2SD1306

Silicon NPN Epitaxial

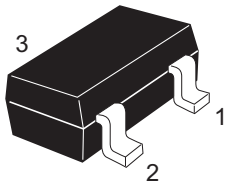
REJ03G0784-0200
(Previous ADE-208-1144)
Rev.2.00
Aug.10.2005

Application

Low frequency amplifier, Muting

Outline

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



1. Emitter
2. Base
3. Collector

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	15	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	0.7	A
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	$V_{(BR)CBO}$	30	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	15	—	—	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}	—	—	1.0	µA	V_{CB} = 20 V, I_E = 0
DC current transfer ratio	h_{FE}*[1]	250	—	800		V_{CE} = 1 V, I_C = 150 mA*[2]
Base to emitter voltage	V_{BE}	—	—	1.0	V	V_{CE} = 1 V, I_C = 150 mA*[2]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	I_C = 500 mA, I_B = 50 mA*[2]
Gain bandwidth product	f_T	—	250	—	MHz	V_{CE} = 1 V, I_C = 150 mA*[2]

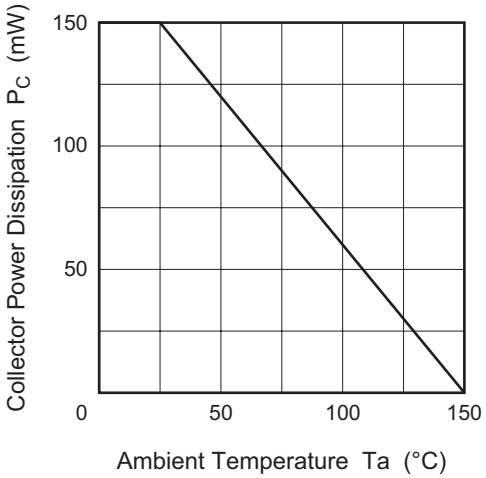
Notes: 1. The 2SD1306 is grouped by h_{FE} as follows.

2. Pulse test

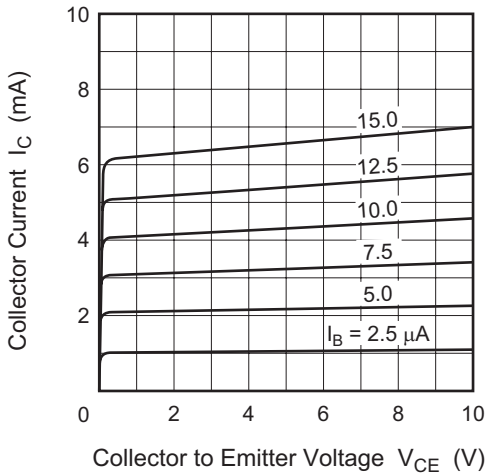
Grade	D	E
Mark	ND	NE
h_{FE}	250 to 500	400 to 800

Main Characteristics

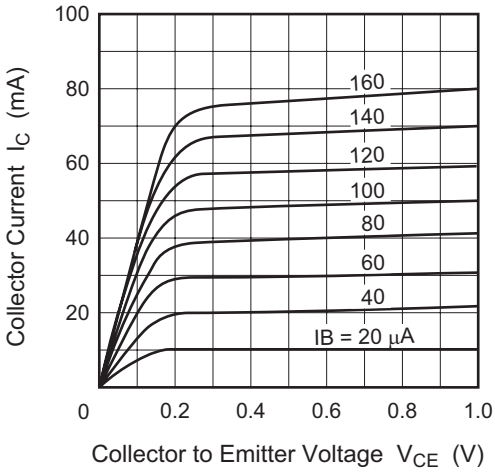
Maximum Collector Dissipation Curve



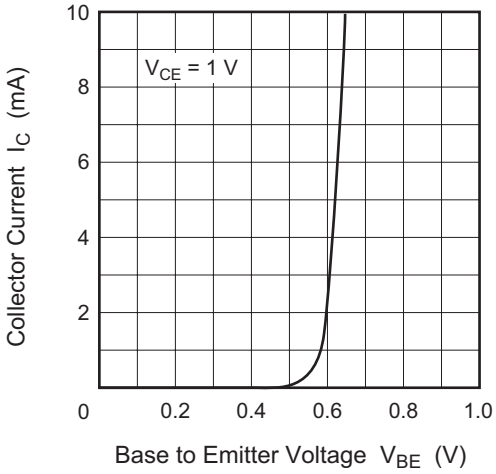
Typical Output Characteristics



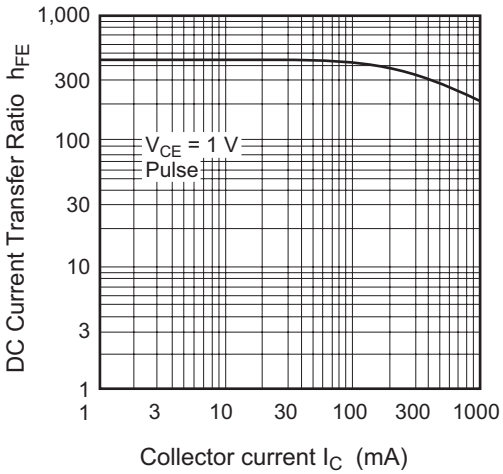
Typical Output Characteristics



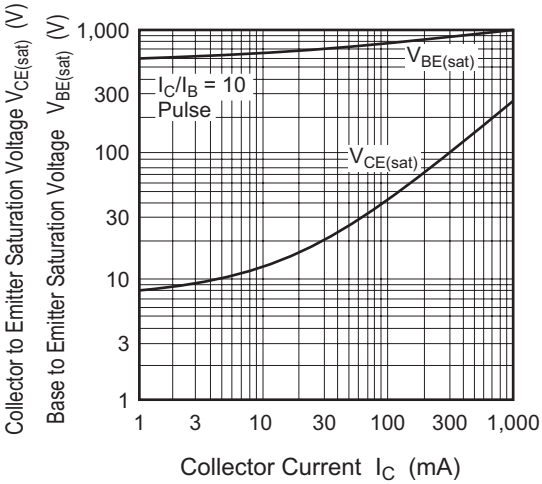
Typical Transfer Characteristics



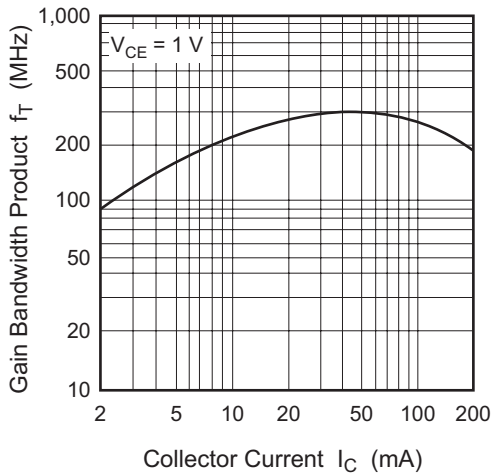
DC Current Transfer Ratio vs. Collector Current



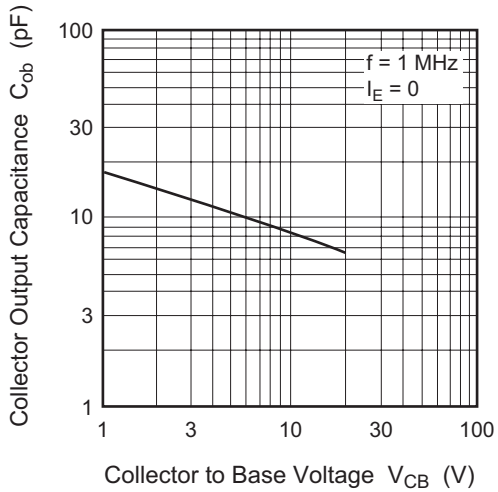
Saturation Voltage vs. Collector Current



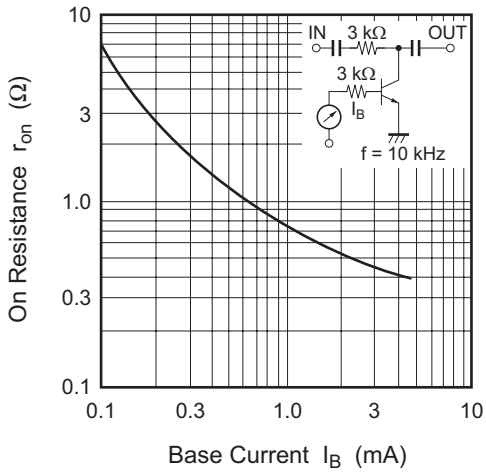
Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage

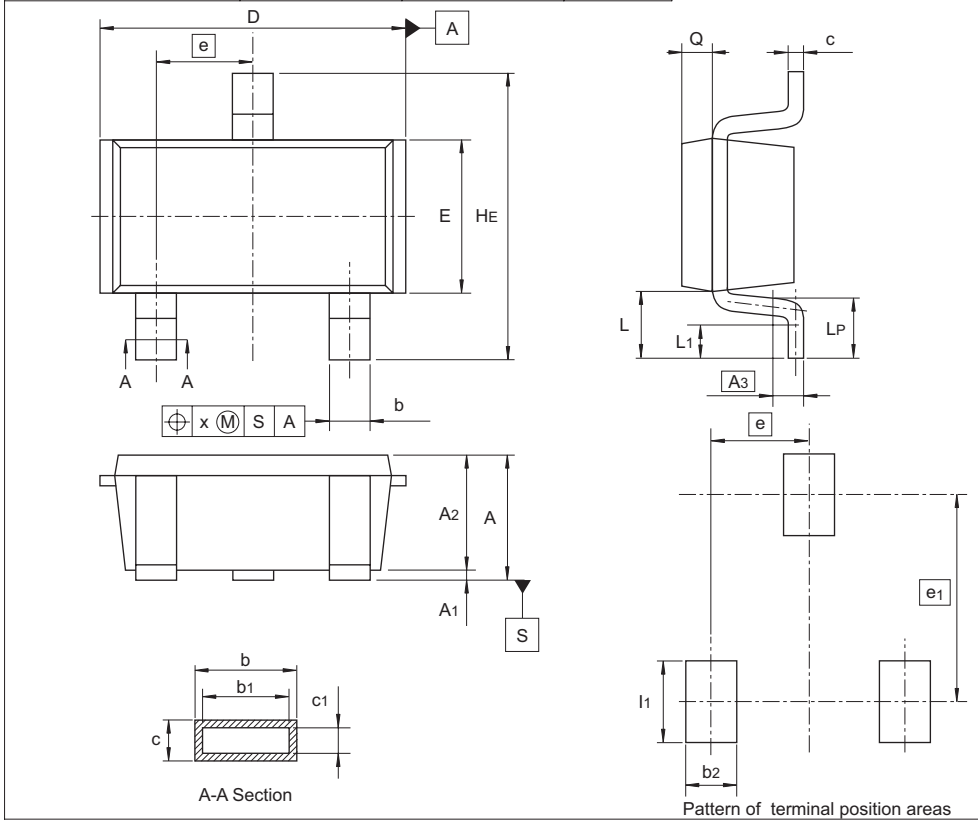


On Resistance vs. Base Current



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
2SD1306NDTL-E 2SD1306NETL-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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http://www.renesas.com

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