



## 2SB775/2SD895

### 85V/6A, AF 35W Output Applications

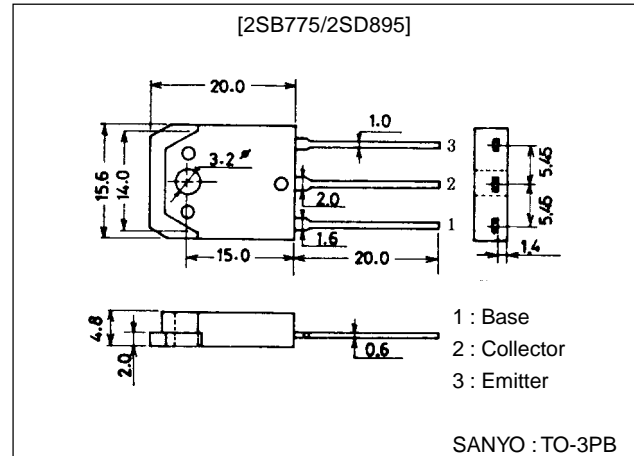
#### Features

- Wide ASO because of on-chip ballast resistance.
- Capable of being mounted easily because of one-point fixing type plastic molded package (Interchangeable with TO-3).
- Large current capacity :  $I_C=6A$
- Highly resistance breakdown due to wide ASO.

#### Package Dimensions

unit:mm

2022A



() : 2SB775

#### Specifications

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

| Parameter                    | Symbol    | Conditions       | Ratings     | Unit       |
|------------------------------|-----------|------------------|-------------|------------|
| Collector-to-Base Voltage    | $V_{CBO}$ |                  | (-100)      | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ |                  | (-85)       | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ |                  | (-6)        | V          |
| Collector Current            | $I_C$     |                  | (-6)        | A          |
| Collector Current (Pulse)    | $I_{CP}$  |                  | (-10)       | A          |
| Collector Dissipation        | $P_C$     | $T_c=25^\circ C$ | 60          | W          |
| Junction Temperature         | $T_J$     |                  | 150         | $^\circ C$ |
| Storage Temperature          | $T_{stg}$ |                  | -40 to +150 | $^\circ C$ |

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

| Parameter                               | Symbol        | Conditions                | Ratings |        |        | Unit |
|---|---------------|---------------------------|---------|--------|--------|------|
|   |               |                           | min     | typ    | max    |      |
| Collector Cutoff Current                | $I_{CBO}$     | $V_{CB}=(-)40V, I_E=0$    |         |        | (-0.1) | mA   |
| Emitter Cutoff Current                  | $I_{EBO}$     | $V_{EB}=(-)4V, I_C=0$     |         |        | (-0.1) | mA   |
| DC Current Gain                         | $h_{FE1}$     | $V_{CE}=(-)5V, I_C=(-)1A$ | 60*     |        | 200*   |      |
|   | $h_{FE2}$     | $V_{CE}=(-)5V, I_C=(-)3A$ | 20      |        |        |      |
| Gain-Bandwidth Product                  | $f_T$         | $V_{CE}=(-)5V, I_C=(-)1A$ |         | (18)15 |        | MHz  |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=(-)10V, f=1MHz$   |         | 160    |        | pF   |
| Base-to-Emitter Voltage                 | $V_{BE}$      | $V_{CE}=(-)5V, I_C=(-)1A$ |         |        | (-1.5) | V    |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)4A, I_B=(-)0.4A$  |         |        | (-1.4) | V    |
|   |               |                           |         |        | (-2.0) | V    |
|   |               |                           | 0.9     | 2.0    |        | V    |

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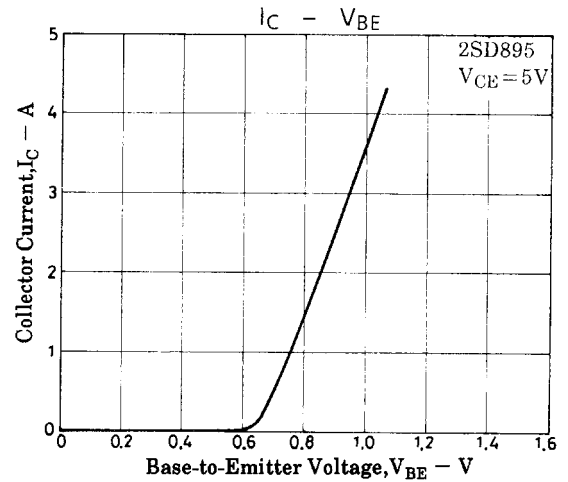
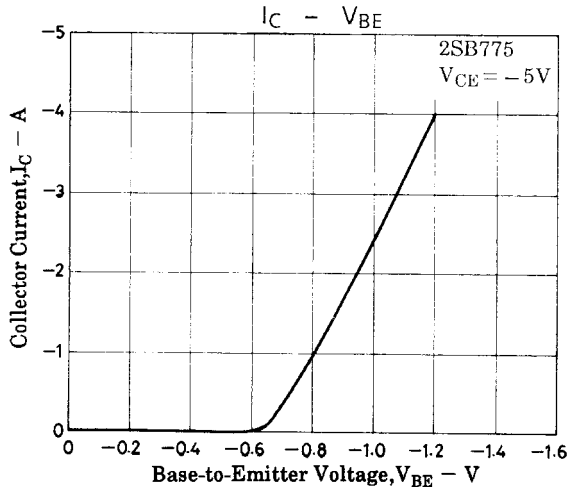
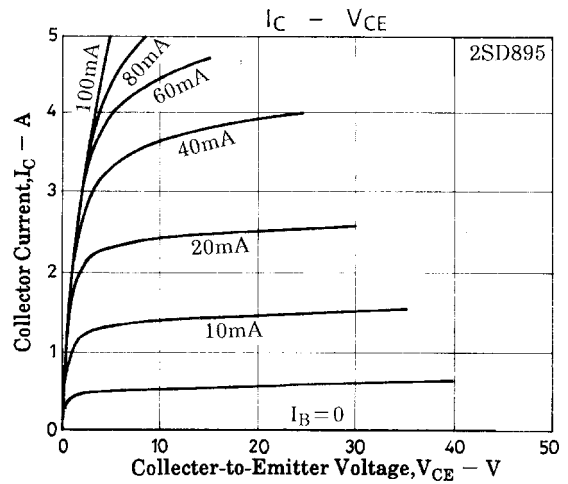
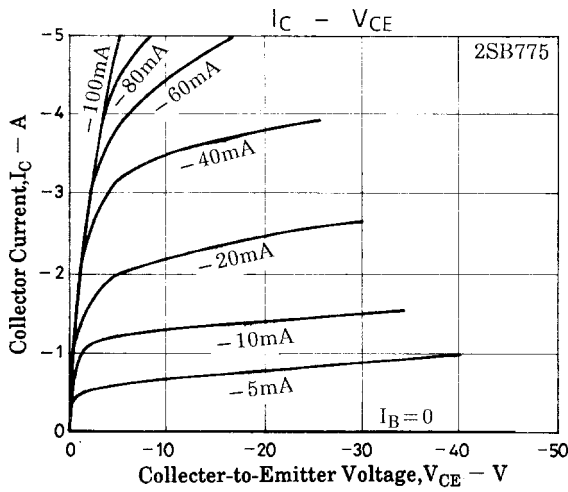
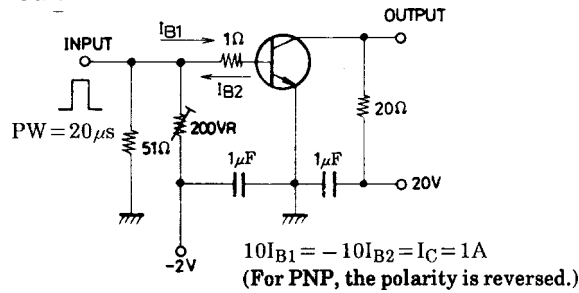
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| Parameter                              | Symbol        | Conditions                       | Ratings |        |     | Unit    |
|--|---------------|----------------------------------|---------|--------|-----|---------|
|  |               |                                  | min     | typ    | max |         |
| Collector-to-Base Breakdown Voltage    | $V_{(BR)CBO}$ | $I_C = (-)5mA, I_E = 0$          | (-)100  |        |     | V       |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = (-)5mA, R_{BE} = \infty$  | (-)85   |        |     | V       |
|  |               | $I_C = (-)50mA, R_{BE} = \infty$ | (-)85   |        |     | V       |
| Emitter-to-Base Breakdown Voltage      | $V_{(BR)EBO}$ | $I_E = (-)5mA, I_C = 0$          | (-)6    |        |     | V       |
| Turn-ON Time                           | $t_{on}$      | See specified Test Circuit       |         | (0.12) |     | $\mu s$ |
| Storage Time                           | $t_{stg}$     | See specified Test Circuit       |         | 0.20   |     | $\mu s$ |
|  |               |                                  |         | (0.36) |     | $\mu s$ |
| Fall Time                              | $t_f$         | See specified Test Circuit       |         | 0.82   |     | $\mu s$ |
|  |               |                                  |         | (1.29) |     | $\mu s$ |
|  |               |                                  |         | 3.88   |     | $\mu s$ |

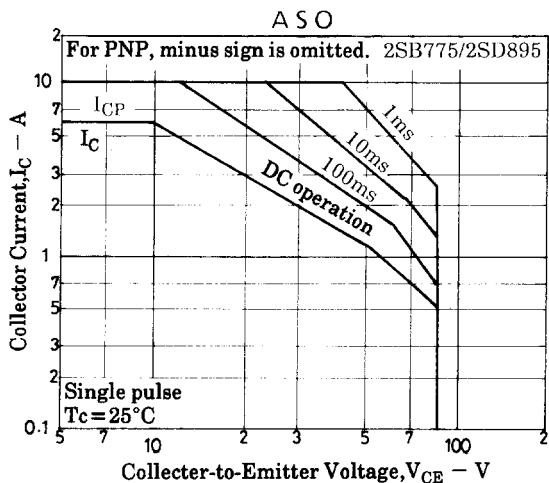
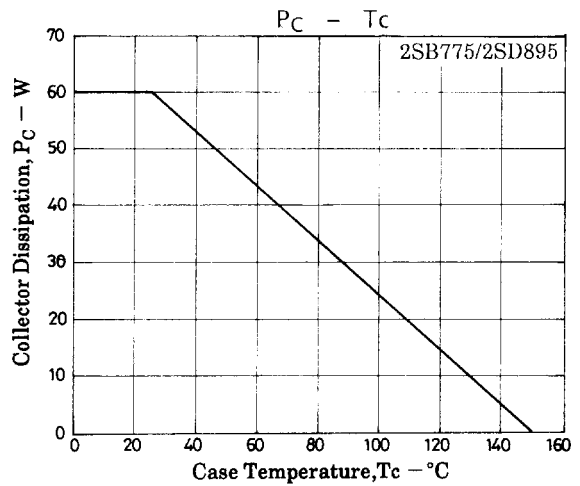
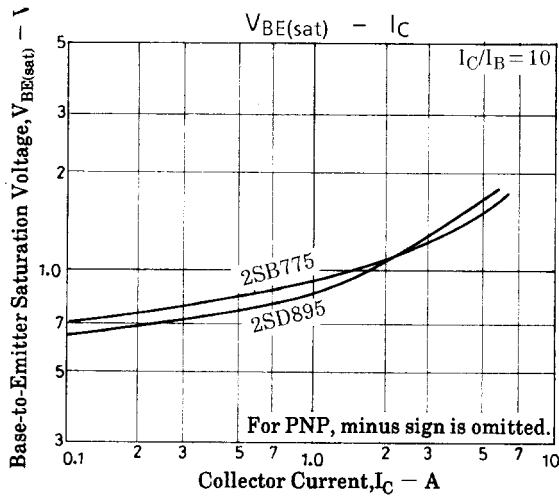
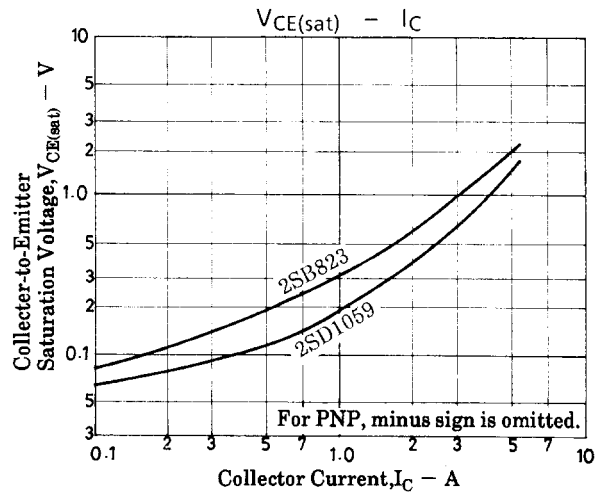
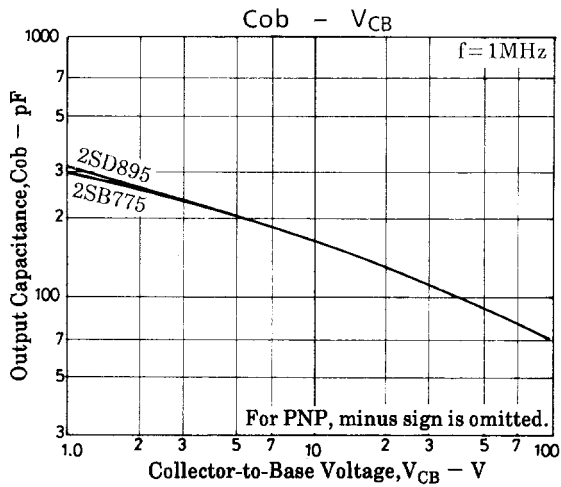
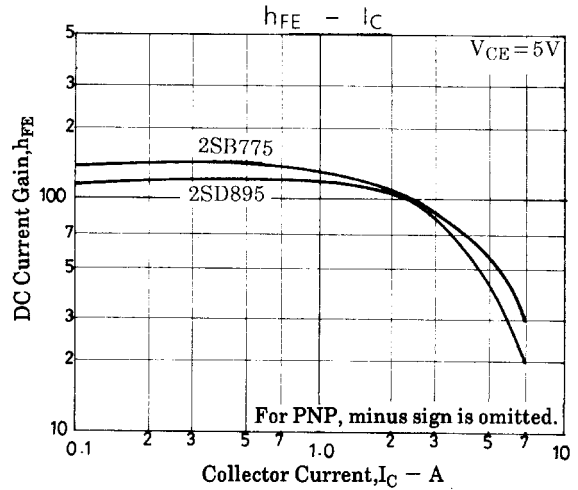
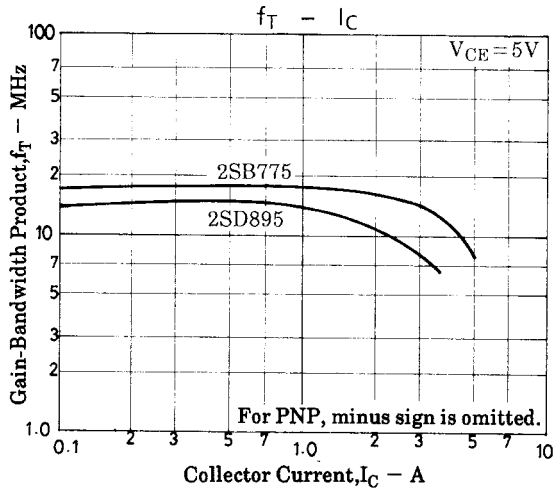
\* : The 2SB775/2SD895 are classified by  $1A h_{FE}$  as follows :

|    |   |     |     |   |     |
|----|---|-----|-----|---|-----|
| 60 | D | 120 | 100 | E | 200 |
|----|---|-----|-----|---|-----|

## Switching Time Test Circuit



# 2SB775/2SD895



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