



2SB815 / 2SD1048

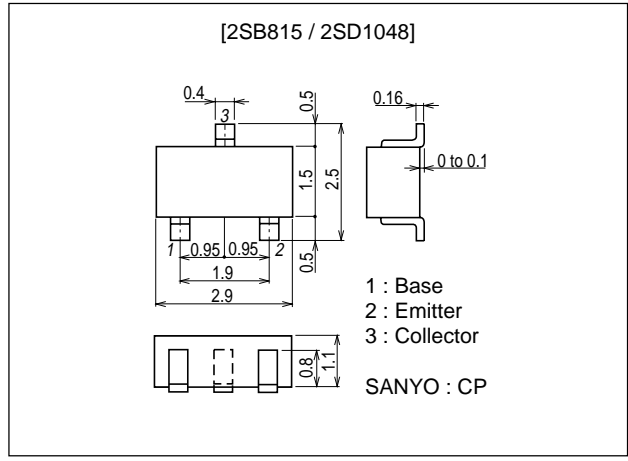
General-Purpose AF Amplifier Applications

Features

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

Package Dimensions

unit : mm
2018B



Specifications

() : 2SB815

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------|
| Collector-to-Base Voltage | V_{CB0} | | (-)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 | $^\circ C$ |

Electrical Characteristics at $T_a=25^\circ C$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|--------------------------|------------|-----|------------|---------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=-15V, I_E=0$ | | | (-)0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-4V, I_C=0$ | | | (-)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 | | | |

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

Continued on next page.

| | | | | | | | | |
|---------|-----|-----------|-----|-----|-----------|-----|-----|---------------|
| 2SB815 | 200 | B6 | 400 | 300 | B7 | 600 | | |
| 2SD1048 | 200 | X6 | 400 | 300 | X7 | 600 | 450 | X8 900 |

Note : Marking : B (2SB815), X (2SD1048)

h_{FE} rank : 6, 7 (2SB815), 6, 7, 8 (2SD1048)

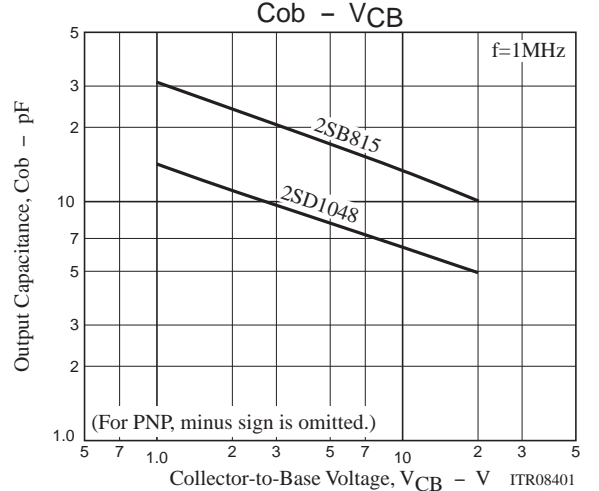
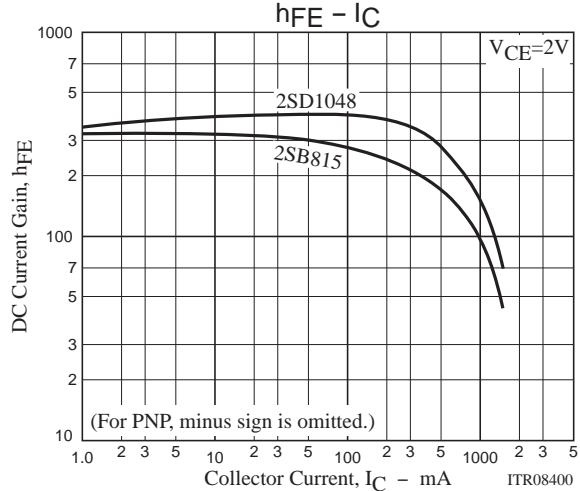
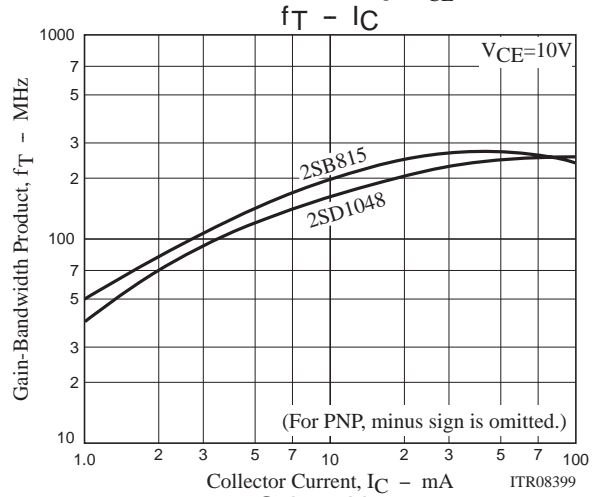
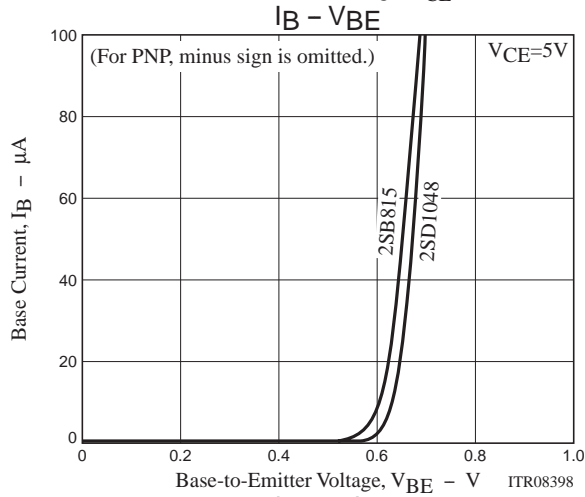
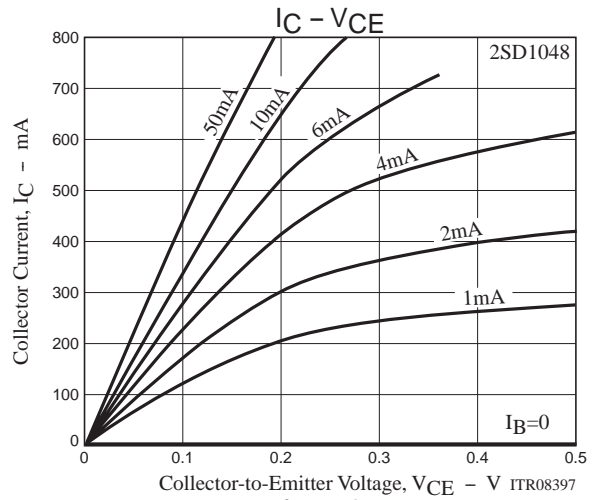
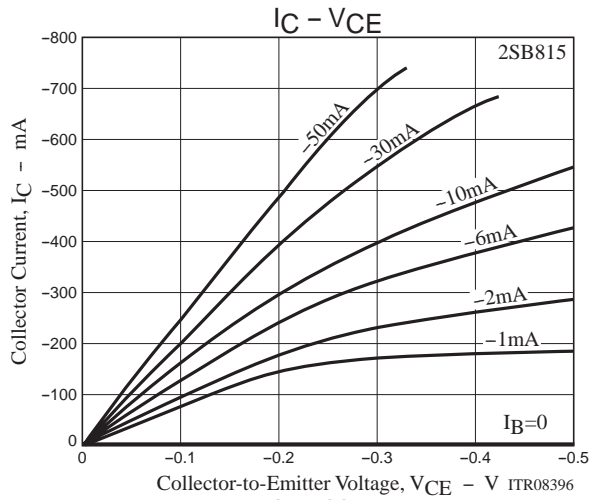
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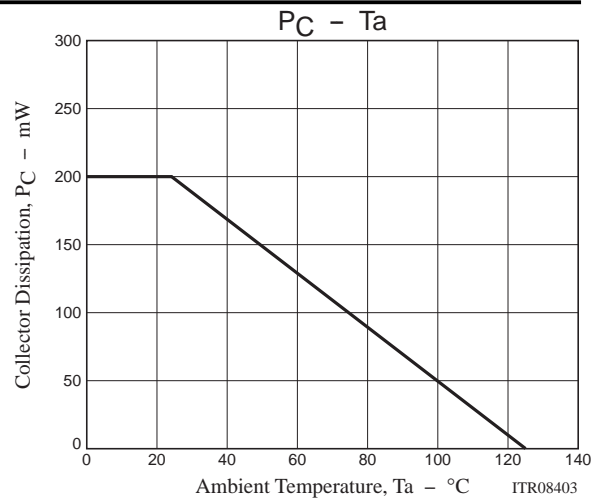
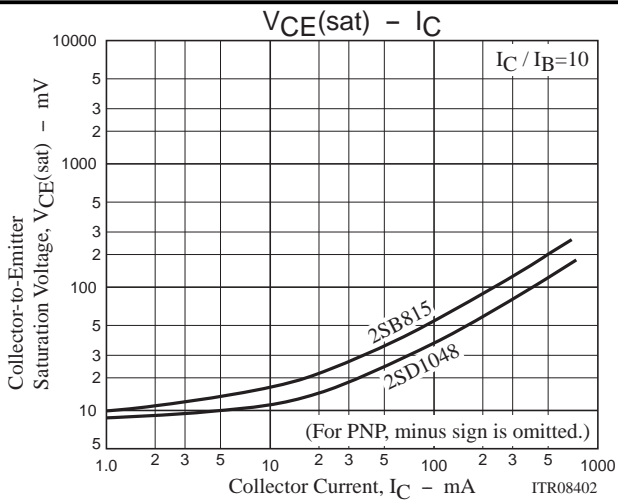
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------|------------------------------|---------|---------|----------|------|
| | | | min | typ | max | |
| Gain-Bandwidth Product | f_T | $V_{CE}=(-)10V, I_C=(-)50mA$ | | 250 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=(-)10V, f=1MHz$ | | (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 |



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