



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 $T_a=25^\circ C$

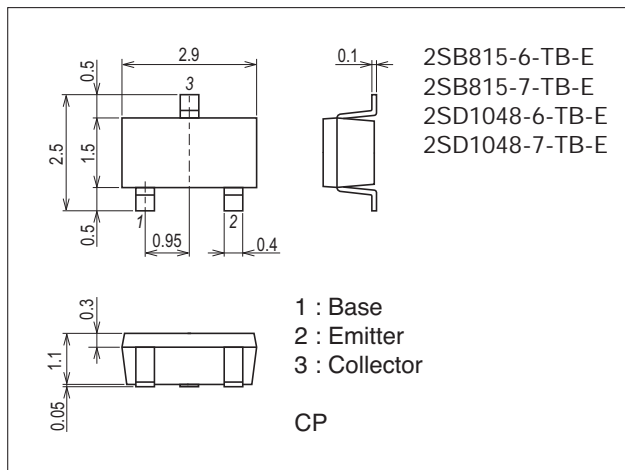
| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------|
| Collector to Base Voltage | V_{CBO} | | (-)20 | V |
| Collector to Emitter Voltage | V_{CEO} | | (-)15 | V |
| Emitter to Base Voltage | V_{EBO} | | (-)5 | V |
| 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)

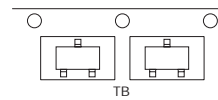
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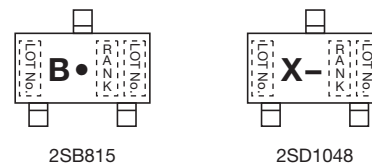
Product & Package Information

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

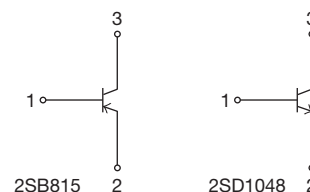
Packing Type: TB



Marking



Electrical Connection



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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* | | 600* | |
| | 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 |

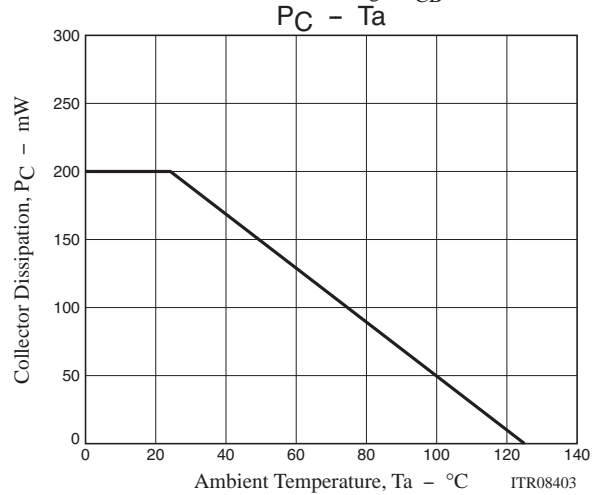
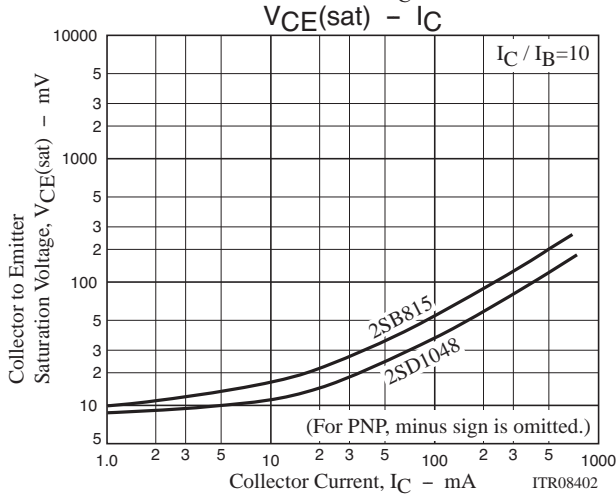
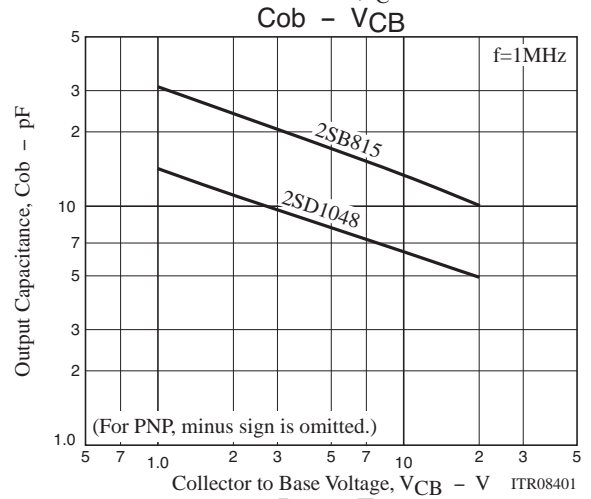
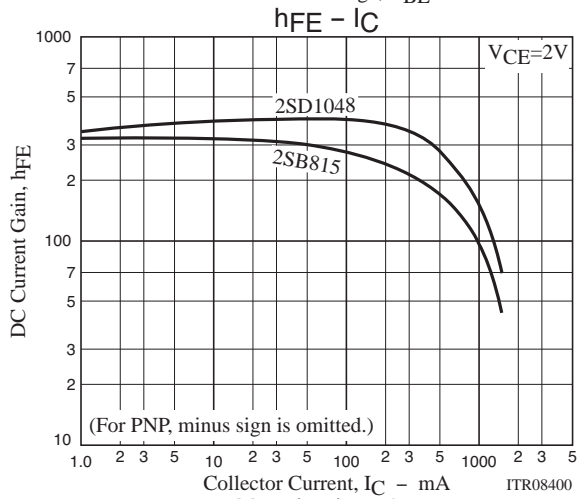
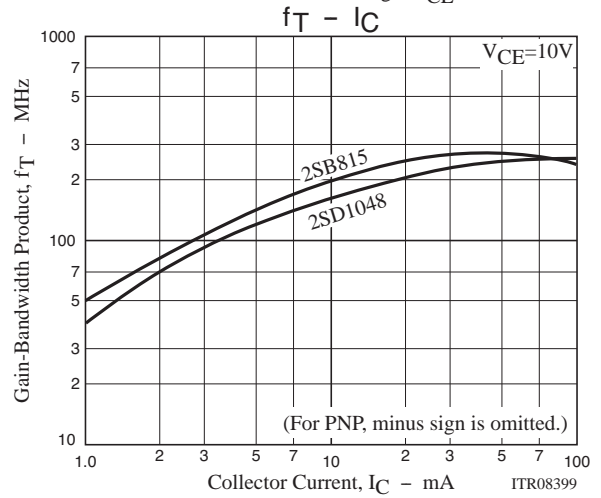
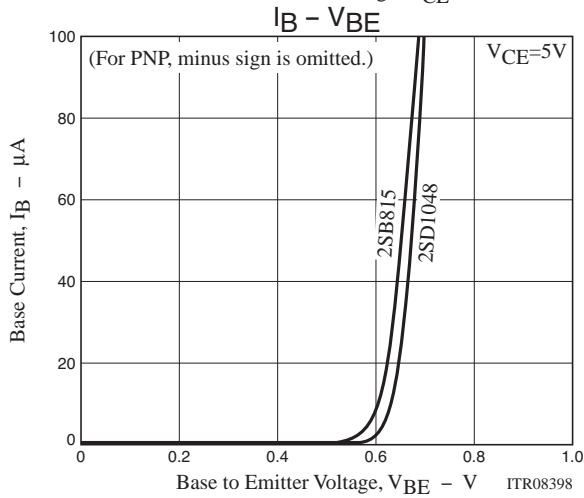
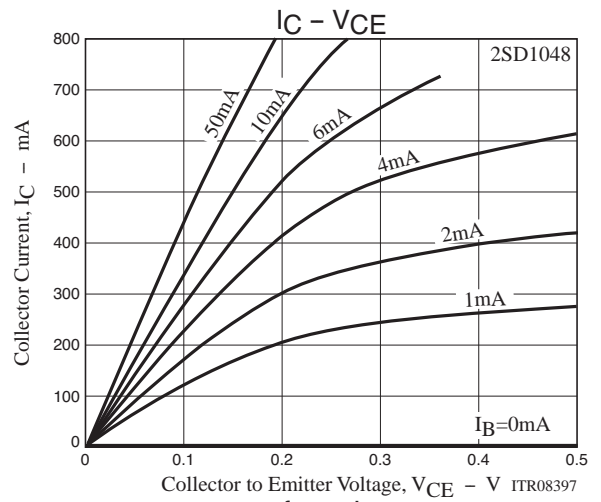
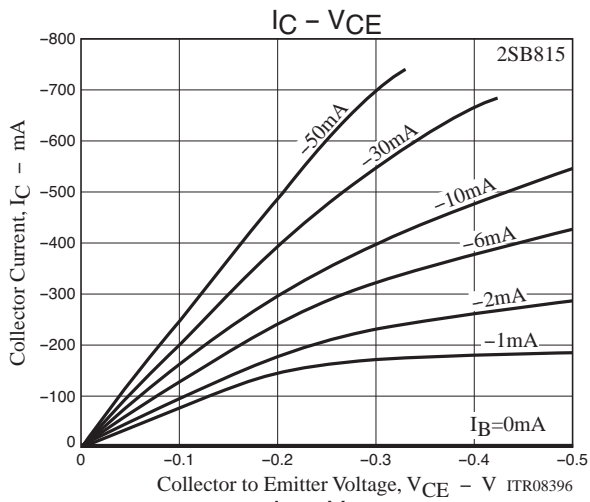
* : The 2SB815/2SD1048 are classified by 50mA h_{FE} as follows :

| Rank | 6 | 7 |
|-----------------|------------|------------|
| h _{FE} | 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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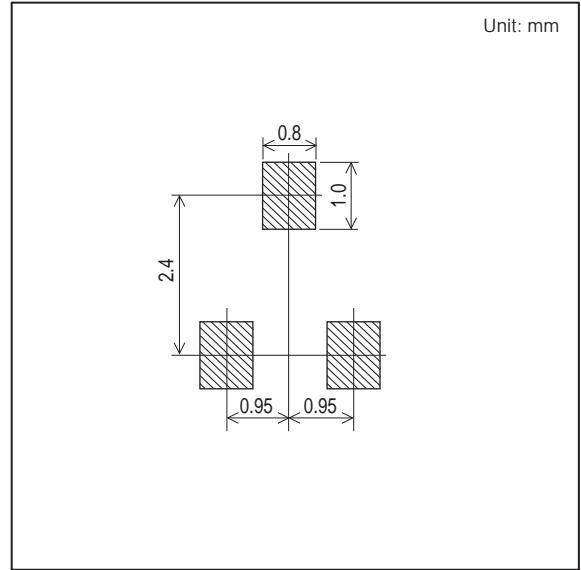
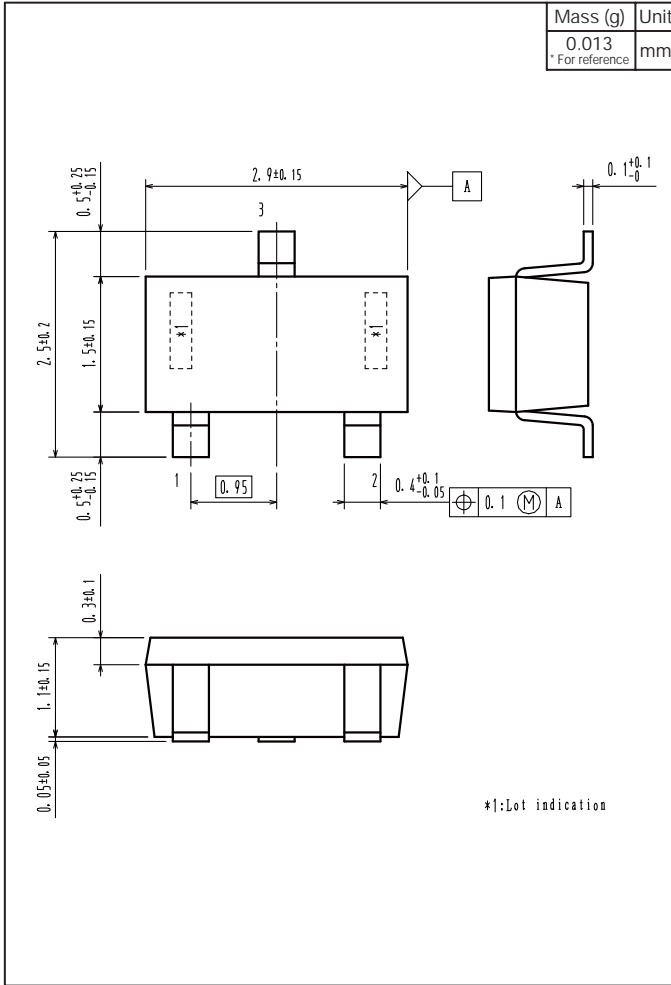


2SB815 / 2SD1048

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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