# 2SB1231/2SD1841



# 100V/25A Switching Applications

## **Applications**

· Motor drivers, relay drivers, converters, and other general high-current switching applications.

#### **Features**

- · Large current capacity and wide ASO.
- · Low saturation voltage.

(): 2SB1231

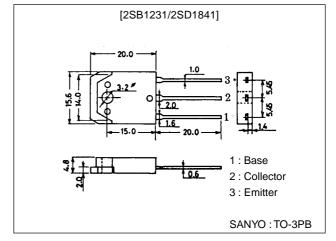
## **Specifications**

### Absolute Maximum Ratings at Ta = 25°C

## **Package Dimensions**

unit:mm

2022A



| Parameter                    | Symbol           | Conditions | Ratings     | Unit |
|------------------------------|------------------|------------|-------------|------|
| Collector-to-Base Voltage    | V <sub>CBO</sub> |            | (–)110      | V    |
| Collector-to-Emitter Voltage | VCEO             |            | (–)100      | V    |
| Emitter-to-Base Voltage      | V <sub>EBO</sub> |            | (–)6        | V    |
| Collector Current            | IC               |            | (–)25       | Α    |
| Collector Current (Pulse)    | ICP              |            | (–)40       | Α    |
| Base Current                 | ΙB               |            | (–)8        | Α    |
| Collector Dissipation        | PC               |            | 3.0         | W    |
|                              |                  | Tc=25°C    | 120         | W    |
| Junction Temperature         | Tj               |            | 150         | °C   |
| Storage Temperature          | Tstg             |            | -55 to +150 | °C   |

#### Electrical Characteristics at Ta = 25°C

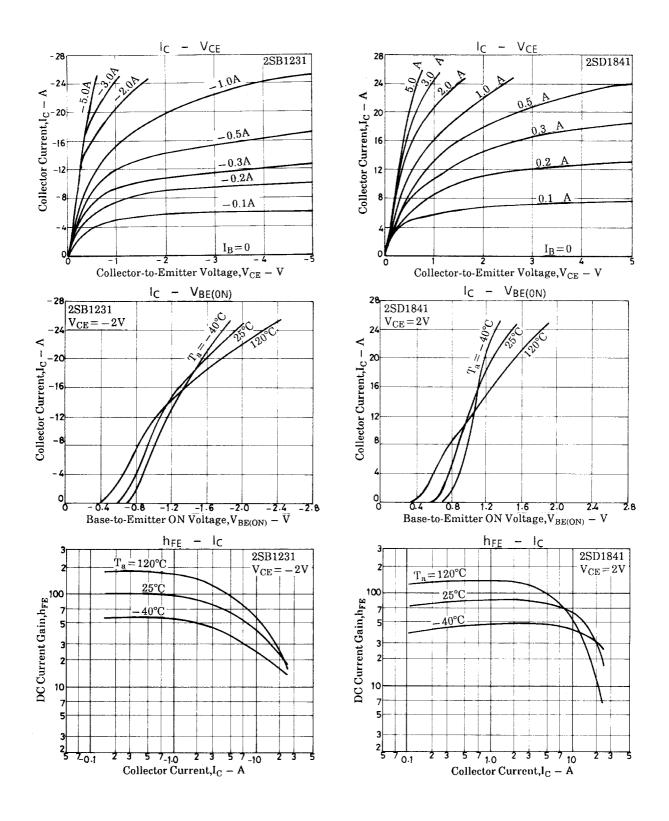
| Parameter                               | Symbol               | Conditions                                      | Ratings |     |        | Unit  |
|---|----------------------|---|---------|-----|--------|-------|
| Falantete                               | Syllibol             | Conditions                                      | min     | typ | max    | Offic |
| Collector Cutoff Current                | I <sub>CBO</sub>     | V <sub>CB</sub> =(-)100V, I <sub>E</sub> =0     |         |     | (–)0.1 | mA    |
| Emitter Cutoff Current                  | I <sub>EBO</sub>     | V <sub>EB</sub> =(-)5V, I <sub>C</sub> =0       |         |     | (–)0.1 | mA    |
| DC Current Gain                         | h <sub>FE</sub> 1    | V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)2.5A | 50*     |     | 140*   |       |
|   | h <sub>FE</sub> 2    | V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)10A  | 20      |     |        |       |
| Collector-to-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =(-)10A, I <sub>B</sub> =(-)1A   |         |     | (–)0.8 | V     |
| Base-to-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> =(-)10A, I <sub>B</sub> =(-)1A   |         |     | (–)1.5 | V     |

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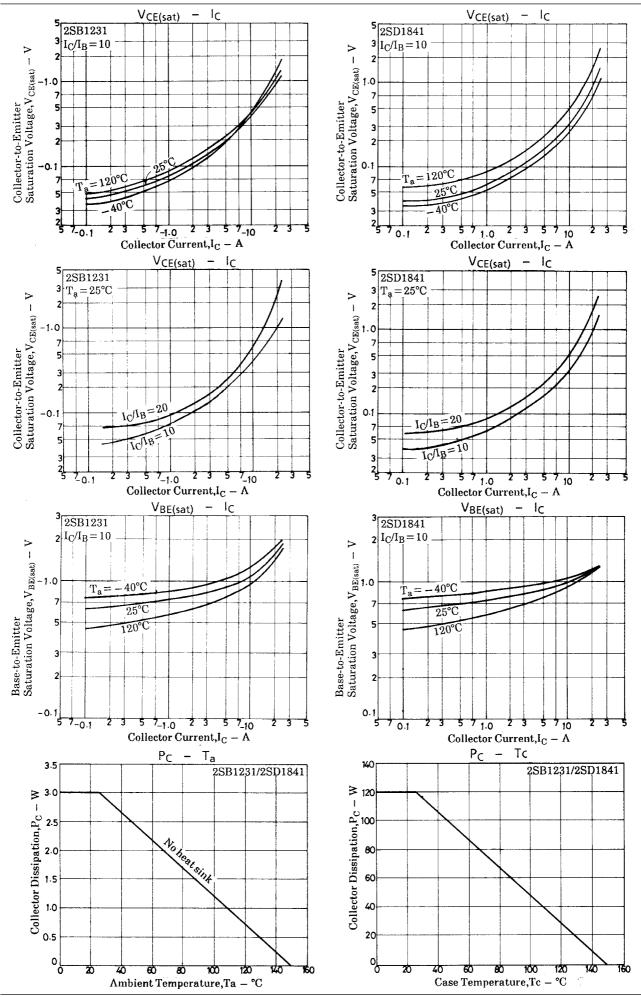
| Parameter                              | Symbol                | Conditions                                 | Ratings |     |     | Unit |
|--|-----------------------|--|---------|-----|-----|------|
|  | Symbol                |  | min     | typ | max | Onit |
| Collector-to-Base Breakdown Voltage    | V <sub>(BR)</sub> CBO | I <sub>C</sub> =(-)1mA, I <sub>E</sub> =0  | (–)110  |     |     | V    |
| Collector-to-Emitter Breakdown Voltage | V <sub>(BR)</sub> CEO | I <sub>C</sub> =(–)5mA, R <sub>BE</sub> =∞ | (–)100  |     |     | V    |
| Emitter-to-Base Breakdown Voltage      | V(BR)EBO              | I <sub>C</sub> =(-)1mA, I <sub>C</sub> =0  | (–)6    |     |     | V    |

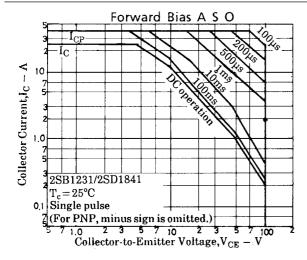
<sup>\*</sup>: For the  $h_{\mbox{\scriptsize FE}}1$  of the 2SB1231/2SD1841, specify at least two ranks in principle.

| 50 P 100 | 70 Q 140 |
|----------|----------|
|----------|----------|



### 2SB1231/2SD1841





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