2SC4050

Silicon NPN Epitaxial

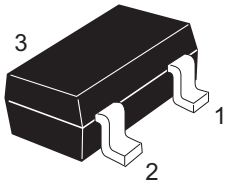
R07DS0274EJ0400
Rev.4.00
Jan 10, 2014

Application

Low frequency amplifier, switching

Outline

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



1. Emitter
2. Base
3. Collector

Note: Marking is “KIE“.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

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Electrical Characteristics

(Ta = 25°C)

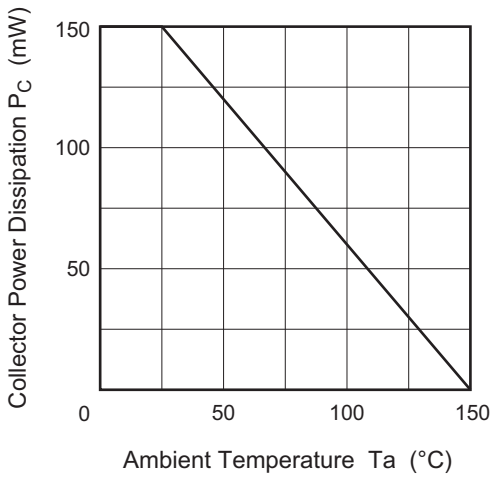
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.1	µA	V_{CB} = 70 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	0.1	µA	V_{EB} = 2 V, I_C = 0
DC current transfer ratio	h_{FE}	400	—	800		V_{CE} = 12 V, I_C = 2 mA*[1]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.1	V	I_C = 10 mA, I_B = 1 mA*[1]
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.1	V	I_C = 10 mA, I_B = 1 mA*[1]

Notes: 1. Pulse test

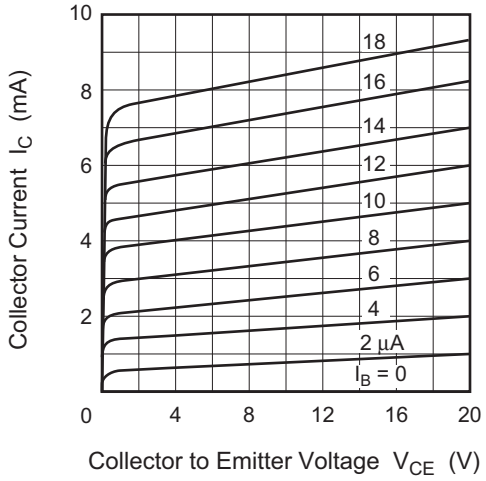
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Main Characteristics

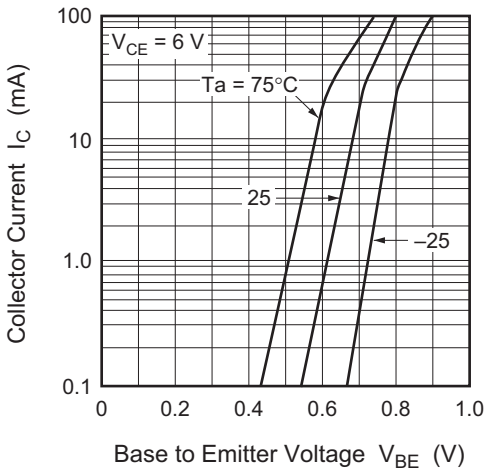
Maximum Collector Dissipation Curve



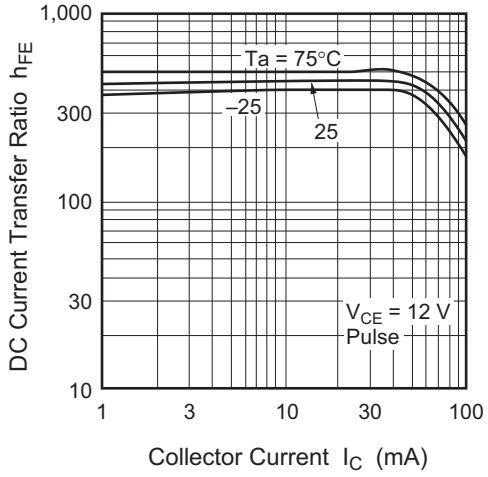
Typical Output Characteristics



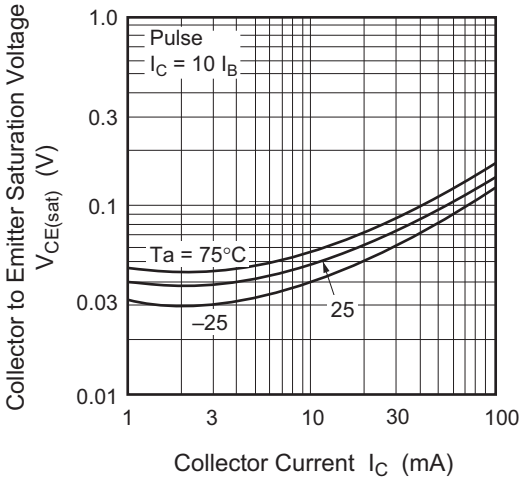
Typical Transfer Characteristics



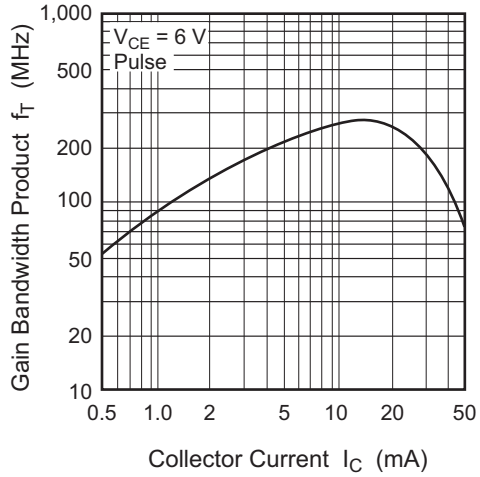
DC Current Transfer Ratio vs. Collector Current



Collector to Emitter Saturation Voltage vs. Collector Current

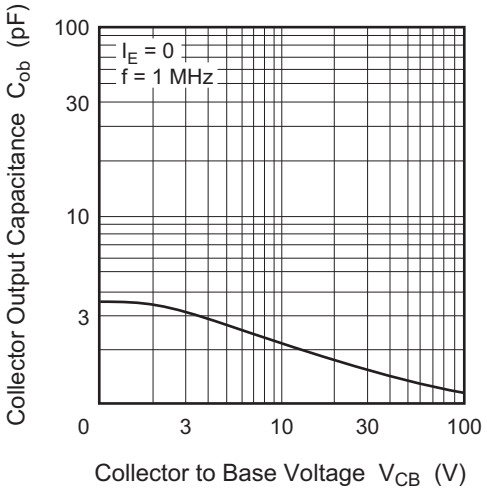


Gain Bandwidth Product vs. Collector Current



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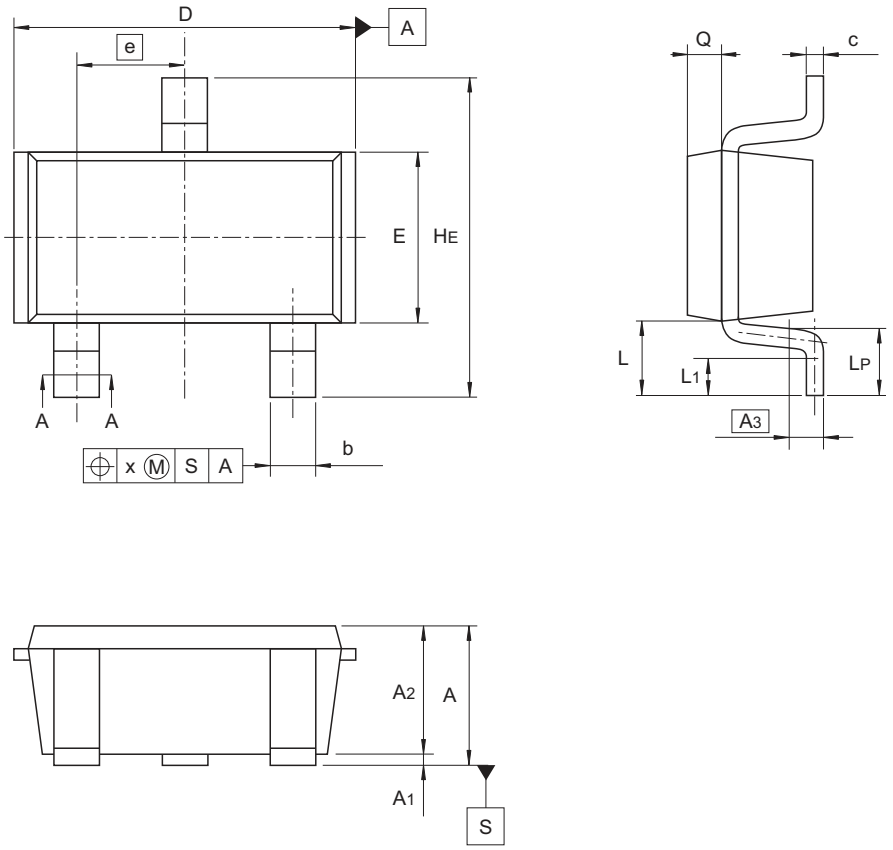
Collector Output Capacitance vs.
Collector to Base Voltage



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Package Dimensions

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



Reference Symbol	Dimensions 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	0.4	0.5
c	0.1	0.16	0.26
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
Q	—	0.3	—

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Ordering Information

Orderable Part Number	Quantity	Shipping Container
2SC4050KIETR-E 2SC4050KIETR-H	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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