

2SD1306

R07DS0280EJ0300
 (Previous: REJ03G0784-0200)
 Rev.3.00
 Mar 28, 2011

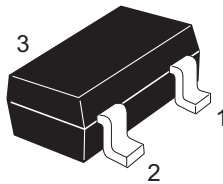
Silicon NPN Epitaxial

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	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

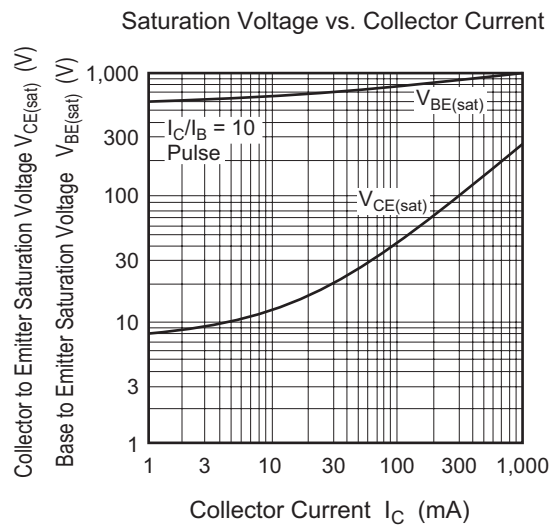
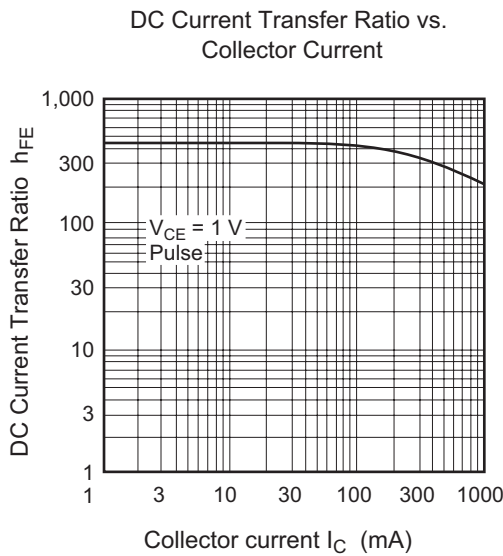
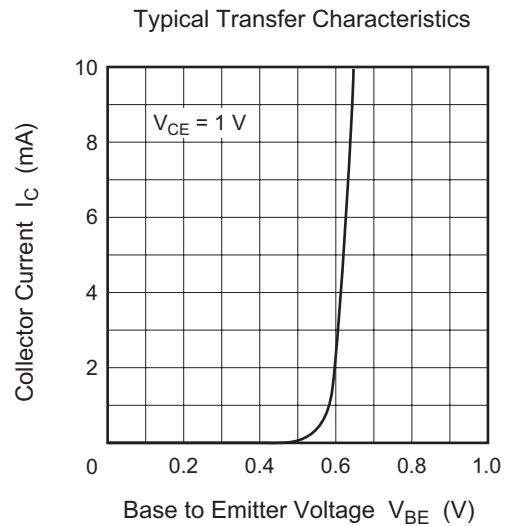
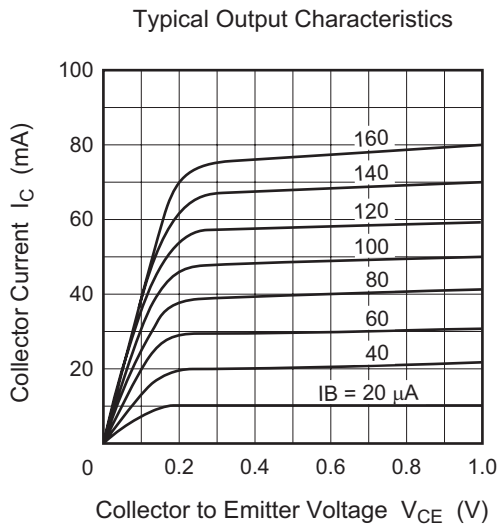
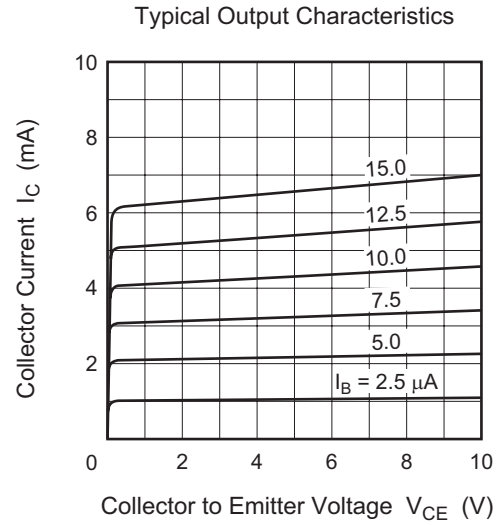
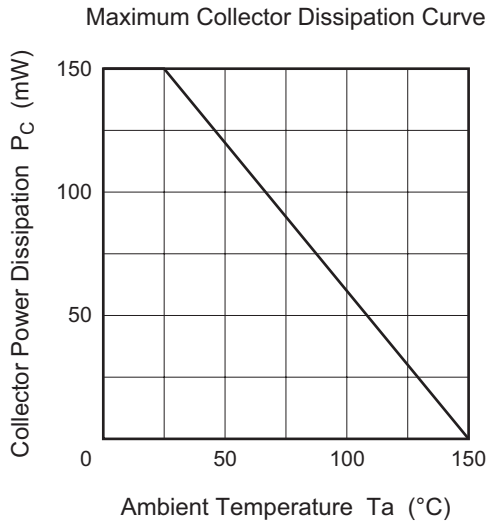
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	15	—	—	V	$I_C = 1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu A, I_C = 0$
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.

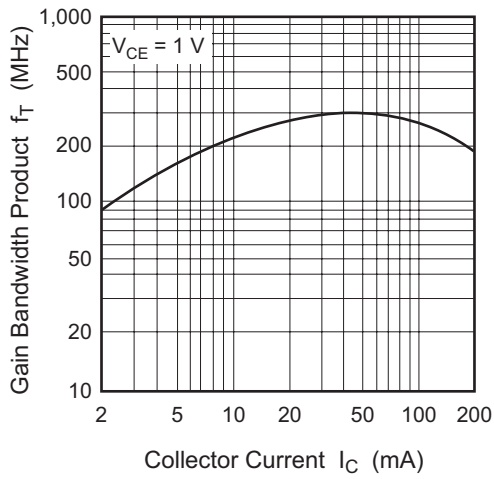
2. Pulse test

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

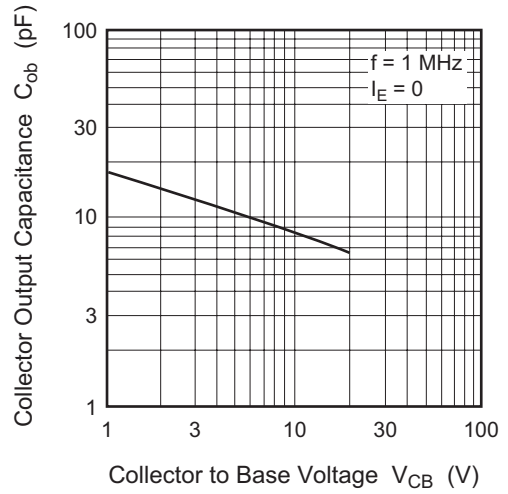
Main Characteristics



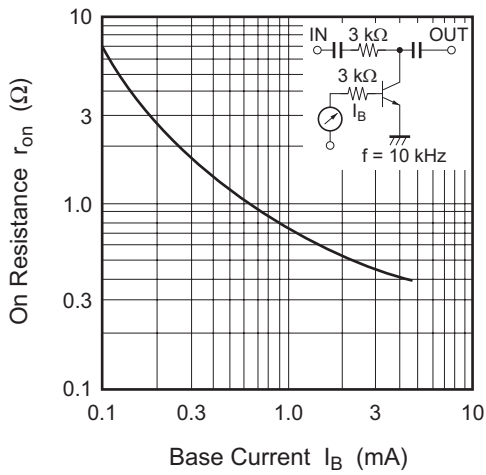
Gain Bandwidth Product vs. Collector Current



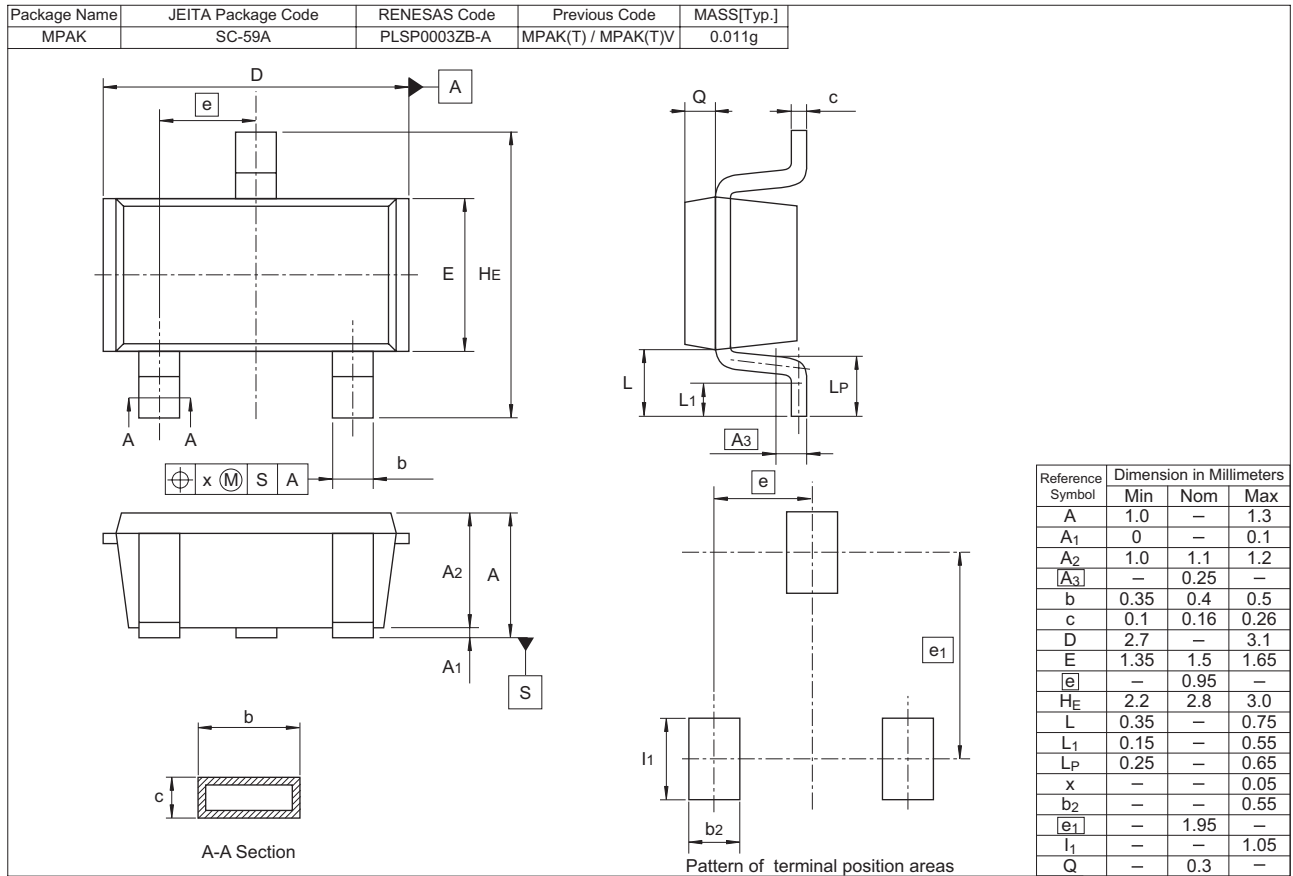
Collector Output Capacitance vs. Collector to Base Voltage



On Resistance vs. Base Current



Package Dimensions



Ordering Information

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

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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