

# 2SD2453

## Silicon NPN triple diffusion planar type

For high current transfer ratio and power amplification

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- Low collector-emitter saturation voltage  $V_{CE(sat)}$

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol                         | Rating      | Unit             |
|---------------------------------------|--------------------------------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$                      | 80          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$                      | 60          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$                      | 6           | V                |
| Collector current                     | $I_C$                          | 2           | A                |
| Peak collector current *              | $I_{CP}$                       | 4           | A                |
| Base current                          | $I_B$                          | 1           | A                |
| Collector power dissipation           | $T_C = 25^\circ\text{C}$ $P_C$ | 10          | W                |
|                                       |                                | 1           |                  |
| Junction temperature                  | $T_j$                          | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$                      | -55 to +150 | $^\circ\text{C}$ |

Note) Non-repetitive peak collector current

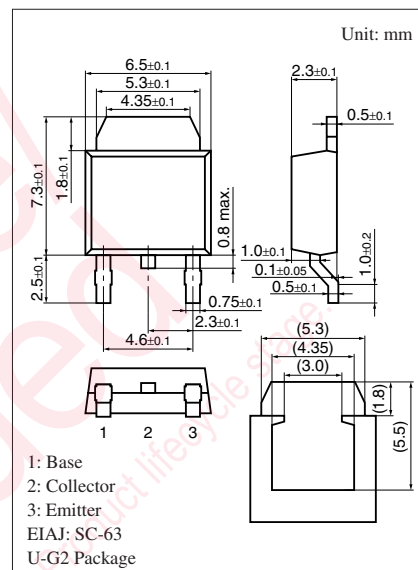
### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                                    | Symbol        | Conditions                                                          | Min | Typ | Max   | Unit          |
|----------------------------------------------|---------------|---------------------------------------------------------------------|-----|-----|-------|---------------|
| Collector-emitter voltage (Base open)        | $V_{CEO}$     | $I_C = 25\text{ mA}$ , $I_B = 0$                                    | 60  |     |       | V             |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$     | $V_{CB} = 80\text{ V}$ , $I_E = 0$                                  |     |     | 100   | $\mu\text{A}$ |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$     | $V_{CE} = 40\text{ V}$ , $I_B = 0$                                  |     |     | 100   | $\mu\text{A}$ |
| Emitter-base cutoff current (Collector open) | $I_{EBO}$     | $V_{EB} = 6\text{ V}$ , $I_C = 0$                                   |     |     | 100   | $\mu\text{A}$ |
| Forward current transfer ratio *             | $h_{FE}$      | $V_{CE} = 4\text{ V}$ , $I_C = 0.5\text{ A}$                        | 500 |     | 2 500 | —             |
| Collector-emitter saturation voltage         | $V_{CE(sat)}$ | $I_C = 2\text{ A}$ , $I_B = 0.05\text{ A}$                          |     |     | 1     | V             |
| Transition frequency                         | $f_T$         | $V_{CE} = 12\text{ V}$ , $I_C = 0.2\text{ A}$ , $f = 10\text{ MHz}$ |     | 50  |       | MHz           |

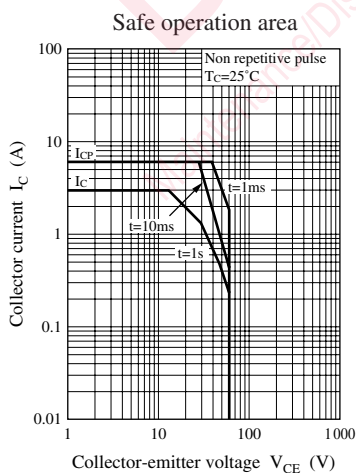
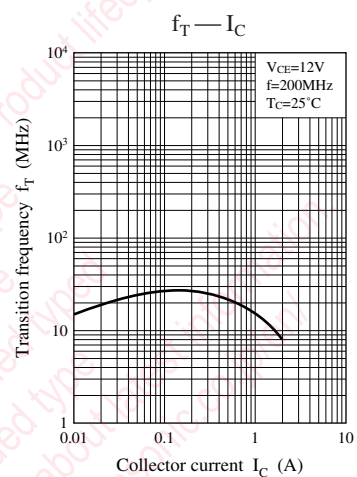
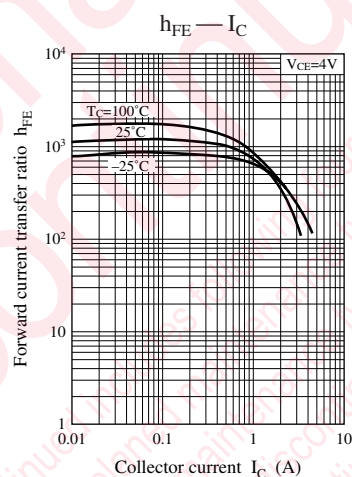
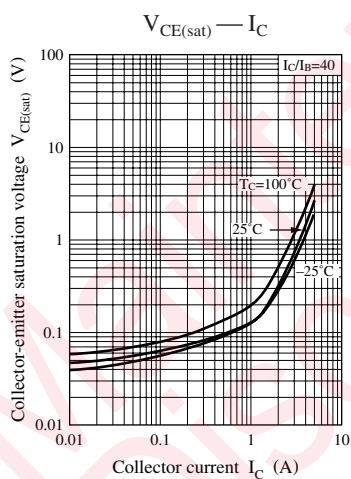
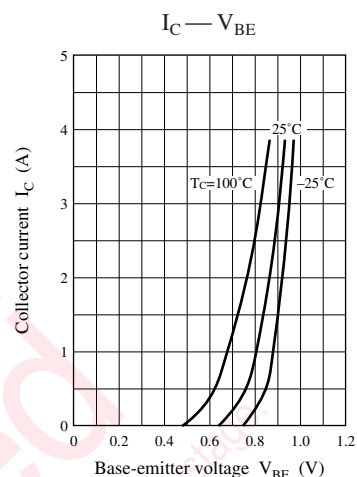
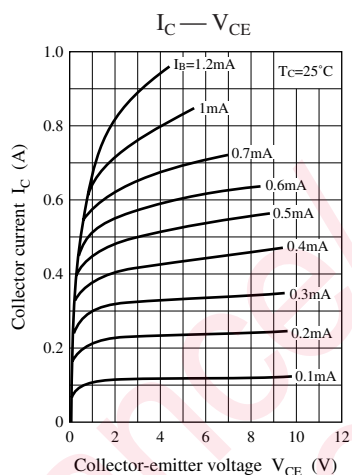
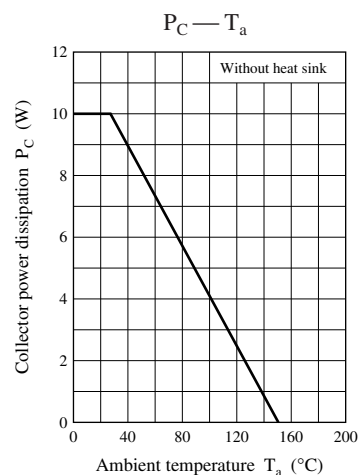
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

| Rank     | Q            | R            | S              |
|----------|--------------|--------------|----------------|
| $h_{FE}$ | 500 to 1 000 | 800 to 1 500 | 1 200 to 2 500 |



Note) Self-supported type package is also prepared.



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