

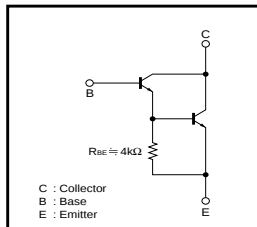
# Power transistor (40V, 2A)

## 2SD1759 / 2SD1861

### ●Features

- 1) Darlington connection for high DC current gain.
- 2) Built-in 4k $\Omega$  resistor between base and emitter.
- 3) Complements the 2SB1183 / 2SB1239.

### ●Equivalent circuit



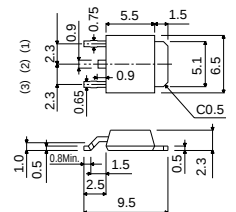
### ●Absolute maximum ratings (Ta=25°C)

| Parameter                   | Symbol           | Limits   | Unit                               |
|-----------------------------|------------------|----------|------------------------------------|
| Collector-base voltage      | V <sub>CB0</sub> | 40       | V                                  |
| Collector-emitter voltage   | V <sub>CE0</sub> | 40       | V (R <sub>BE</sub> =10k $\Omega$ ) |
| Emitter-base voltage        | V <sub>EB0</sub> | 5        | V                                  |
| Collector current           | I <sub>C</sub>   | 2        | A(DC)                              |
|                             |                  | 3        | A(Pulse) *1                        |
| Collector power dissipation | P <sub>C</sub>   | 1        | W                                  |
|                             |                  | 1        | W                                  |
|                             |                  | 10       | W (T <sub>C</sub> =25°C)           |
| Junction temperature        | T <sub>J</sub>   | 150      | °C                                 |
| Storage temperature         | T <sub>stg</sub> | -55~+150 | °C                                 |

\*1 Single pulse P<sub>av</sub>=10ms\*2 Printed circuit board 1.7mm thick, collector plating 1cm<sup>2</sup> or larger.

### ●External dimensions (Units : mm)

#### 2SD1759

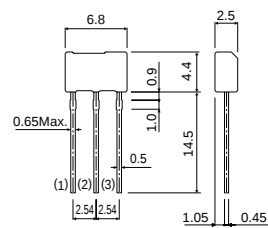


ROHM : CPT3

EIAJ : SC-63

- (1) Base  
(2) Collector  
(3) Emitter

#### 2SD1861



ROHM : ATV

- (1) Emitter  
(2) Collector  
(3) Base

Taping specifications

### ●Packaging specifications and h<sub>FE</sub>

| Type                         | 2SD1759 | 2SD1861 |
|------------------------------|---------|---------|
| Package                      | CPT3    | ATV     |
| h <sub>FE</sub>              | 1k~200k | 1k~     |
| Code                         | TL      | TV2     |
| Basic ordering unit (pieces) | 2500    | 2500    |

### ●Electrical characteristics (Ta=25°C)

| Parameter                            | Symbol               | Min.            | Typ. | Max. | Unit    | Conditions                                         |
|--------------------------------------|----------------------|-----------------|------|------|---------|----------------------------------------------------|
| Collector-base breakdown voltage     | BV <sub>CB0</sub>    | 40              | —    | —    | V       | I <sub>C</sub> =50 $\mu$ A                         |
| Collector-emitter breakdown voltage  | BV <sub>CE0</sub>    | 40              | —    | —    | V       | I <sub>C</sub> =1mA, R <sub>BE</sub> =10k $\Omega$ |
| Emitter-base breakdown voltage       | BV <sub>EB0</sub>    | 5               | —    | —    | V       | I <sub>E</sub> =50 $\mu$ A                         |
| Collector cutoff current             | I <sub>CB0</sub>     | —               | —    | 1    | $\mu$ A | V <sub>CE</sub> =24V                               |
| Emitter cutoff current               | I <sub>EB0</sub>     | —               | —    | 1    | $\mu$ A | V <sub>EE</sub> =4V                                |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | —               | —    | 1.5  | V       | I <sub>C</sub> /I <sub>E</sub> =0.6mA/1.2mA        |
| DC current transfer ratio            | 2SD1759              | h <sub>FE</sub> | 1000 | —    | 20000   | V <sub>CE</sub> /I <sub>C</sub> =3V/0.5A           |
|                                      | 2SD1861              | h <sub>FE</sub> | 1000 | —    | —       |                                                    |
| Output capacitance                   | C <sub>ob</sub>      | —               | 11   | —    | pF      | V <sub>CE</sub> =10V, I <sub>E</sub> =0A, f=1MHz   |