

2SD1306

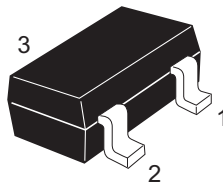
Silicon NPN Epitaxial

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_{CB0}	30	V
Collector to emitter voltage	V_{CE0}	15	V
Emitter to base voltage	V_{EB0}	5	V
Collector current	I_C	0.7	A
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-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	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	15	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
Collector cutoff current	I_{CBO}	—	—	1.0	μA	$V_{CB} = 20 \text{ V}, I_E = 0$
DC current transfer ratio	h_{FE}^{*1}	250	—	800		$V_{CE} = 1 \text{ V}, I_C = 150 \text{ mA}^{*2}$
Base to emitter voltage	V_{BE}	—	—	1.0	V	$V_{CE} = 1 \text{ V}, I_C = 150 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.5	V	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}^{*2}$
Gain bandwidth product	f_T	—	250	—	MHz	$V_{CE} = 1 \text{ V}, I_C = 150 \text{ mA}^{*2}$

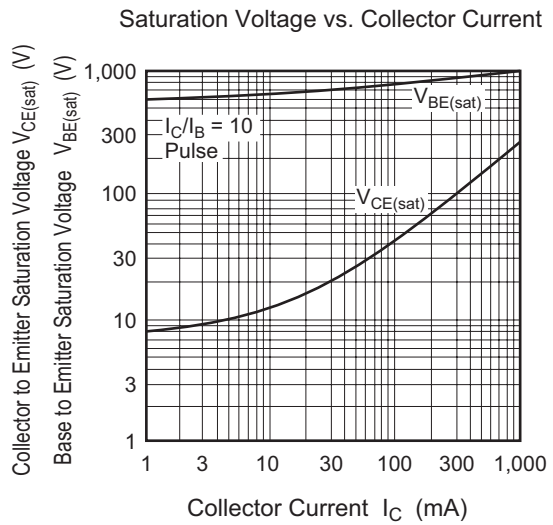
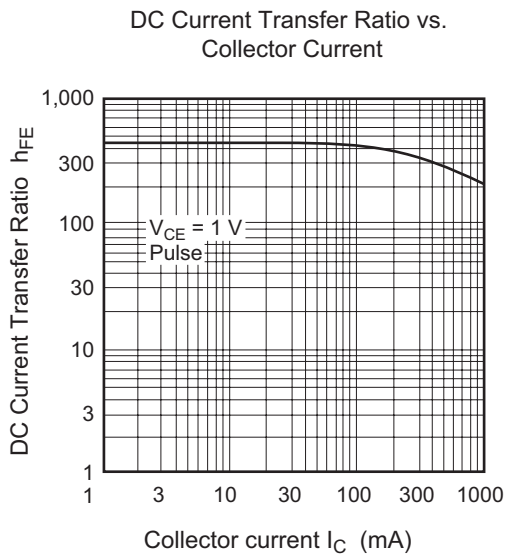
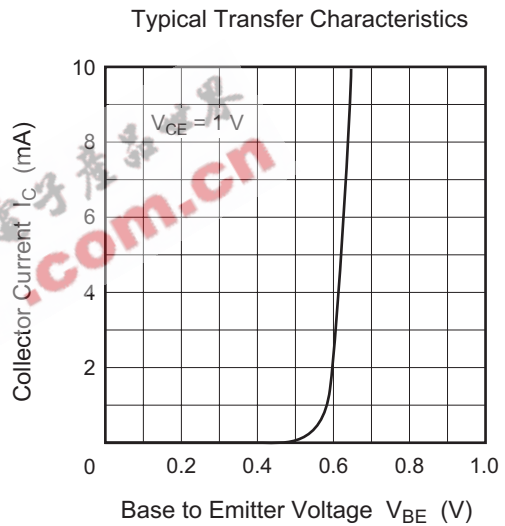
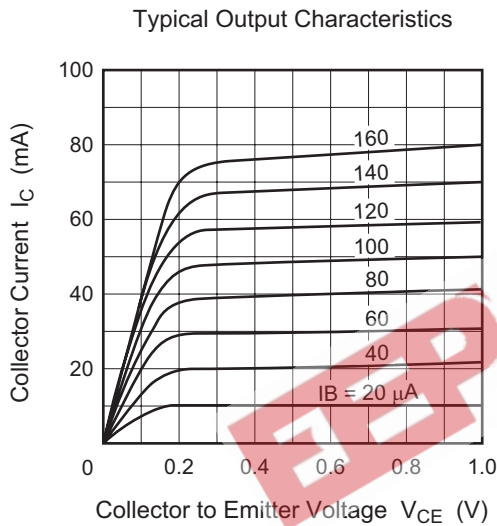
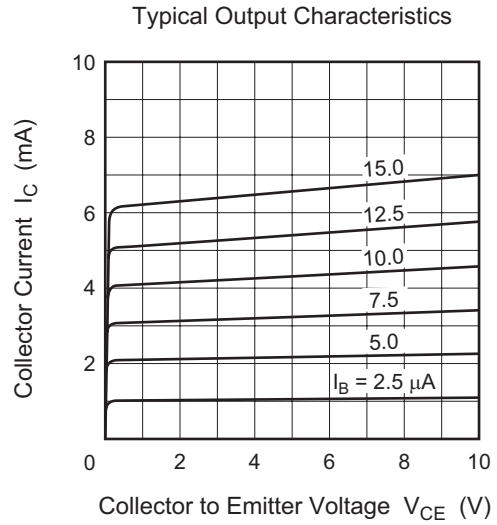
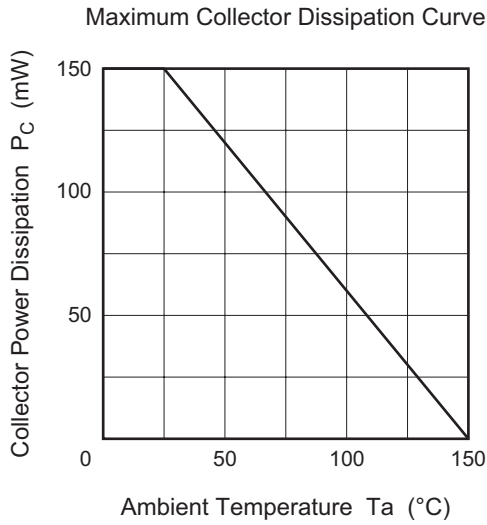
Notes: 1. The 2SD1306 is grouped by h_{FE} as follows.

2. Pulse test

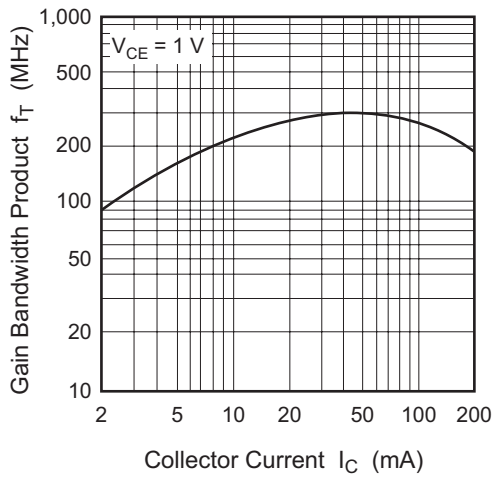
Grade	D	E
Mark	ND	NE
h_{FE}	250 to 500	400 to 800

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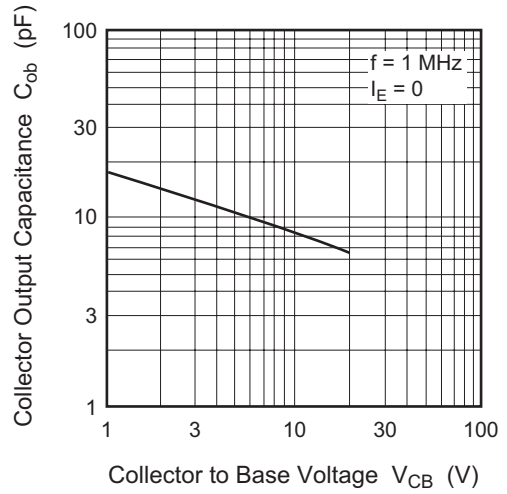
Main Characteristics



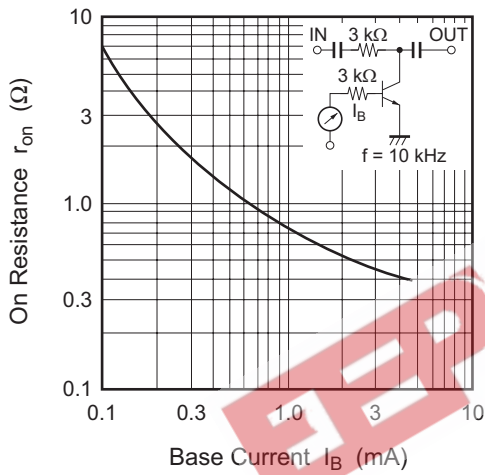
Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage

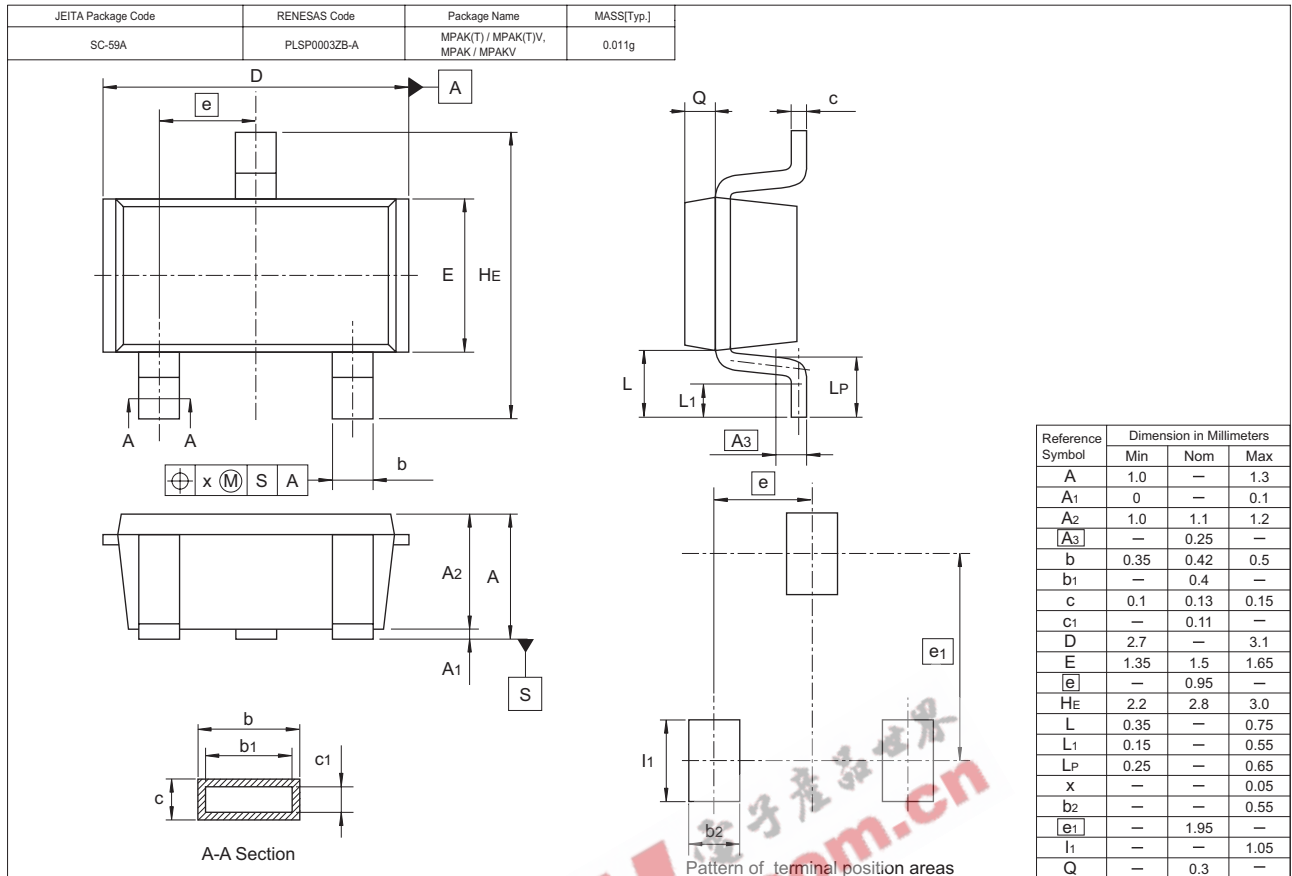


On Resistance vs. Base Current



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Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SD1306NDTL-E	3000	φ 178 mm Reel, 8 mm Emboss Taping
2SD1306NETL-E		

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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