

|              |                                                                                                  |                |
|--------------|--------------------------------------------------------------------------------------------------|----------------|
| <b>SANYO</b> | No.3686A                                                                                         | <b>2SA1831</b> |
|              | PNP Triple Diffused Planar Silicon Transistor<br><b>High-Voltage Amp, High-Voltage Switching</b> |                |

**Features**

- High breakdown voltage ( $V_{CEO \text{ min}} = -800V$ ).
- Small  $c_{ob}$  ( $c_{ob \text{ typ}} = 1.6pF$ ).
- High reliability (Adoption of HVP processes).

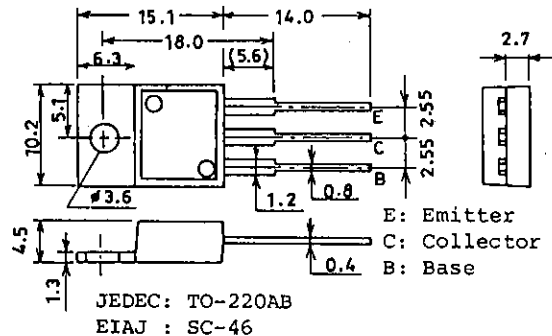
**Absolute Maximum Ratings at  $T_a = 25^\circ C$**

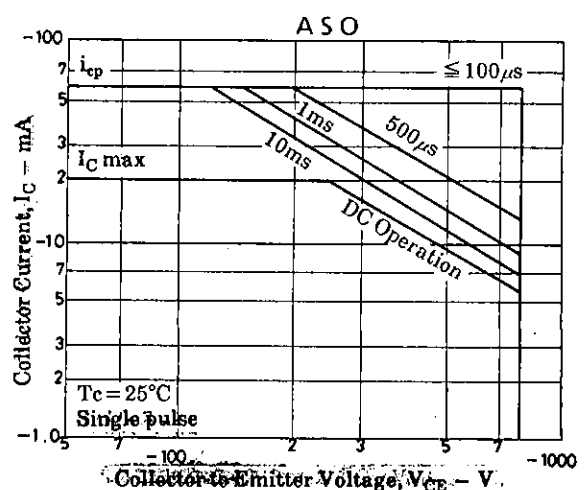
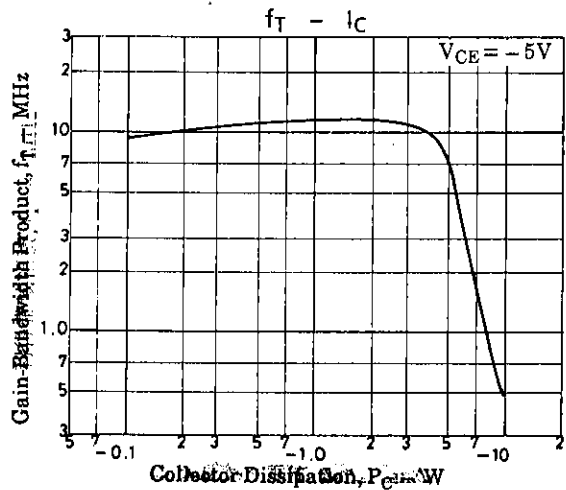
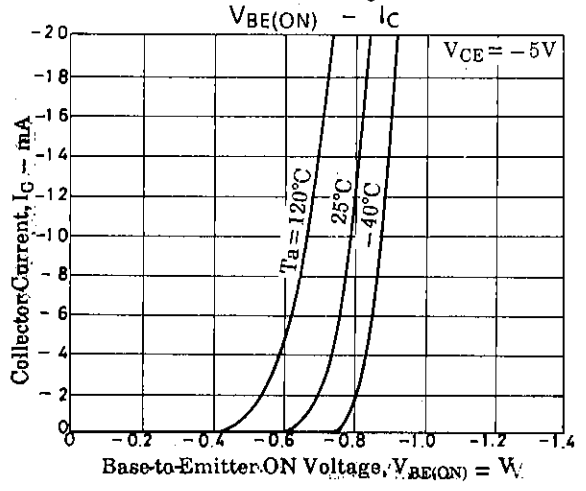
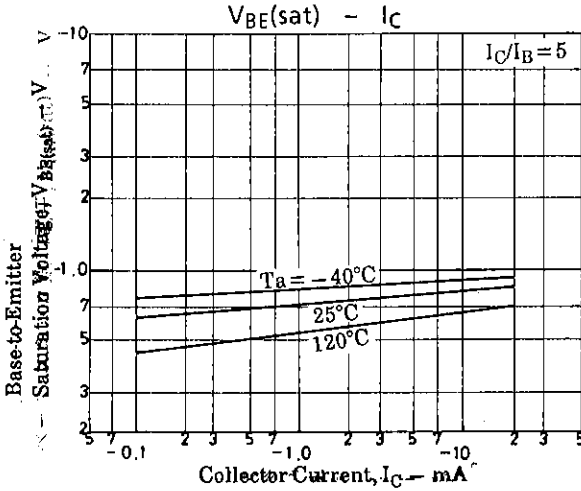
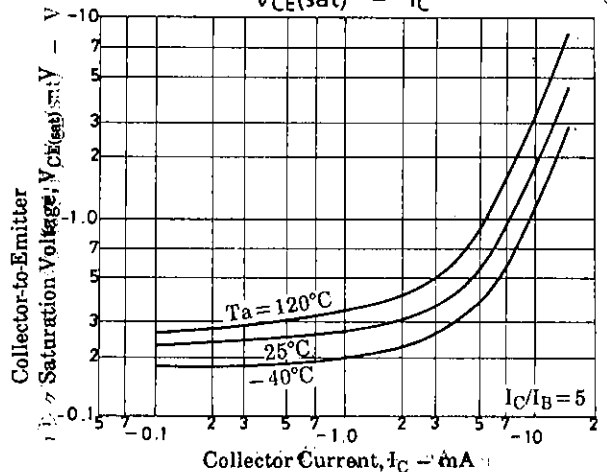
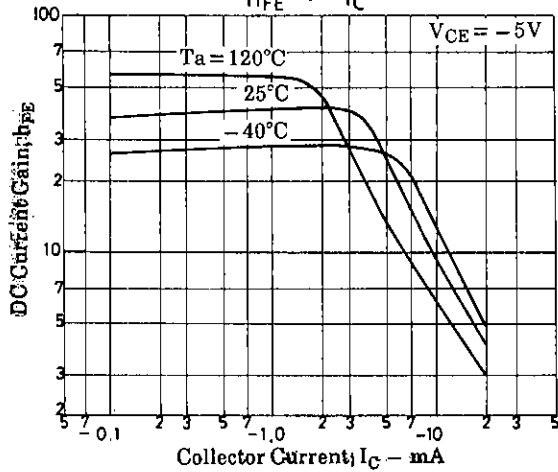
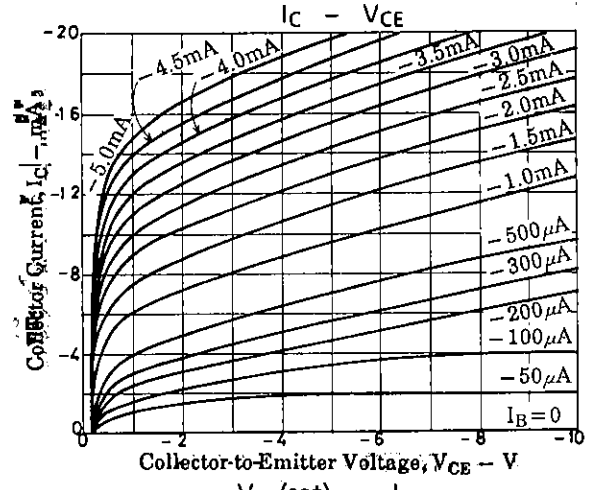
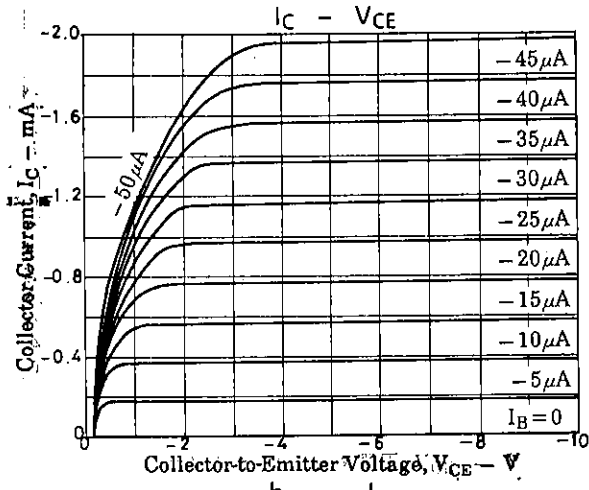
|                              |           |             | unit       |
|------------------------------|-----------|-------------|------------|
| Collector-to-Base Voltage    | $V_{CBO}$ | -800        | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ | -800        | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ | -7          | V          |
| Collector Current            | $I_C$     | -20         | mA         |
| Peak Collector Current       | $i_{cp}$  | -60         | mA         |
| Collector Dissipation        | $P_C$     | 1.75        | W          |
| Junction Temperature         | $T_j$     | 150         | $^\circ C$ |
| Storage Temperature          | $T_{stg}$ | -55 to +150 | $^\circ C$ |

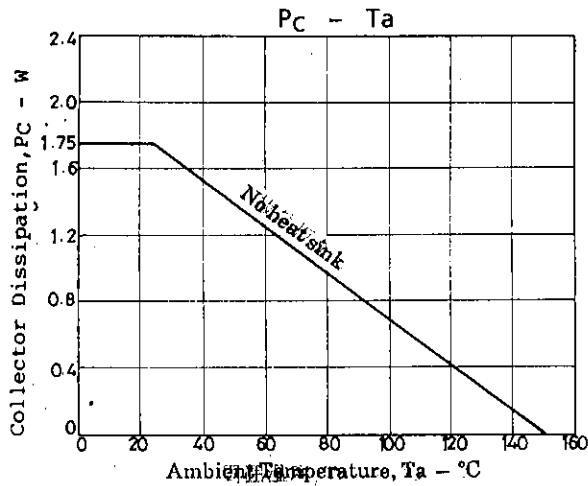
**Electrical Characteristics at  $T_a = 25^\circ C$**

|                          |               |                               | min  | typ | max  | unit         |
|--------------------------|---------------|-------------------------------|------|-----|------|--------------|
| Collector Cutoff Current | $I_{CBO}$     | $V_{CB} = -800V, I_E = 0$     |      |     | -1   | $\mu A$      |
| Emitter Cutoff Current   | $I_{EBO}$     | $V_{EB} = -5V, I_C = 0$       |      |     | -1   | $\mu A$      |
| DC Current Gain          | $h_{FE}$      | $V_{CE} = -5V, I_C = -2mA$    | 20   |     | 50   |              |
| Gain-Bandwidth Product   | $f_T$         | $V_{CE} = -10V, I_C = -2mA$   |      | 10  |      | MHz          |
| Output Capacitance       | $c_{ob}$      | $V_{CB} = -100V, f = 1MHz$    |      | 1.6 |      | pF           |
| C-E Saturation Voltage   | $V_{CE(sat)}$ | $I_C = -1mA, I_B = -200\mu A$ |      |     | -1   | V            |
| B-E Saturation Voltage   | $V_{BE(sat)}$ | $I_C = -1mA, I_B = -200\mu A$ |      |     | -1.5 | V            |
| C-B Breakdown Voltage    | $V_{(BR)CBO}$ | $I_C = -100\mu A, I_E = 0$    | -800 |     |      | V            |
| C-E Breakdown Voltage    | $V_{(BR)CEO}$ | $I_C = -1mA, R_{BE} = \infty$ | -800 |     |      | V            |
| E-B Breakdown Voltage    | $V_{(BR)EBO}$ | $I_E = -100\mu A, I_C = 0$    | -7   |     |      | V            |
| Thermal Resistance       | $R_{th(j-c)}$ | Junction - Case               |      |     | 8.3  | $^\circ C/W$ |

**Package Dimensions 2010B**  
(unit: mm)







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