



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SB815/2SD1048 — General-Purpose AF Amplifier Applications

PNP / NPN Epitaxial Planar Silicon Transistor

Features

- Ultrasmall package allows miniaturization in end products
- Large current capacity ($I_C=0.7A$) and low-saturation voltage

Specifications () : 2SB815

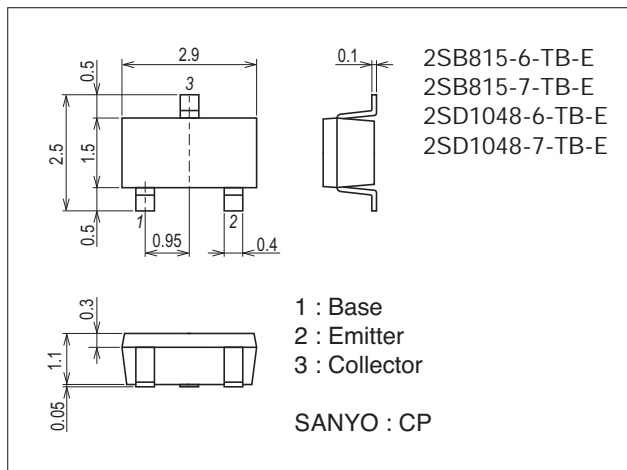
Absolute Maximum Ratings at $T_a=25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)20	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 Current (Pulse)	I_{CP}		(-)1.5	A
Collector Dissipation	P_C		200	mW
Junction Temperature	T_j		125	$^\circ C$
Storage Temperature	T_{stg}		-55 to +125	$^\circ C$

Package Dimensions

unit : mm (typ)

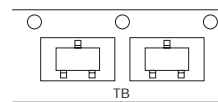
7013A-009



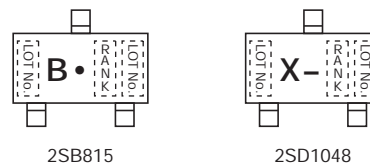
Product & Package Information

- Package : CP
- JEITA, JEDEC : SC-59, TO-236, SOT-23, TO-236AB
- Minimum Packing Quantity : 3,000 pcs./reel

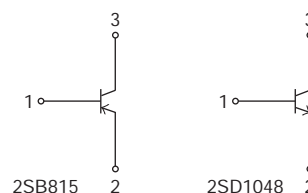
Packing Type: TB



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

<http://www.sanyosemi.com/en/network/>

2SB815 / 2SD1048

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)15V, I _E =0A			(-)0.1	μA
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0A			(-)0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =(-)2V, I _C =(-)50mA	(200*)200*		(600*)900*	
	h _{FE2}	V _{CE} =(-)2V, I _C =(-)500mA	80			
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)50mA		250		MHz
Output Capacitance	Cob	V _{CB} =(-)10V, f=1MHz		(13)8		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)1}	I _C =(-)5mA, I _B =(-)0.5mA		(-15)10	(-35)25	mV
	V _{CE(sat)2}	I _C =(-)100mA, I _B =(-)10mA		(-60)30	(-120)80	mV

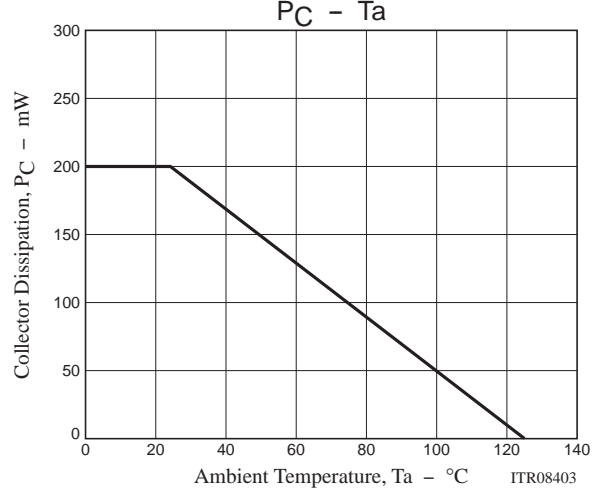
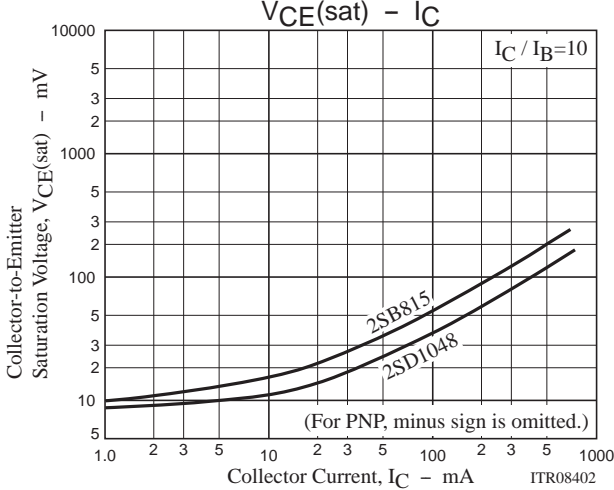
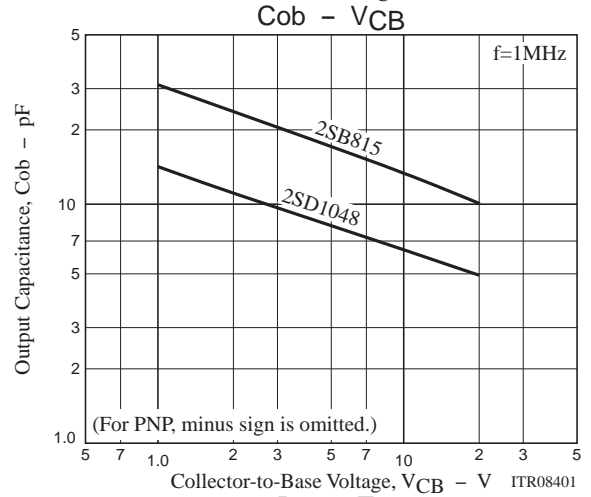
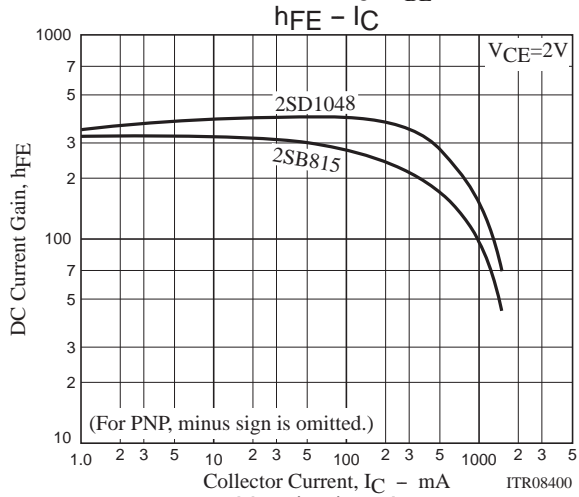
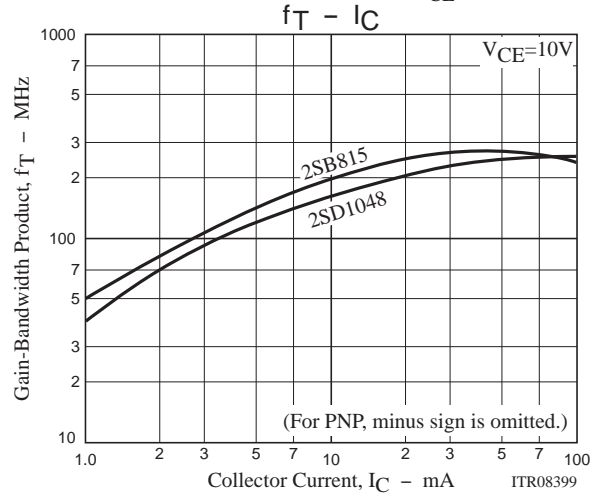
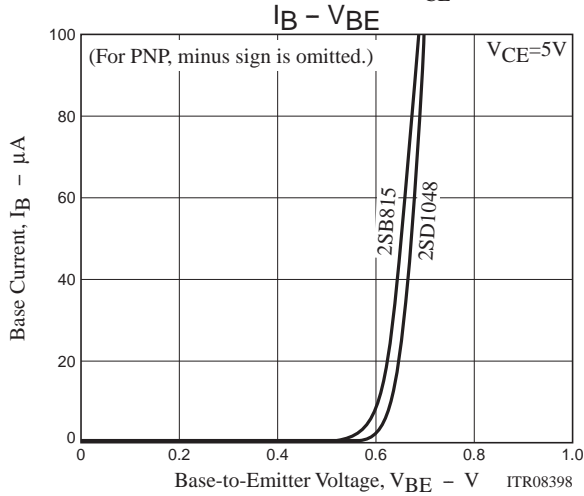
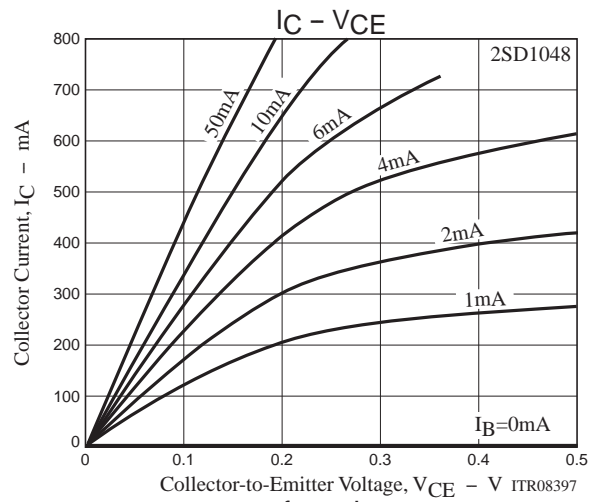
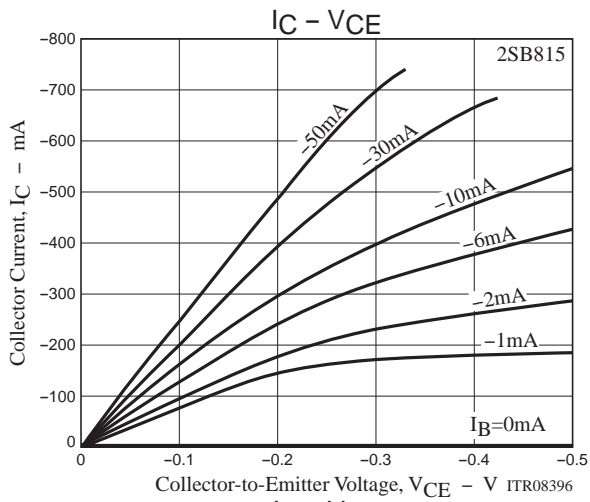
* : The 2SB815/2SD1048 are classified by 50mA h_{FE} as follows :

Rank	6	7	8
h _{FE}	200 to 400	300 to 600	450 to 900

Ordering Information

Device	Package	Shipping	memo
2SB815-6-TB-E	CP	3,000pcs./reel	Pb Free
2SB815-7-TB-E	CP	3,000pcs./reel	
2SD1048-6-TB-E	CP	3,000pcs./reel	
2SD1048-7-TB-E	CP	3,000pcs./reel	

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Embossed Taping Specification

2SB815-6-TB-E, 2SB815-7-TB-E, 2SD1048-6-TB-E, 2SD1048-7-TB-E

1. Packing Format

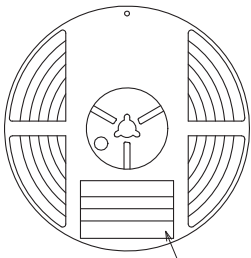
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CP	CP	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

Outer box label

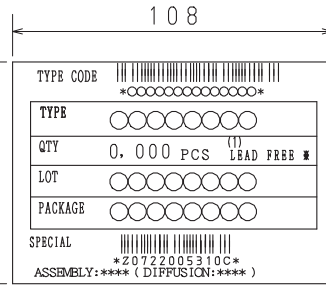
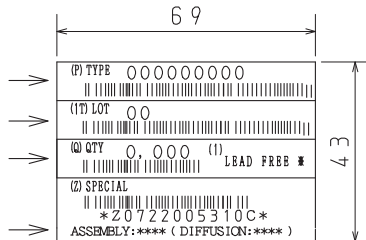
It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label

Type No.
LOT No.
Quantity
Origin



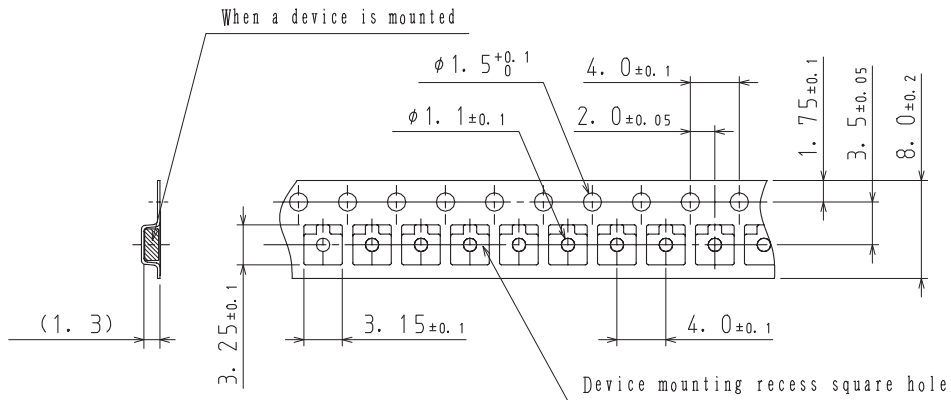
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

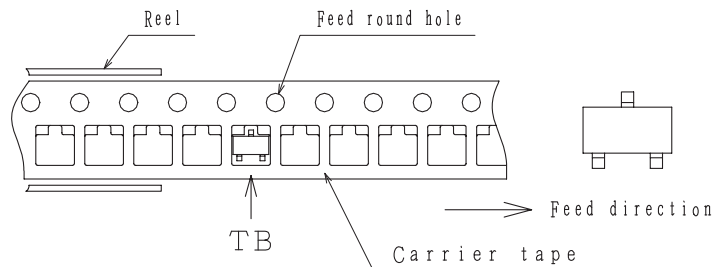
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction



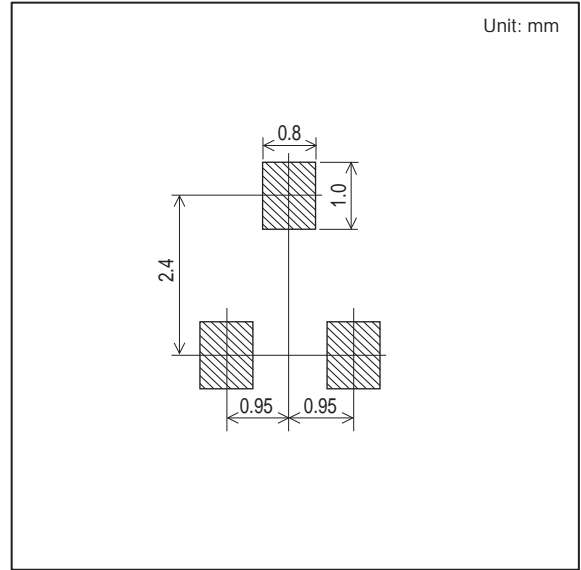
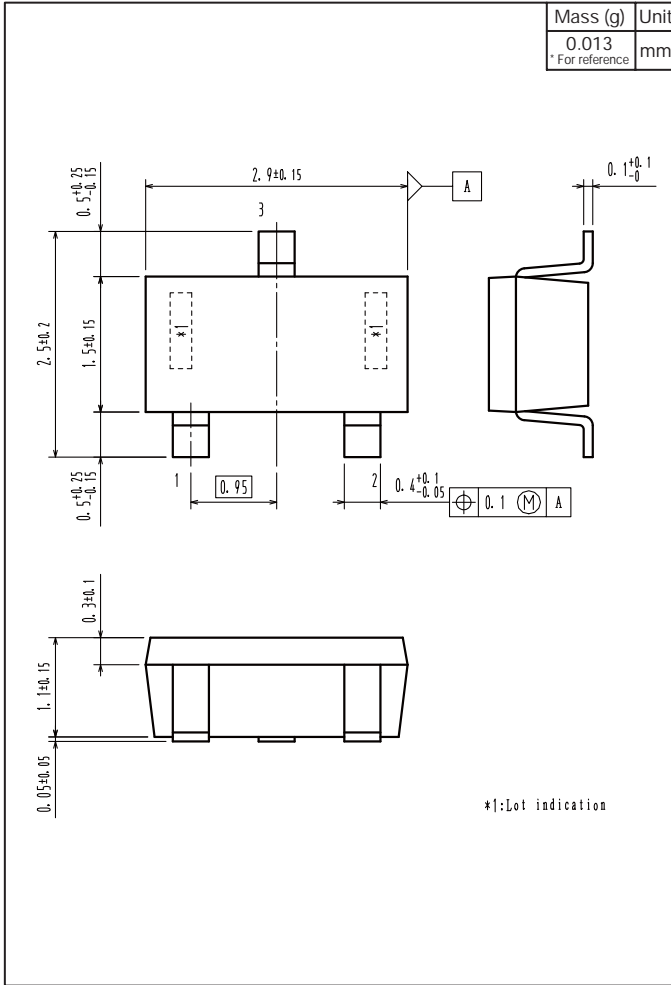
Those with one electrode terminal on the feed hole side.....TB

2SB815 / 2SD1048

Outline Drawing

Land Pattern Example

2SB815-6-TB-E, 2SB815-7-TB-E, 2SD1048-6-TB-E, 2SD1048-7-TB-E



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