



2SB1455/2SD2203

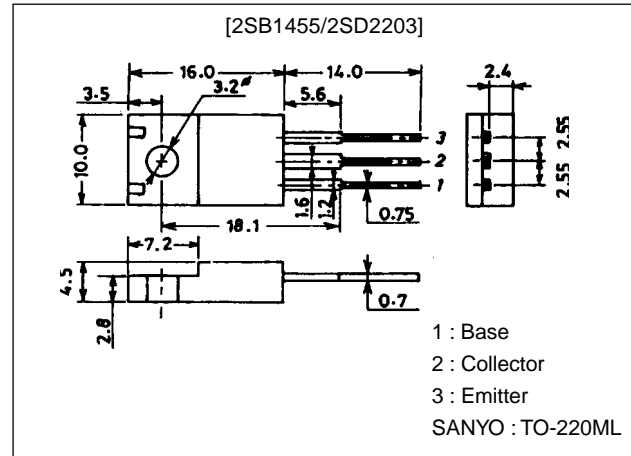
80V/7A High-Current Switching Applications

Features

- Low collector-to-emitter saturation voltage.
- Large current capacity.
- Micaless package facilitating easy mounting.

Package Dimensions

unit:mm
2041A



() : 2SB1455

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------|
| Collector-to-Base Voltage | V_{CB0} | | (-)-90 | V |
| Collector-to-Emitter Voltage | V_{CE0} | | (-)-80 | V |
| Emitter-to-Base Voltage | V_{EB0} | | (-)-6 | V |
| Collector Current | I_C | | (-)-7 | A |
| Collector Current (Pulse) | I_{CP} | | (-)-12 | A |
| Collector Dissipation | P_C | | 2.0 | W |
| | | $T_c=25^\circ\text{C}$ | 30 | W |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------------------|---------------|---------------------------------------------|---------|-----|---------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)80\text{V}, I_E = 0$ | | | (-)-0.1 | mA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)4\text{V}, I_C = 0$ | | | (-)-0.1 | mA |
| DC Current Gain | h_{FE1} | $V_{CE} = (-)2\text{V}, I_C = (-)1\text{A}$ | 70* | | 280* | |
| | h_{FE2} | $V_{CE} = (-)2\text{V}, I_C = (-)4\text{A}$ | 30 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$ | | 20 | | MHz |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = (-)4\text{A}, I_B = (-)0.4\text{A}$ | | | 0.4 | V |
| | | | | | (-)-0.5 | V |

* : The 2SB1455/2SD2203 are classified by 1A h_{FE} as follows :

| | | | | | | | | |
|----|---|-----|-----|---|-----|-----|---|-----|
| 70 | Q | 140 | 100 | R | 200 | 140 | S | 280 |
|----|---|-----|-----|---|-----|-----|---|-----|

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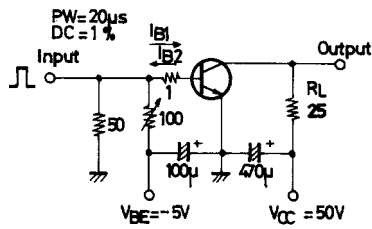
SANYO Electric Co., Ltd. Semiconductor Business Headquarters

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2SB1455/2SD2203

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|----------------------------------------|---------------|---------------------------------|---------|-------|-----|---------|
| | | | min | typ | max | |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = (-)1mA, I_E = 0$ | (-)90 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = (-)1mA, R_{BE} = \infty$ | (-)80 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = (-)1mA, I_C = 0$ | (-)6 | | | V |
| Turn-ON Time | t_{on} | See specified test circuit. | | (0.2) | | μs |
| | | | | 0.1 | | μs |
| Storage Time | t_{stg} | See specified test circuit. | | (0.7) | | μs |
| | | | | 1.6 | | μs |
| Fall Time | t_f | See specified test circuit. | | (0.2) | | μs |
| | | | | 0.4 | | μs |

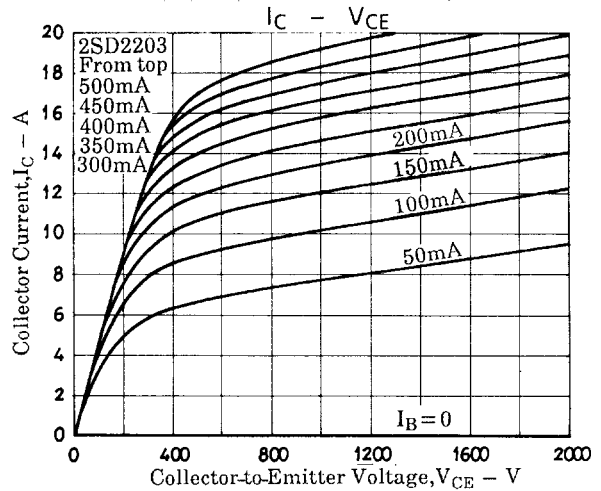
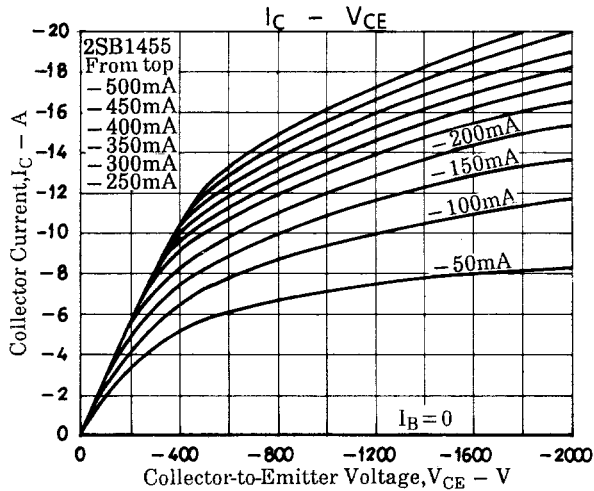
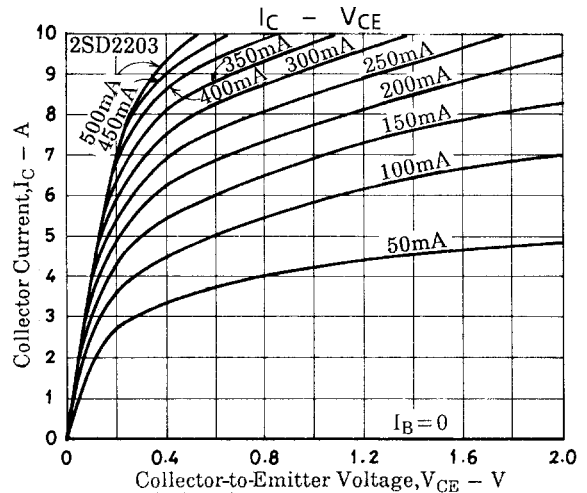
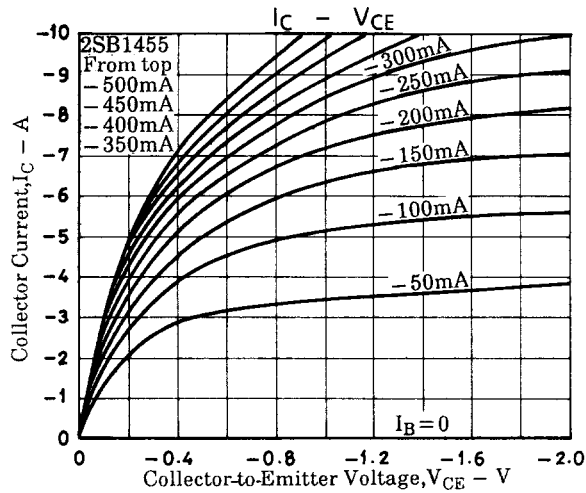
Switching Time Test Circuit



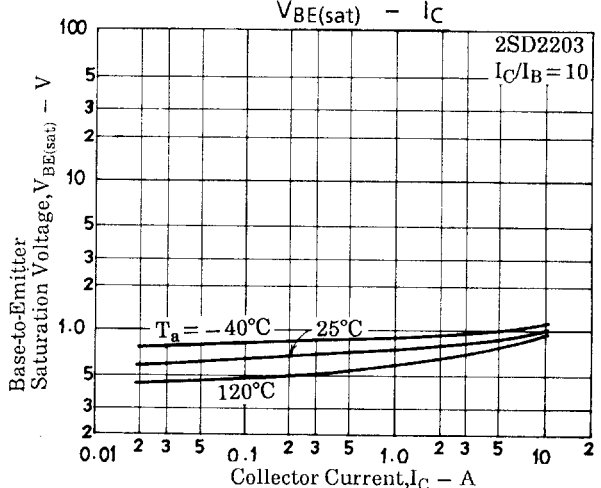
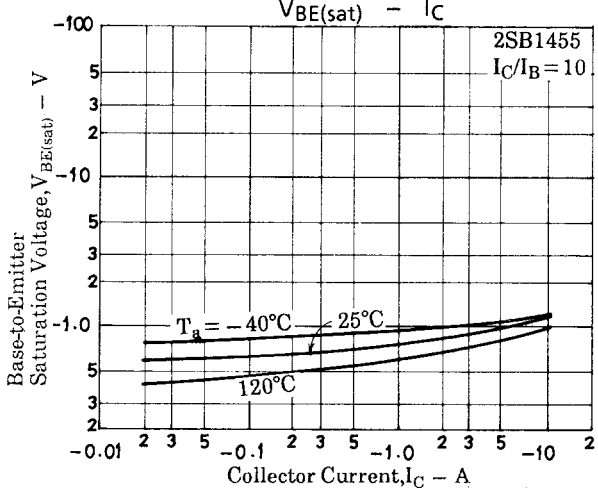
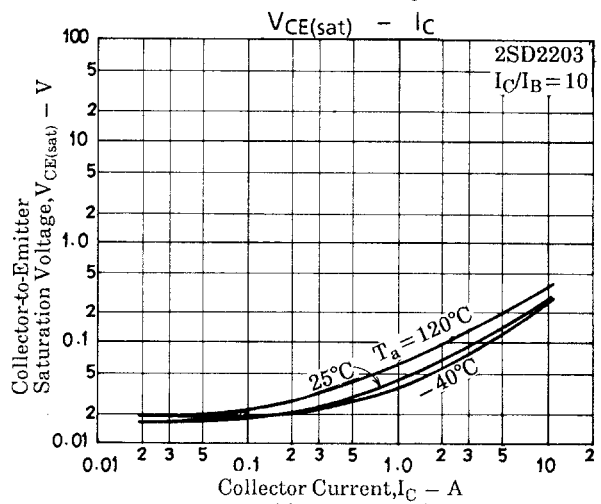
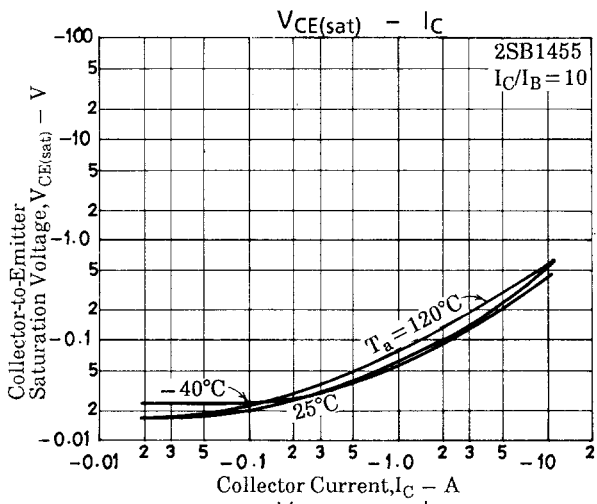
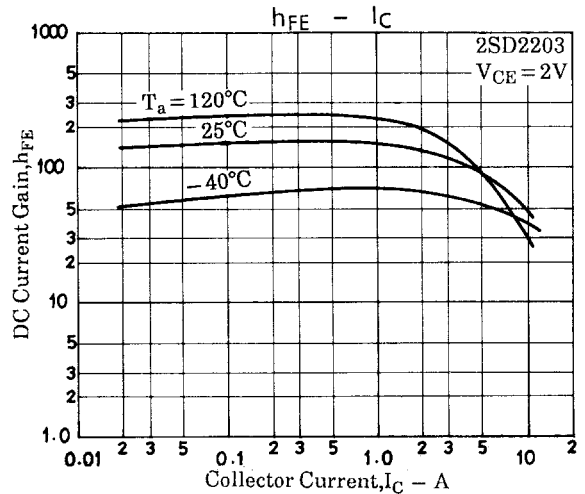
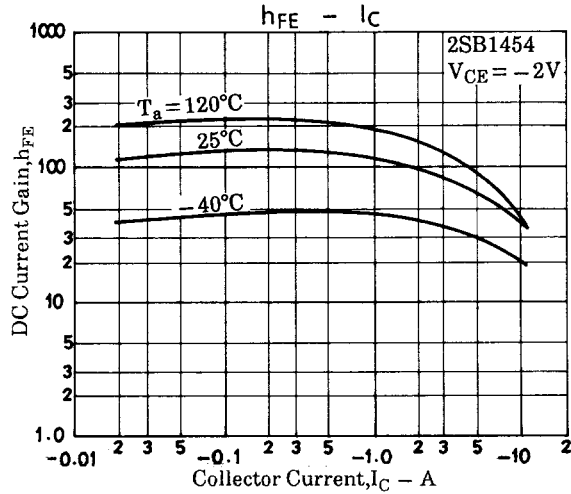
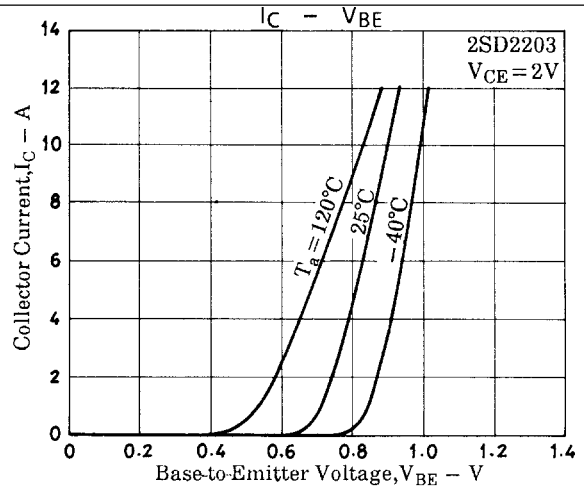
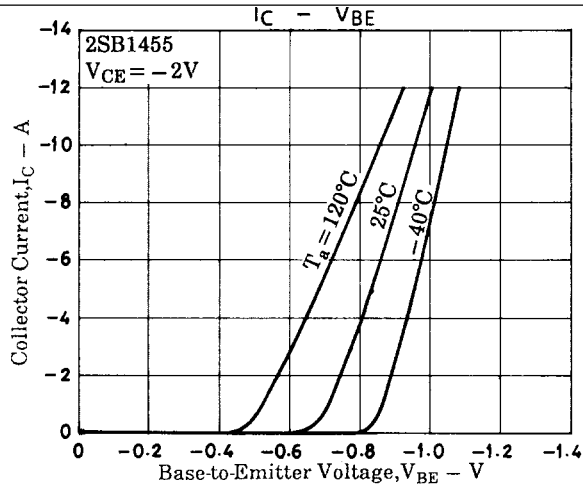
$$10 I_{B1} = -10 I_{B2} = I_C = 2A$$

For PNP, the polarity is reversed.

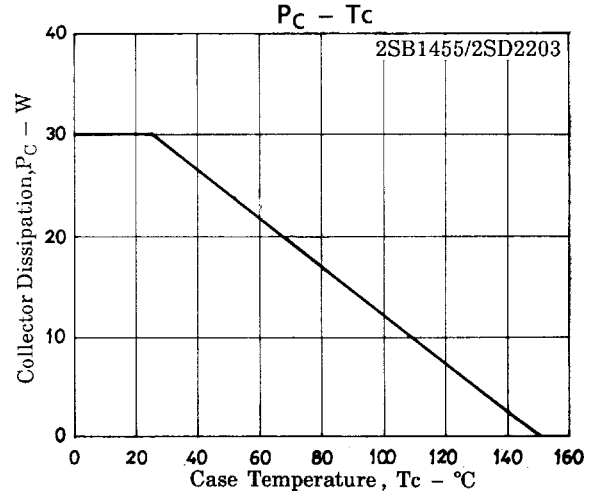
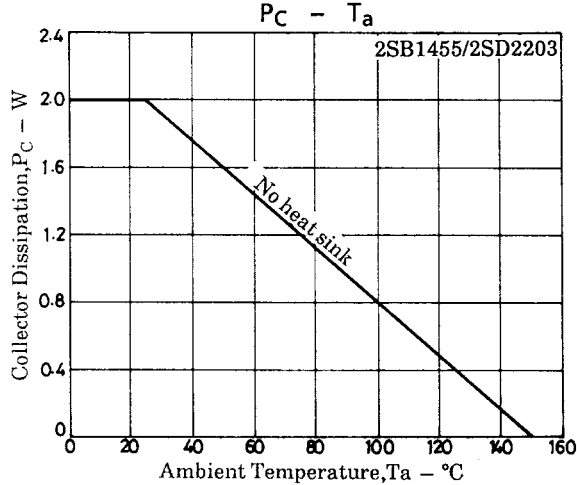
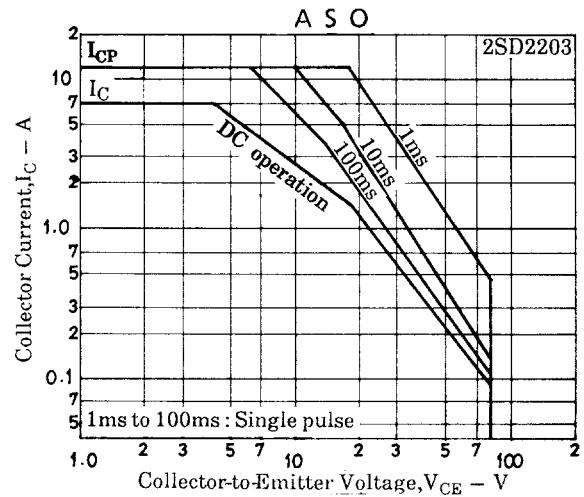
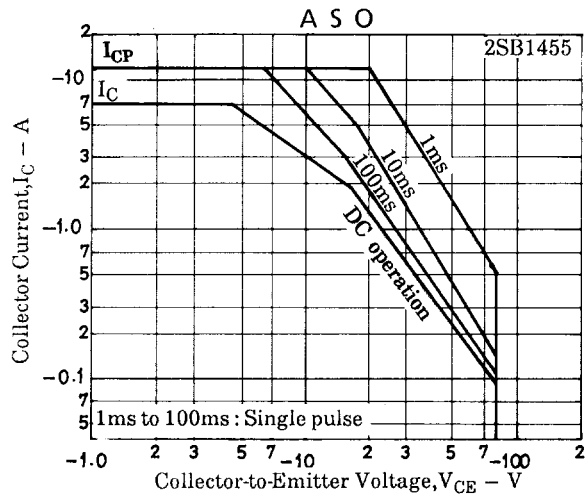
Unit (resistance : Ω , capacitance : F)



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