



# 2SB815/2SD1048

## Bipolar Transistor (-)15V, (-)0.7A, Low VCE(sat), (PNP)NPN Single CP

ON Semiconductor®

<http://onsemi.com>

### 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  $T_a=25^\circ C$ 

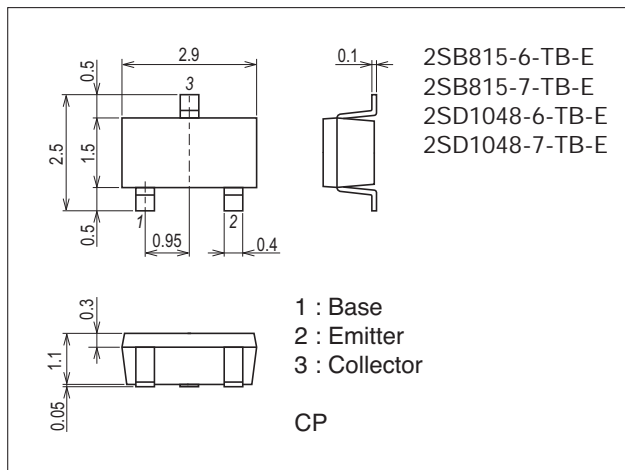
Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	$V_{CBO}$		(-)20	V
Collector to Emitter Voltage	$V_{CEO}$		(-)15	V
Emitter to Base Voltage	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)0.7	A
Collector Current (Pulse)	$I_{CP}$		(-)1.5	A
Collector Dissipation	$P_C$		200	mW
Junction Temperature	$T_j$		125	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +125	$^\circ C$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)

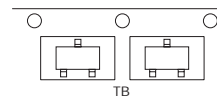
7013A-009



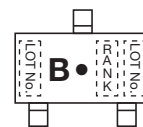
### Product & Package Information

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

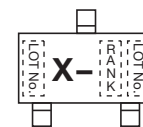
### Packing Type: TB



### Marking

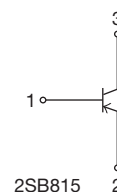


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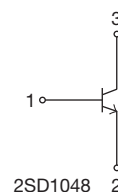


2SD1048

### Electrical Connection



2SB815



2SD1048

## 2SB815 / 2SD1048

### Electrical Characteristics at Ta=25°C

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

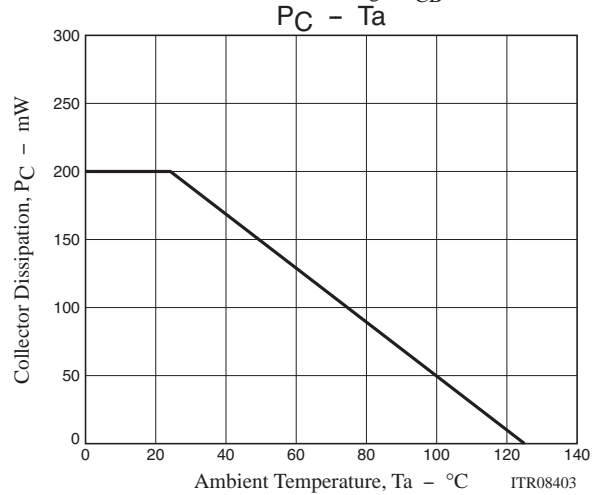
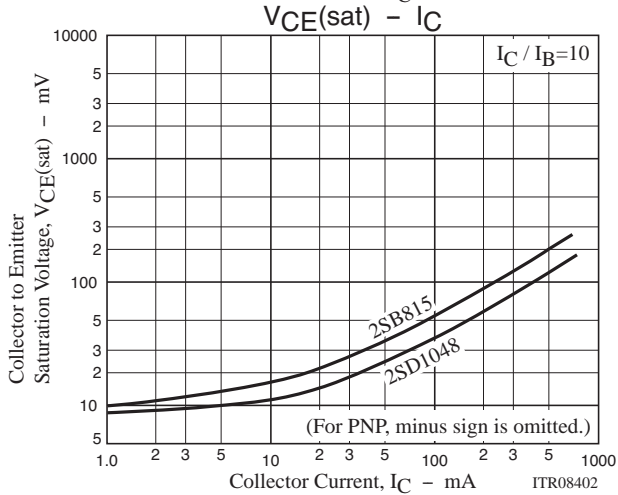
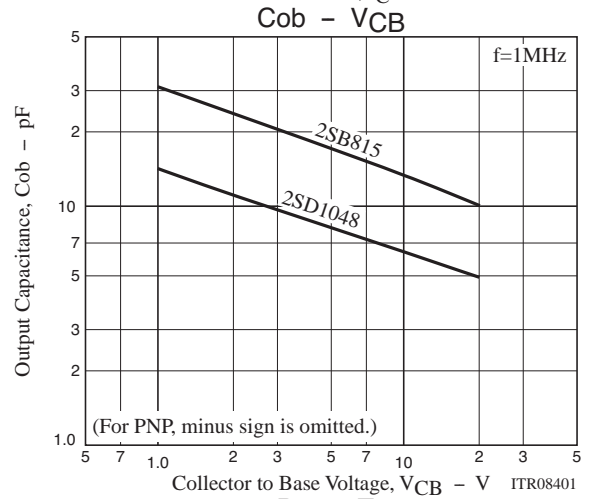
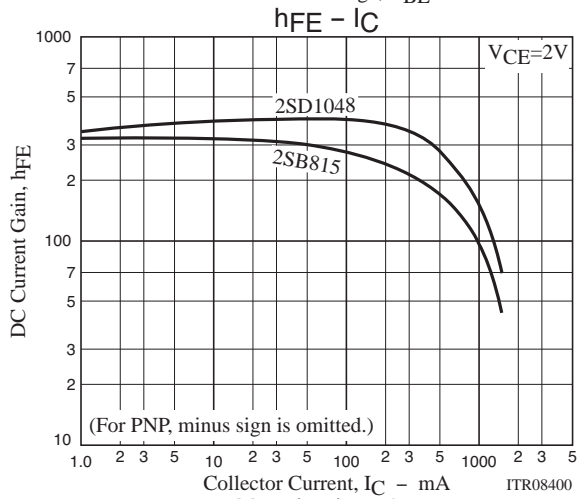
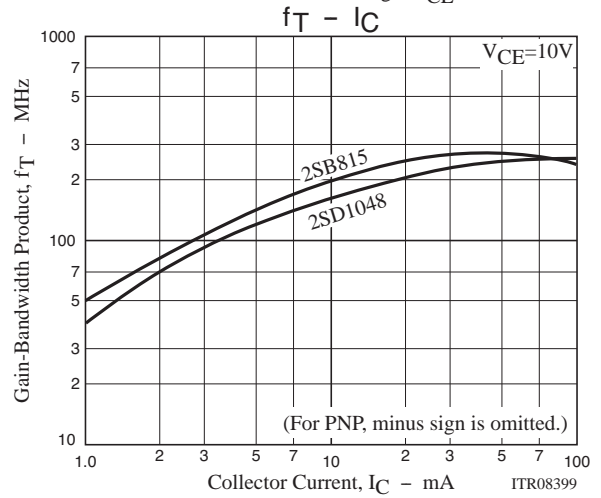
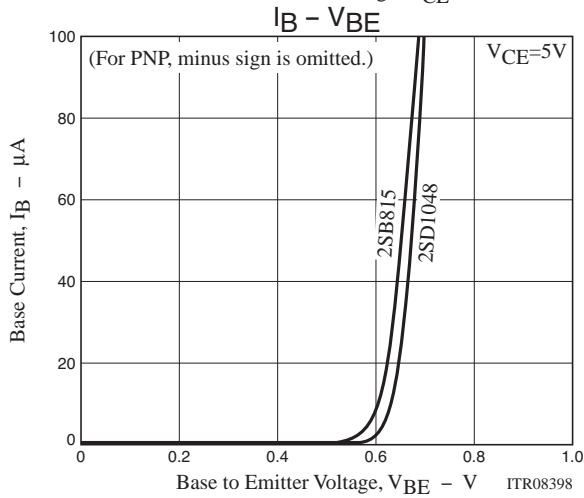
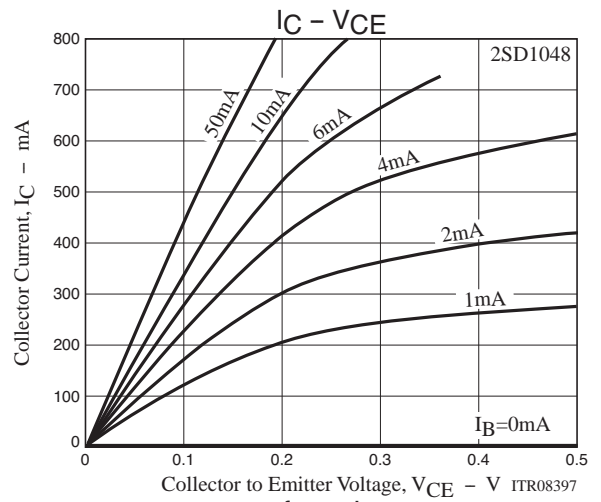
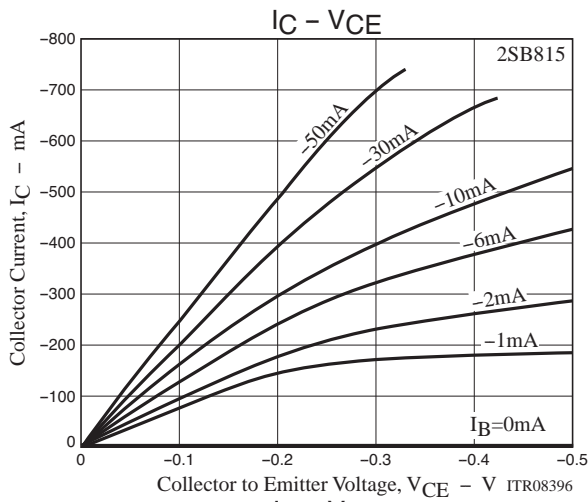
\* : The 2SB815/2SD1048 are classified by 50mA h<sub>FE</sub> as follows :

Rank	6	7
h <sub>FE</sub>	200 to 400	300 to 600

### 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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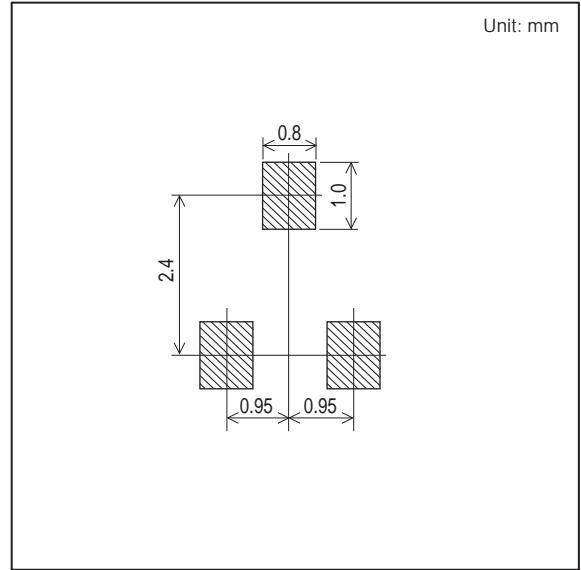
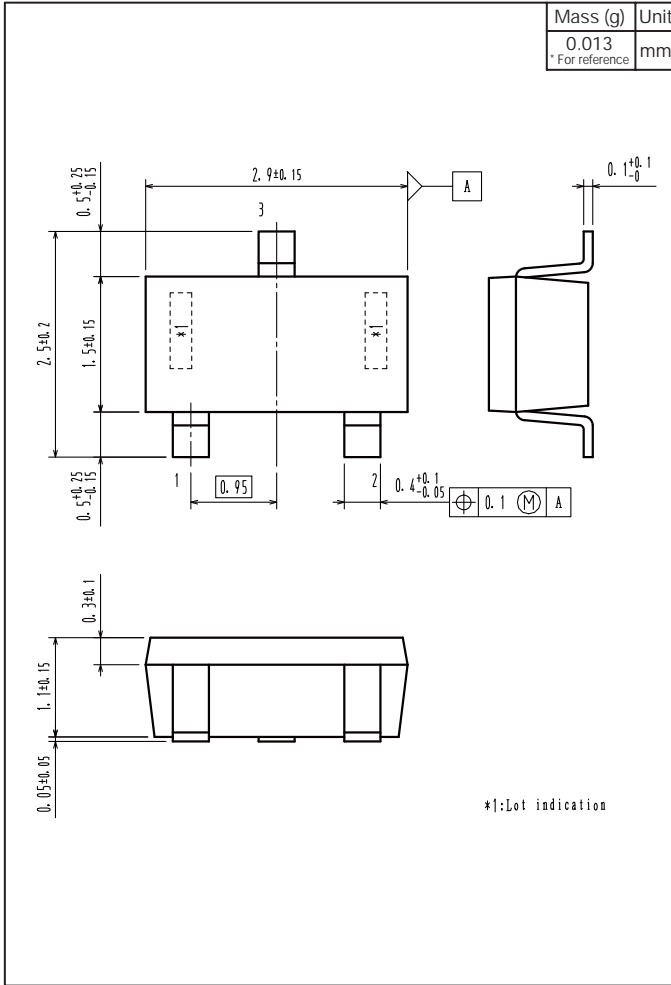


# 2SB815 / 2SD1048

## 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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