

# Medium power transistor (80V, 0.7A)

## 2SD1767 / 2SD1859

### ●Features

- 1) High breakdown voltage,  $BV_{CEO}=80V$ , and high current,  $I_C=0.7A$ .
- 2) Complements the 2SB1189 / 2SB1238.

### ●Absolute maximum ratings ( $T_a=25^\circ C$ )

| Parameter                   | Symbol    | Limits   | Unit                   |
|-----------------------------|-----------|----------|------------------------|
| Collector-base voltage      | $V_{CB0}$ | 80       | V                      |
| Collector-emitter voltage   | $V_{CEO}$ | 80       | V                      |
| Emitter-base voltage        | $V_{EB0}$ | 5        | V                      |
| Collector current           | $I_C$     | 0.7      | A(DC)                  |
|                             |           | 1        | A(Pulse) <sup>+1</sup> |
| Collector power dissipation | $P_C$     | 0.5      | W <sup>+2</sup>        |
|                             |           | 2        |                        |
|                             |           | 1        |                        |
| Junction temperature        | $T_J$     | 150      | $^\circ C$             |
| Storage temperature         | $T_{stg}$ | -55~+150 | $^\circ C$             |

<sup>+1</sup>  $P_W=10ms$ ,  $duty=1/2$

<sup>+2</sup> When mounted on a 40×40×0.7 mm ceramic board.

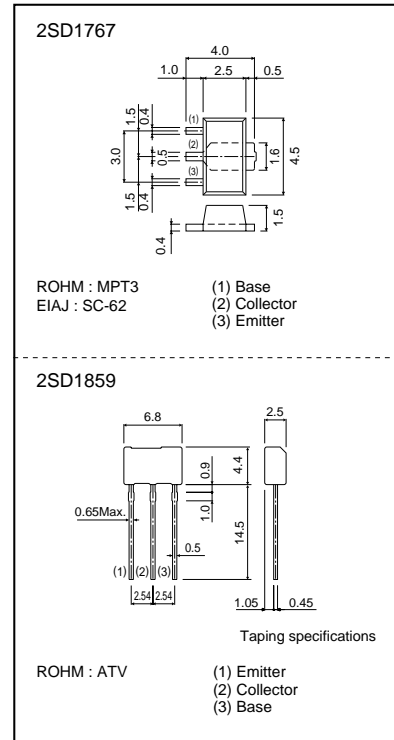
<sup>+3</sup> Printed circuit board 1.7 mm thick, collector plating 1cm<sup>2</sup> or larger.

### ●Packaging specifications and $h_{FE}$

| Type                         | 2SD1767 | 2SD1859 |
|------------------------------|---------|---------|
| Package                      | MPT3    | ATV     |
| $h_{FE}$                     | PQR     | QR      |
| Marking                      | DC*     | -       |
| Code                         | T100    | TV2     |
| Basic ordering unit (pieces) | 1000    | 2500    |

\*Denotes  $h_{FE}$

### ●External dimensions (Units : mm)



### ●Electrical characteristics ( $T_a=25^\circ C$ )

| Parameter                            | Symbol        | Min.    | Typ. | Max. | Unit    | Conditions                        |
|--------------------------------------|---------------|---------|------|------|---------|-----------------------------------|
| Collector-base breakdown voltage     | $BV_{CB0}$    | 80      | -    | -    | V       | $I_C=50\mu A$                     |
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 80      | -    | -    | V       | $I_C=2mA$                         |
| Emitter-base breakdown voltage       | $BV_{EB0}$    | 5       | -    | -    | V       | $I_E=50\mu A$                     |
| Collector cutoff current             | $I_{CB0}$     | -       | -    | 0.5  | $\mu A$ | $V_{CB}=50V$                      |
| Emitter cutoff current               | $I_{EB0}$     | -       | -    | 0.5  | $\mu A$ | $V_{EB}=4V$                       |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | -       | 0.2  | 0.4  | V       | $I_C/I_E=500mA/50mA$              |
| DC current transfer ratio            | $h_{FE}$      | 2SD1767 | 82   | -    | 390     | -                                 |
|                                      |               | 2SD1859 | 120  | -    | 390     | $V_{CE}/I_C=3V/0.1A$              |
| Transition frequency                 | $f_T$         | -       | 120  | -    | MHz     | $V_{CE}=10V, I_E=-50mA, f=100MHz$ |
| Output capacitance                   | $C_{ob}$      | -       | 10   | -    | pF      | $V_{CE}=10V, I_E=0A, f=1MHz$      |