

## GJSD1802      NPN EPITAXIAL PLANAR SILICON TRANSISTOR

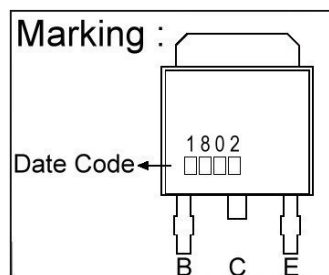
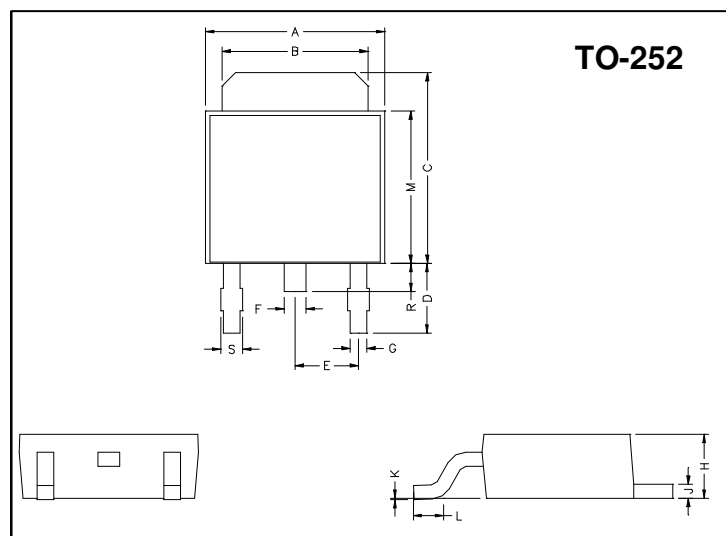
### Description

The GJSD1802 applies to voltage regulators, relay drivers, lamp drivers, and electrical equipment.

### Features

- \*Adoption of FBET, MBIT processes
- \*Large current capacity and wide ASO
- \*Low collector-to-emitter saturation voltage
- \*Fast switching speed

### Package Dimensions



| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 6.40       | 6.80 | G    | 0.50       | 0.70 |
| B    | 5.20       | 5.50 | H    | 2.20       | 2.40 |
| C    | 6.80       | 7.20 | J    | 0.45       | 0.55 |
| D    | 2.40       | 3.00 | K    | 0          | 0.15 |
| E    | 2.30 REF.  |      | L    | 0.90       | 1.50 |
| F    | 0.70       | 0.90 | M    | 5.40       | 5.80 |
| S    | 0.60       | 0.90 | R    | 0.80       | 1.20 |

### Absolute Maximum Ratings (Ta = 25°C, unless otherwise specified)

| Parameter                    | Symbol           | Ratings    | Unit |
|------------------------------|------------------|------------|------|
| Junction Temperature         | Tj               | +150       | °C   |
| Storage Temperature          | Tstg             | -55 ~ +150 | °C   |
| Collector to Base Voltage    | V <sub>CB0</sub> | 60         | V    |
| Collector to Emitter Voltage | V <sub>CEO</sub> | 50         | V    |
| Emitter to Base Voltage      | V <sub>EBO</sub> | 6          | V    |
| Collector Current(DC)        | I <sub>c</sub>   | 3          | A    |
| Collector Current(Pulse)     | I <sub>CP</sub>  | 6          | A    |
| Collector Dissipation        | P <sub>d</sub>   | 1          | W    |
|                              | Tc=25°C          | 20         | W    |

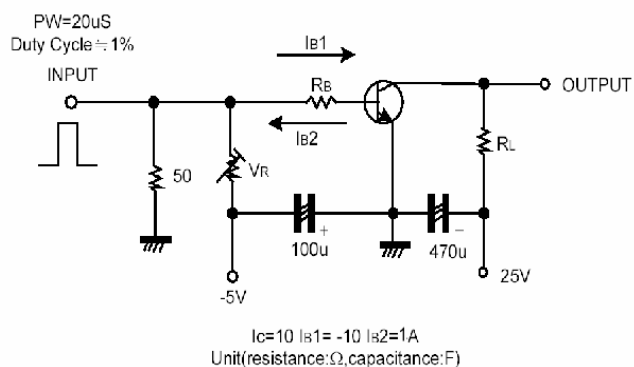
### Electrical Characteristics (Ta = 25°C unless otherwise specified)

| Symbol                | Min. | Typ. | Max. | Unit | Test Conditions                            |
|-----------------------|------|------|------|------|--------------------------------------------|
| V(BR)CBO              | 60   | -    | -    | V    | I <sub>c</sub> =10uA, I <sub>E</sub> =0    |
| V(BR)CEO              | 50   | -    | -    | V    | I <sub>c</sub> =1mA, R <sub>BE</sub> =∞    |
| V(BR)EBO              | 6    | -    | -    | V    | I <sub>E</sub> =10uA, I <sub>c</sub> =0    |
| I <sub>CBO</sub>      | -    | -    | 1    | μA   | V <sub>CB</sub> =40V, I <sub>E</sub> =0    |
| I <sub>EBO</sub>      | -    | -    | 1    | μA   | V <sub>EB</sub> =4V, I <sub>c</sub> =0     |
| V <sub>CE</sub> (sat) | -    | 0.19 | 0.5  | V    | I <sub>c</sub> =2A, I <sub>B</sub> =0.1A   |
| V <sub>BE</sub> (sat) | -    | 0.94 | 1.2  | V    | I <sub>c</sub> =2A, I <sub>B</sub> =0.1A   |
| h <sub>FE1</sub>      | 100  | -    | 560  |      | V <sub>CE</sub> =2V, I <sub>c</sub> =0.1A  |
| h <sub>FE2</sub>      | 35   | -    | -    |      | V <sub>CE</sub> =2V, I <sub>c</sub> =3A    |
| f <sub>T</sub>        | -    | 150  | -    | MHZ  | V <sub>CE</sub> =10V, I <sub>c</sub> =50mA |
| ton                   | -    | 70   | -    | ns   | See test circuit                           |
| tstg                  | -    | 650  | -    | ns   | See test circuit                           |
| tf                    | -    | 35   | -    | ns   | See test circuit                           |
| Cob                   | -    | 25   | -    | pF   | V <sub>CB</sub> =10V, f=1MHz               |

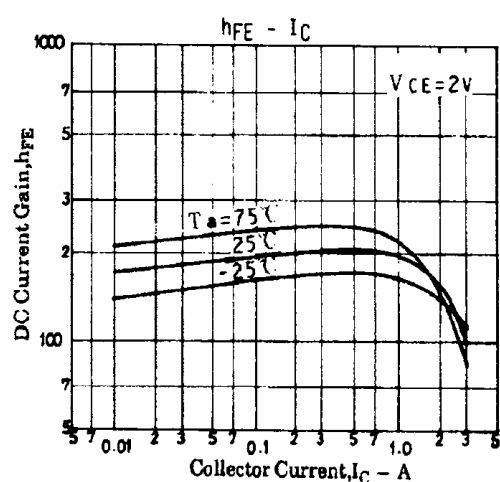
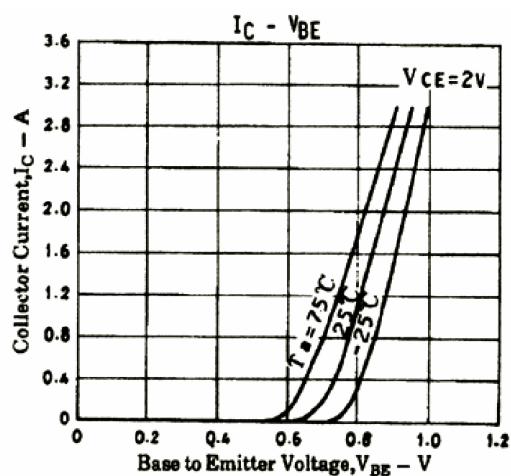
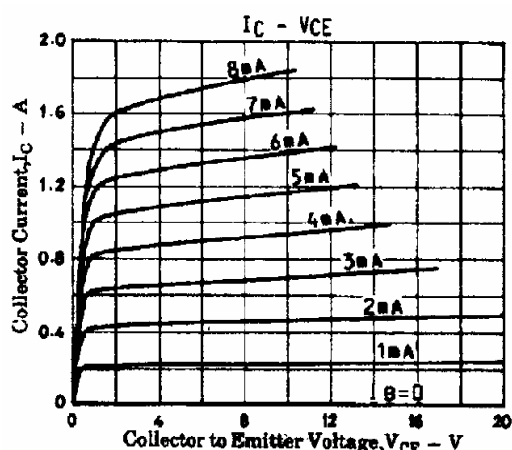
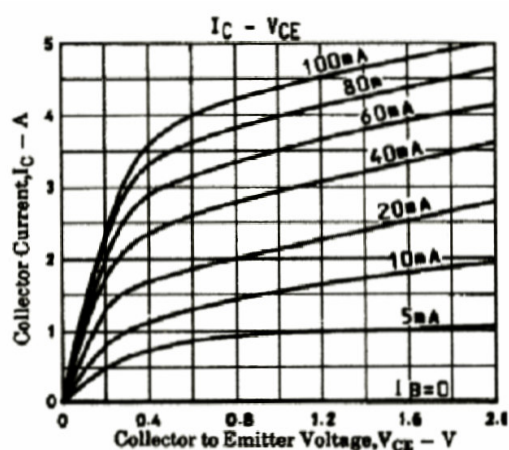
## Classification Of hFE1

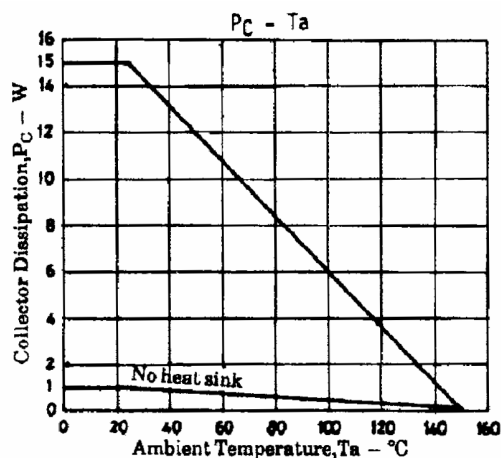
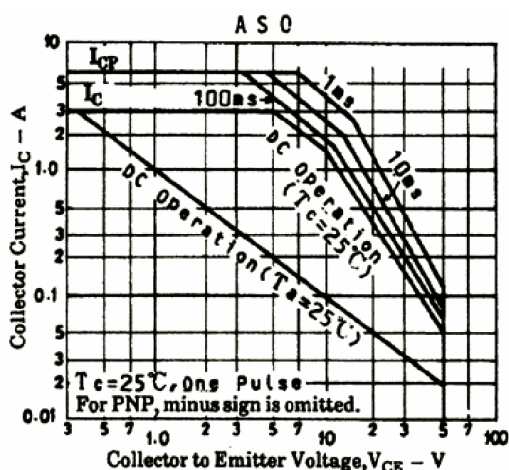
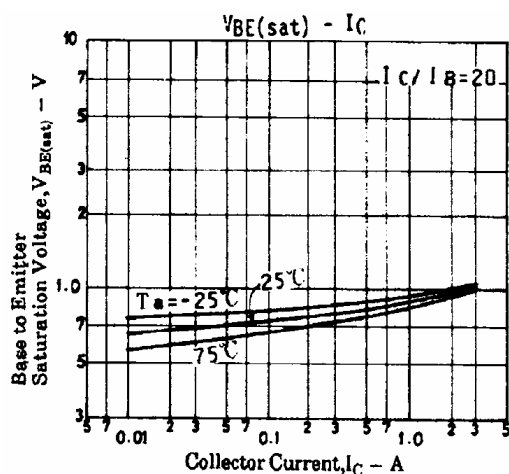
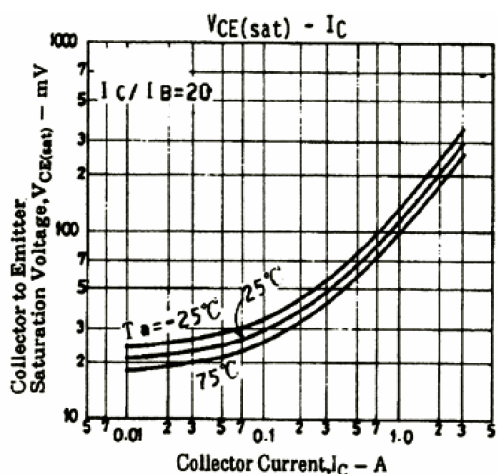
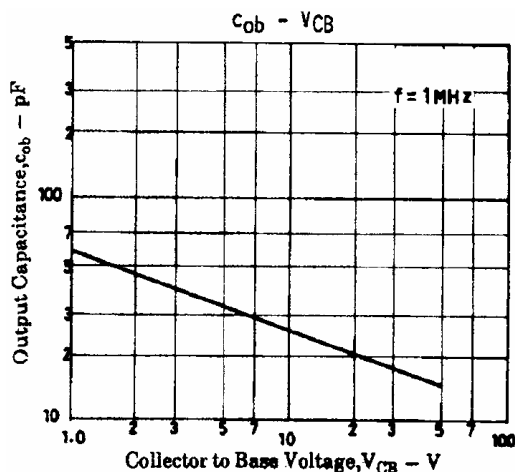
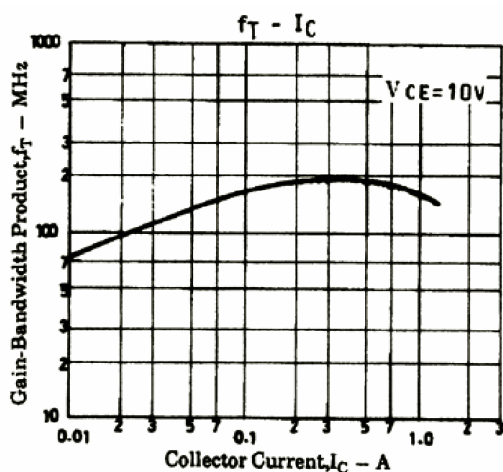
| Rank  | R         | S         | T         | U         |
|-------|-----------|-----------|-----------|-----------|
| Range | 100 ~ 200 | 140 ~ 280 | 200 ~ 400 | 280 ~ 560 |

## Switching Time Test Circuit



## Characteristics Curve





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