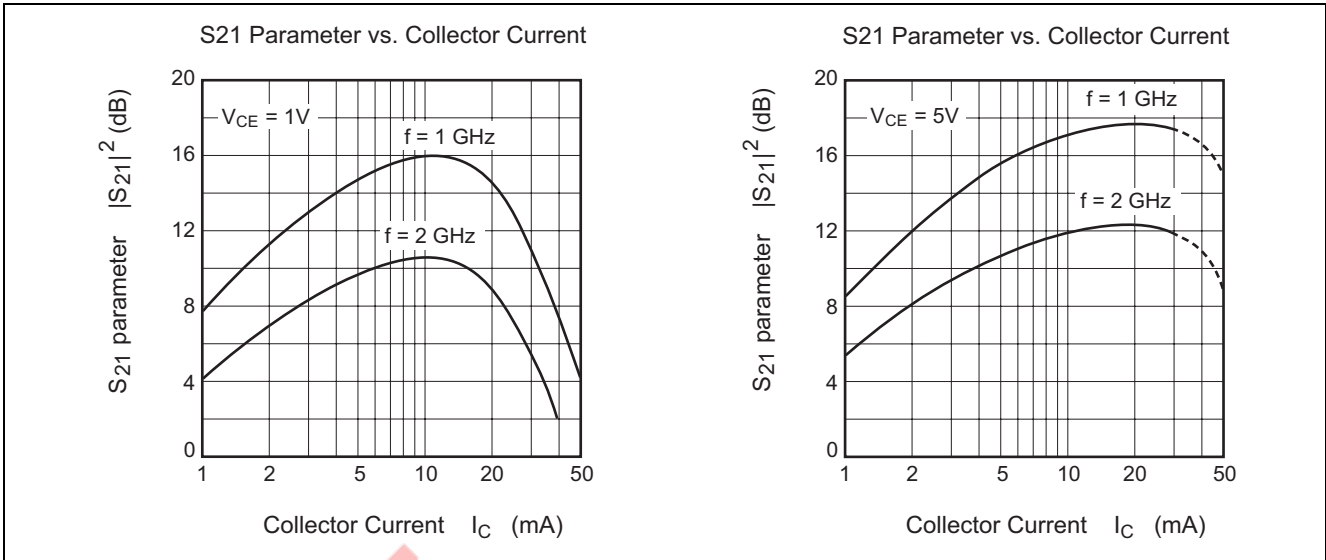
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu A$	$V_{CB} = 12 V, I_E = 0$
	$I_{CEO}$	—	—	1	mA	$V_{CE} = 8 V, R_{BE} = \infty$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 1.5 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	50	90	160		$V_{CE} = 5 V, I_C = 20 mA$
Collector output capacitance	$C_{ob}$	—	0.4	0.75	pF	$V_{CB} = 5 V, I_E = 0, f = 1 MHz$
Gain bandwidth product	$f_T$	10.5	13.5	—	GHz	$V_{CE} = 5 V, I_C = 20 mA$
Power gain	PG	15	18	—	dB	$V_{CE} = 5 V, I_C = 20 mA,$ $f = 900 MHz$
Noise figure	NF	—	1.1	2.0	dB	$V_{CE} = 5 V, I_C = 5 mA,$ $f = 900 MHz$

Not recommend  
for new design

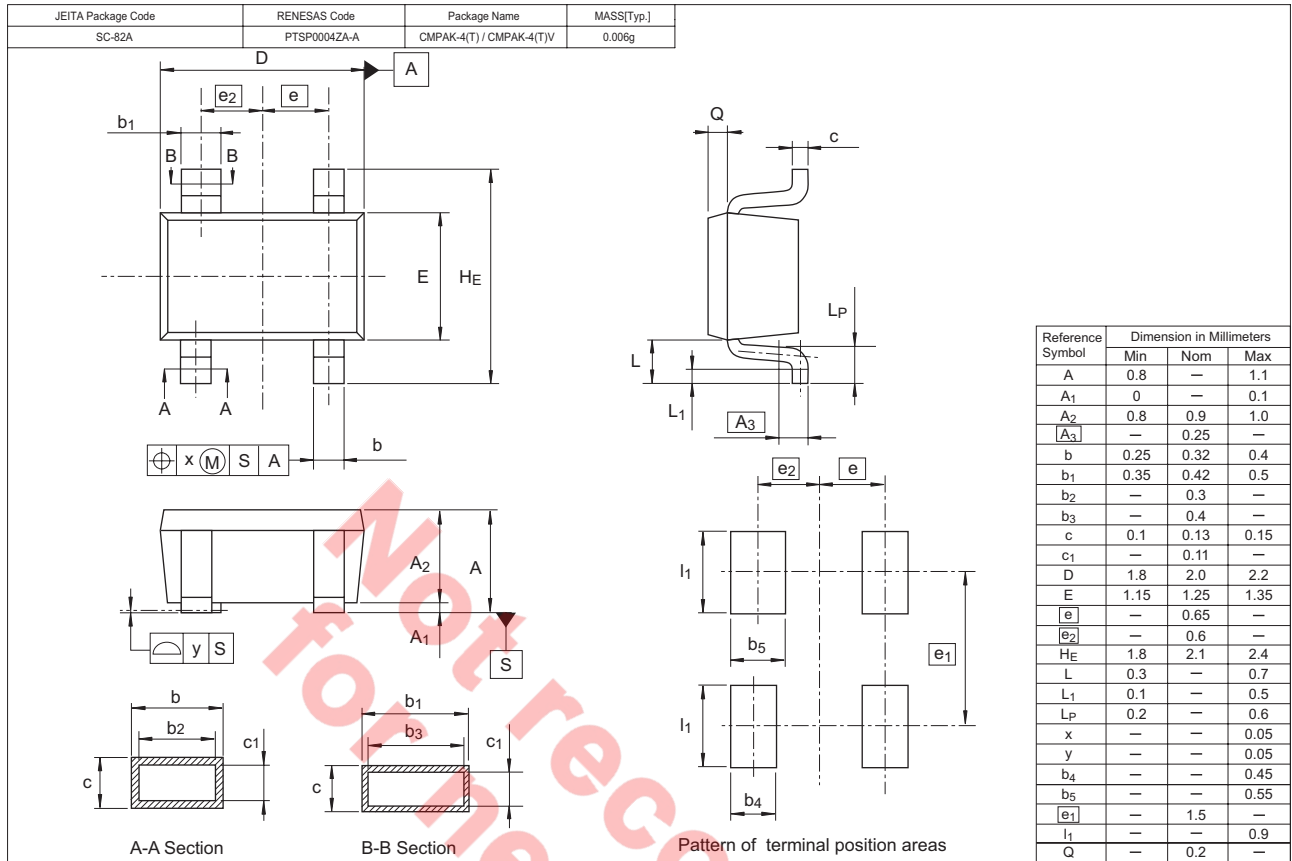
Main Characteristics





Not recommend  
 for new design

### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
2SC5081ZD-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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