



2SA1772/2SC4615

High-Voltage Driver Applications

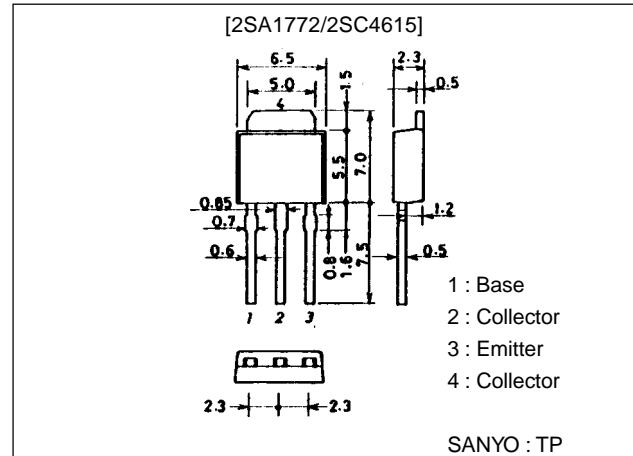
Features

- Large current capacity ($I_C=1A$).
- High breakdown voltage ($V_{CEO} \geq 400V$).

Package Dimensions

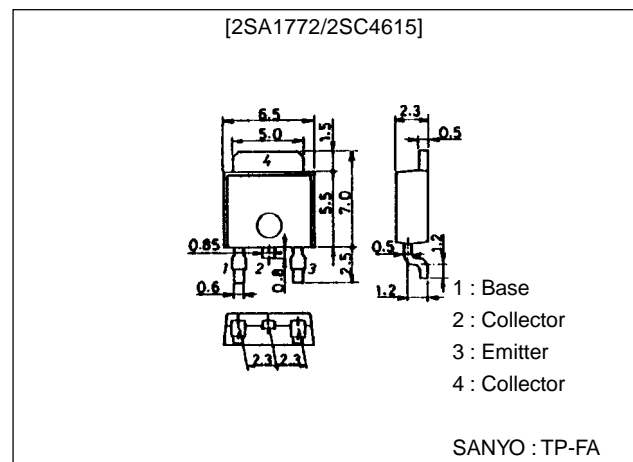
unit:mm

2045B



unit:mm

2044B



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() : 2SA1772

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CBO} | | (-)400 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)400 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)5 | V |
| Collector Current | I_C | | (-)1 | A |
| Collector Current (Pulse) | I_{CP} | | (-)2 | A |
| Collector Dissipation | P_C | | 1 | W |
| | | $T_c=25^\circ\text{C}$ | 15 | W |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

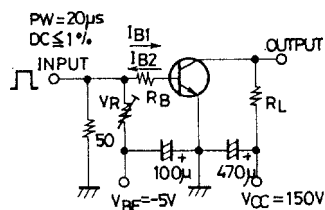
Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|--------|--------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=(-)300\text{V}, I_E=0$ | | | (-)1.0 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=(-)4\text{V}, I_C=0$ | | | (-)1.0 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=(-)10\text{V}, I_C=(-)100\text{mA}$ | 40* | | 200* | |
| Gain-Bandwidth Product | f_T | $V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$ | | (50)70 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=(-)30\text{V}, f=1\text{MHz}$ | | (12)8 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)200\text{mA}, I_B=(-)20\text{mA}$ | | | (-)1.0 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)200\text{mA}, I_B=(-)20\text{mA}$ | | | (-)1.0 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu\text{A}, I_E=0$ | (-)400 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1\text{mA}, R_{BE}=\infty$ | (-)400 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=(-)10\mu\text{A}, I_C=0$ | (-)5 | | | V |
| Turn-ON Time | t_{on} | See specified Test Circuit | | (0.25) | | μs |
| | | | | 0.11 | | μs |
| Storage Time | t_{stg} | See specified Test Circuit | | (3.0) | | μs |
| | | | | 4.0 | | μs |
| Fall Time | t_f | See specified Test Circuit | | (0.3) | | μs |
| | | | | 0.65 | | μs |

* : The 2SA1772/2SC4615 are classified by 100mA h_{FE} as follows :

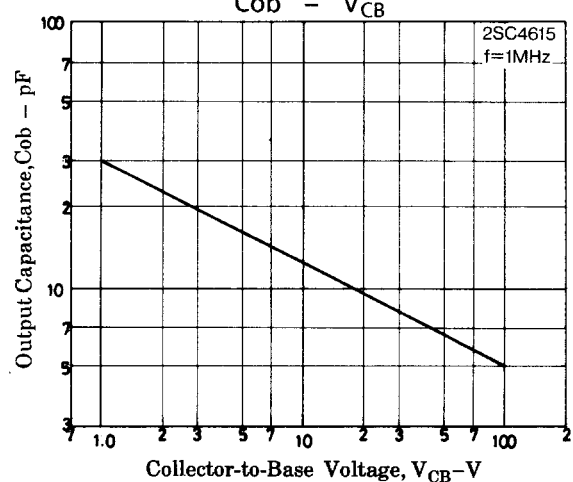
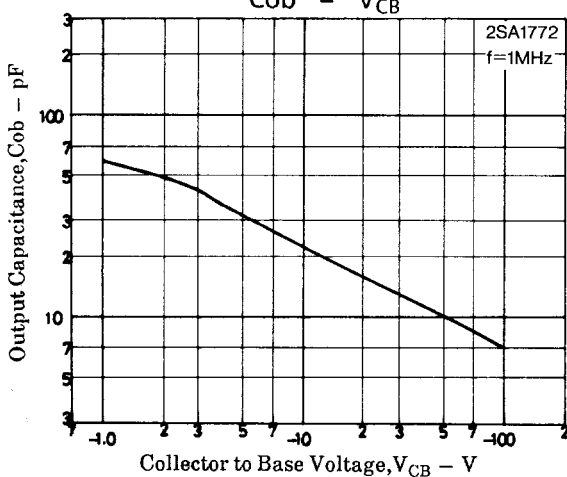
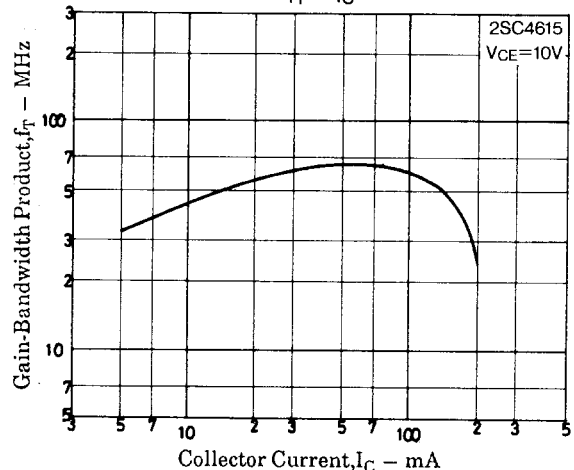
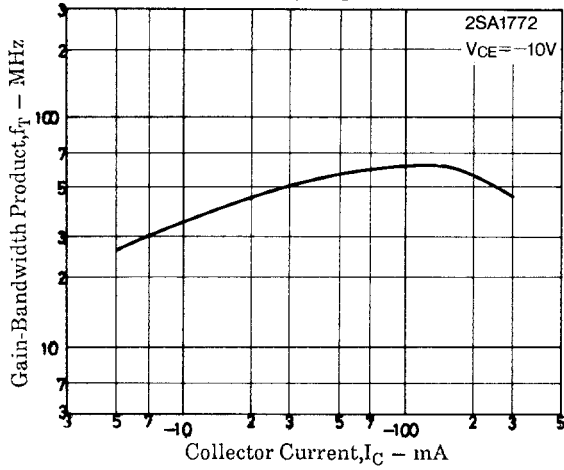
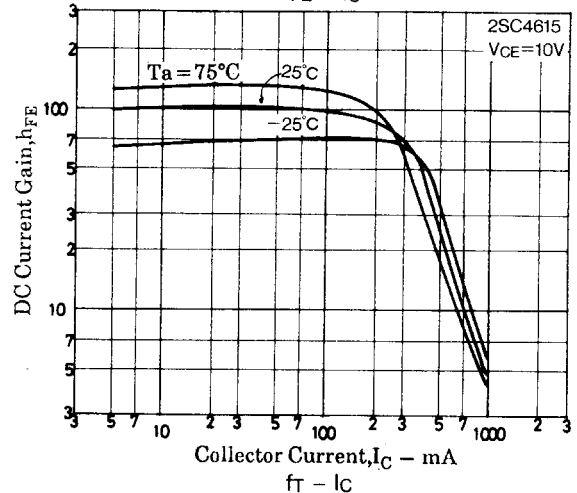
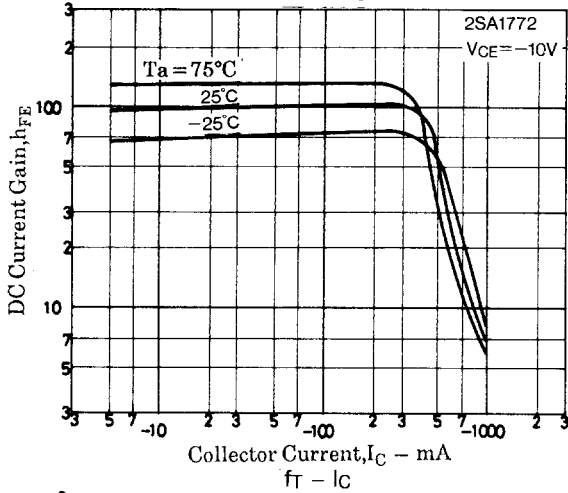
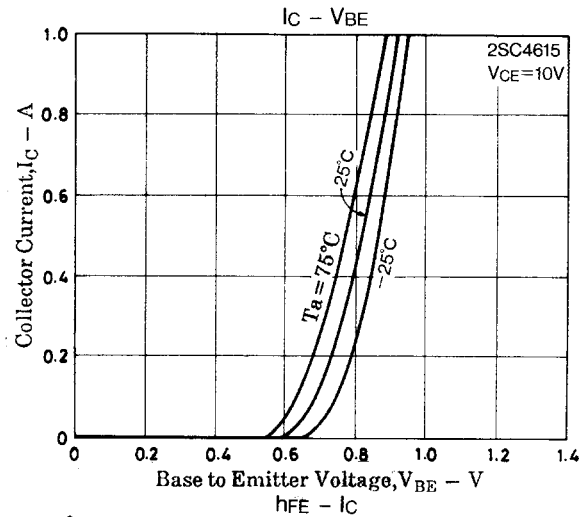
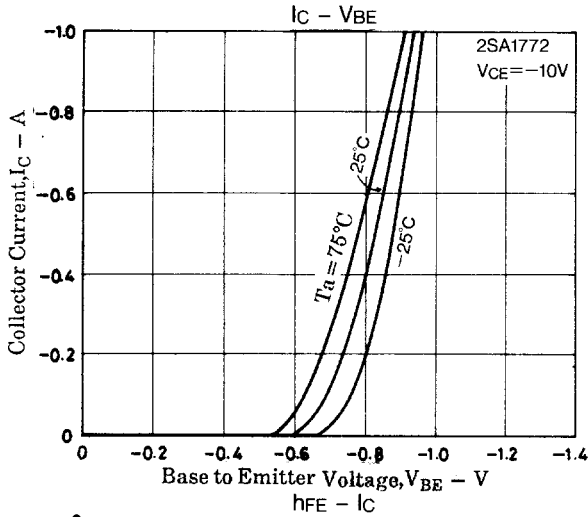
| | | | | | | | | |
|----|---|----|----|---|-----|-----|---|-----|
| 40 | C | 80 | 60 | D | 120 | 100 | E | 200 |
|----|---|----|----|---|-----|-----|---|-----|

Switching Time Test Circuit

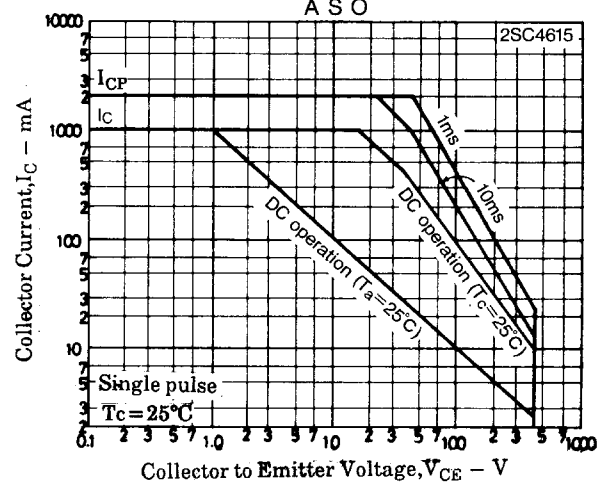
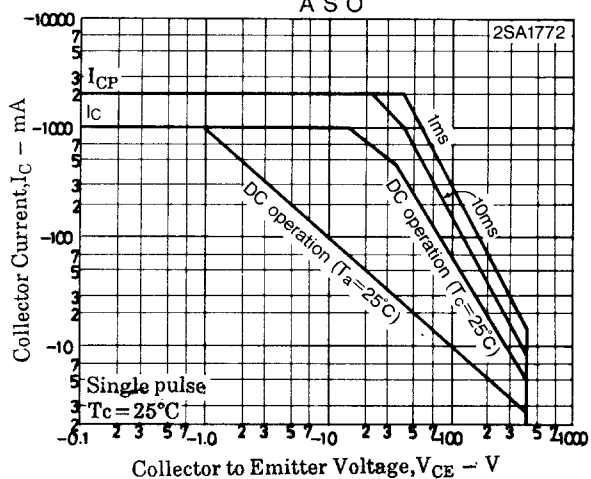
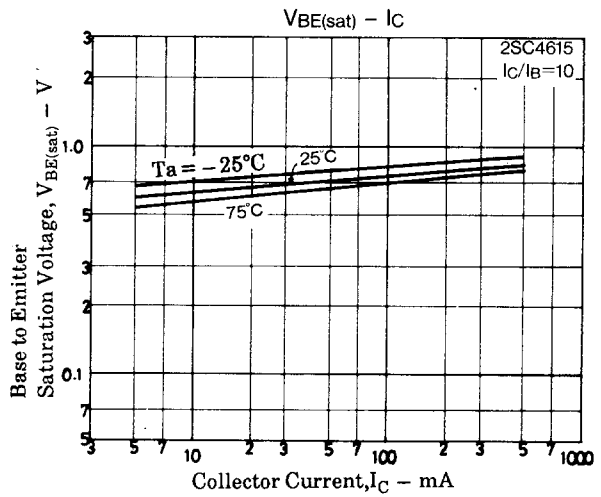
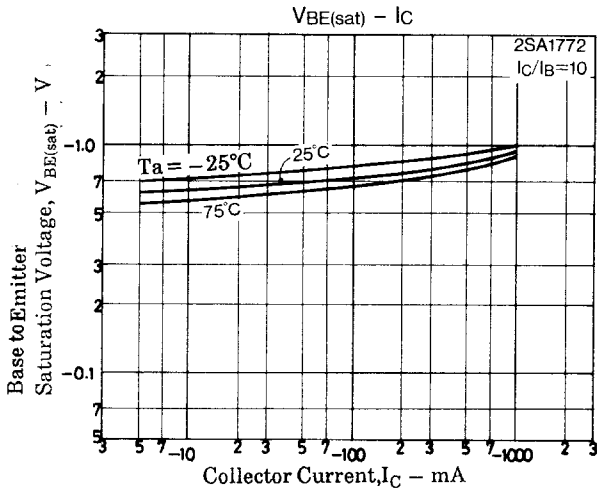
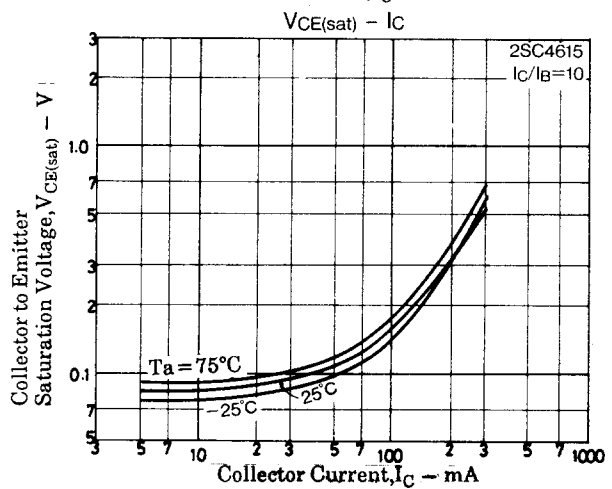
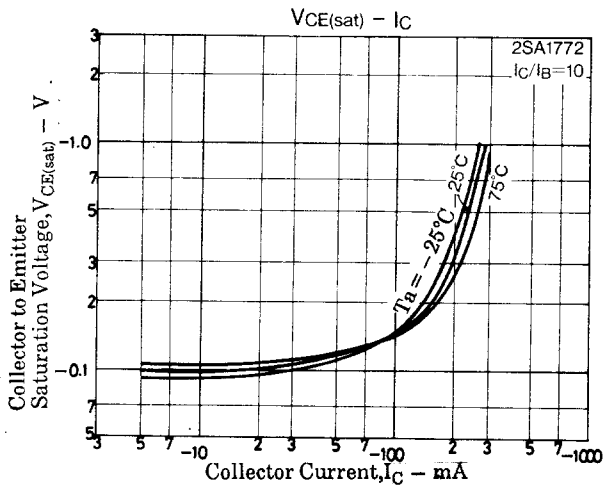
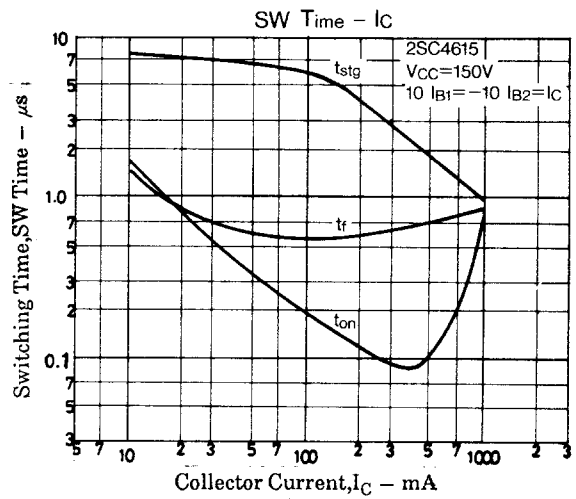
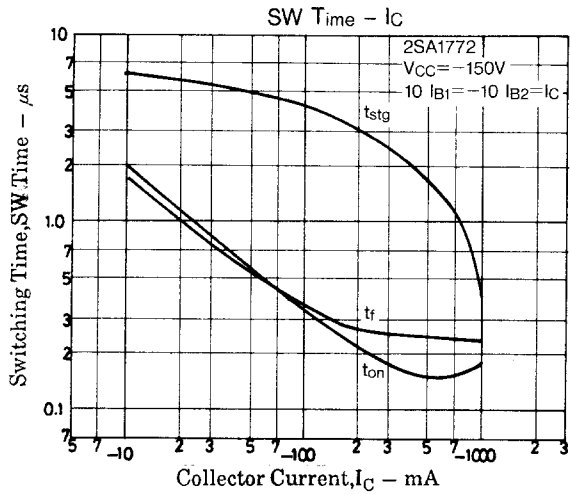


$10I_{B1} = -10I_{B2} = I_C = 200\text{mA}$
 $R_L = 750\Omega, R_B = 50\Omega, \text{ at } I_C = 200\text{mA}$
 (For PNP, the polarity is reversed.)
 Unit (resistance : Ω , capacitance : F)

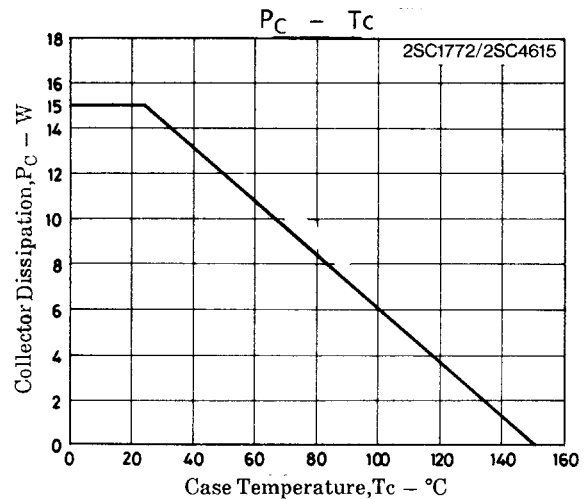
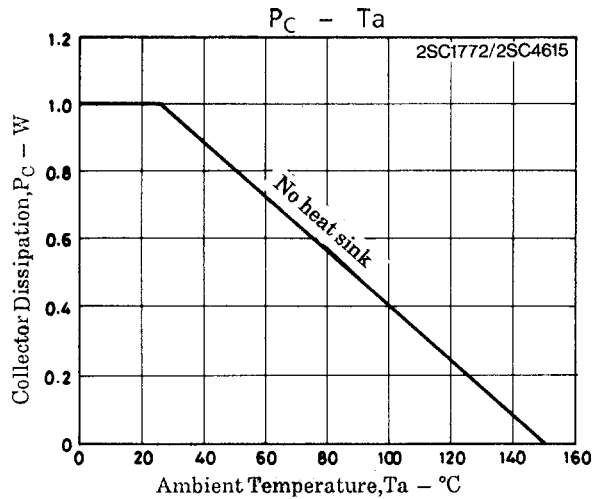
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