2SC4591

Silicon NPN Epitaxial

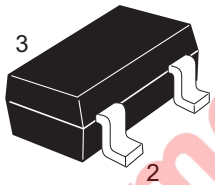
REJ03G0728-0300
(Previous ADE-208-1111A)
Rev.3.00
Aug.10.2005

Application

UHF / VHF wide band amplifier

Outline

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



1. Emitter
2. Base
3. Collector

Note: Marking is “XM–”.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	9	V
Emitter to base voltage	V_{EBO}	1.5	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

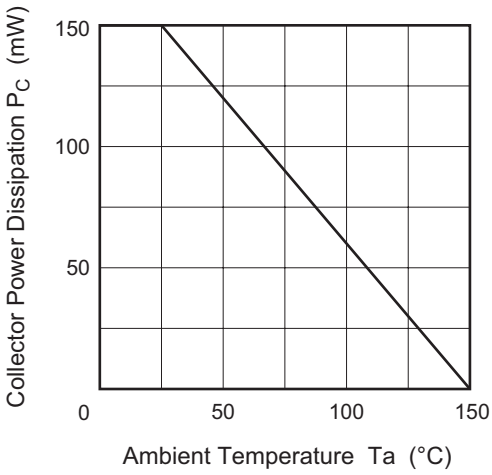
Electrical Characteristics

(Ta = 25°C)

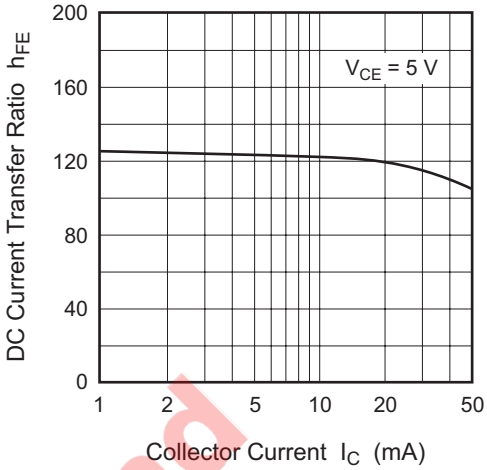
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	I_C = 10 µA, I_E = 0
Collector cutoff current	I_{CBO}	—	—	1	µA	V_{CB} = 12 V, I_E = 0
	I_{CEO}	—	—	1	mA	V_{CE} = 9 V, R_{BE} = ∞
Emitter cutoff current	I_{EBO}	—	—	10	µA	V_{EB} = 1.5 V, I_C = 0
DC current transfer ratio	h_{FE}	40	120	250	—	V_{CE} = 5 V, I_C = 20 mA
Collector output capacitance	Cob	—	0.8	1.5	pF	V_{CB} = 5 V, I_E = 0, f = 1MHz
Gain bandwidth product	f_T	6.5	9.0	—	GHz	V_{CE} = 5 V, I_C = 20 mA
Power gain	PG	9.5	12.5	—	dB	V_{CE} = 5 V, I_C = 20 mA, f = 900 MHz
Noise figure	NF	—	1.2	2.5	dB	V_{CE} = 5 V, I_C = 5 mA, f = 900 MHz

Main Characteristics

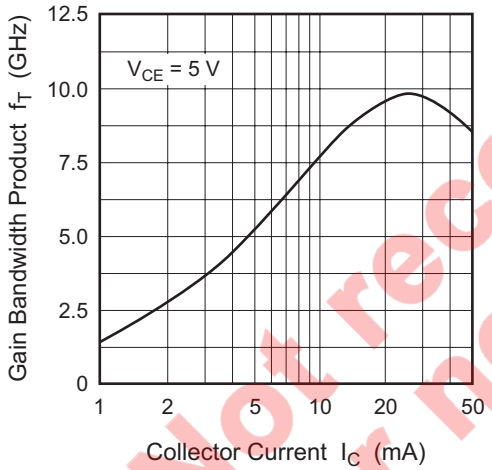
Maximum Collector Dissipation Curve



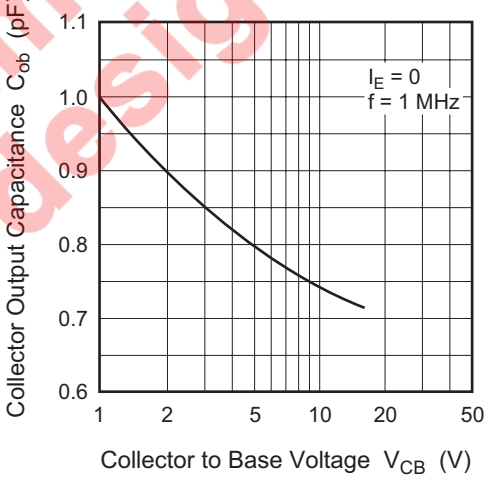
DC Current Transfer Ratio vs. Collector Current



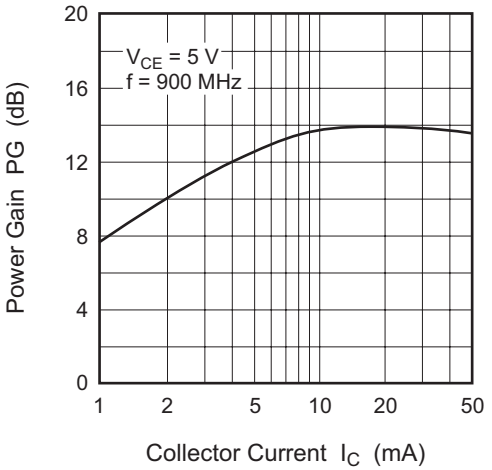
Gain Bandwidth Product vs. Collector Current



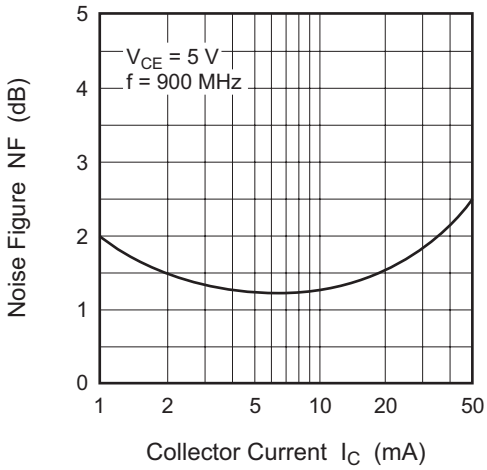
Collector Output Capacitance vs. Collector to Base Voltage



Power Gain vs. Collector Current

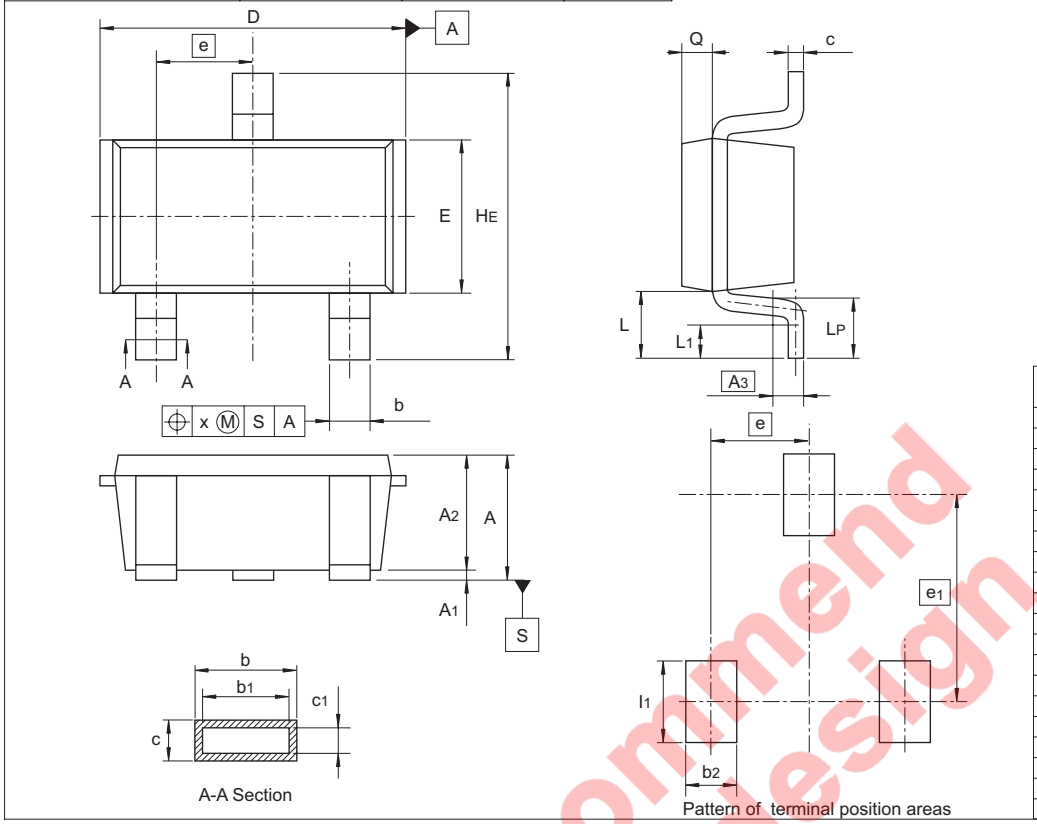


Noise Figure vs. Collector Current



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-59A	PLSP0003ZB-A	MPAK(T) / MPAK(T)V, MPAK / MPAKV	0.011g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	1.0	—	1.3
A_1	0	—	0.1
A_2	1.0	1.1	1.2
A_3	—	0.25	—
b	0.35	0.42	0.5
b_1	—	0.4	—
c	0.1	0.13	0.15
c_1	—	0.11	—
D	2.7	—	3.1
E	1.35	1.5	1.65
e	—	0.95	—
H_E	2.2	2.8	3.0
L	0.35	—	0.75
L_1	0.15	—	0.55
L_P	0.25	—	0.65
x	—	—	0.05
b_2	—	—	0.55
e_1	—	1.95	—
l_1	—	—	1.05
Q	—	0.3	—

Ordering Information

Part Name	Quantity	Shipping Container
2SC4591XM-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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RENESAS SALES OFFICES

http://www.renesas.com

Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

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