

# For Power amplification (–100V, –8A)

## 2SB1668

### ●Structure

PNP Silicon Epitaxial Planar Transistor  
(Darlington connection)

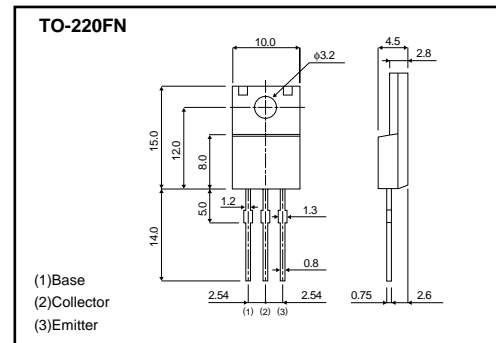
### ●Features

- 1) High  $h_{FE}$  by darlington connection.
- 2) Built-in resistors between base and emitter.
- 3) Damper diode is incorporated.

### ●Applications

Relay drive  
Motor drive

### ●External dimensions (Unit : mm)



### ●Complements

| PNP     | NPN     |
|---------|---------|
| 2SB1668 | 2SD2607 |

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

| Parameter                    | Symbol    | Limits      | Unit       |
|------------------------------|-----------|-------------|------------|
| Collector-base voltage       | $V_{CB0}$ | –100        | V          |
| Collector-emitter voltage    | $V_{CE0}$ | –100        | V          |
| Emitter-base voltage         | $V_{EB0}$ | –7          | V          |
| Collector current            | DC        | $I_C$       | –8 A       |
|                              | Pulse     | $I_{CP}$    | –10 A *1   |
| Power dissipation            | $P_C$     | 2           | W(Ta=25°C) |
|                              |           | 30          | W(Tc=25°C) |
| Junction temperature         | $T_J$     | 150         | °C         |
| Range of storage temperature | $T_{stg}$ | –55 to +150 | °C         |

\*1  $t=100ms$

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

| Type    | Package                      | Taping |
|---------|------------------------------|--------|
|         | Code                         | –      |
|         | Basic ordering unit (pieces) | 500    |
| 2SB1668 |                              | ○      |

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

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit    | Conditions                      |
|--------------------------------------|---------------|------|------|------|---------|---------------------------------|
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | –100 | –    | –    | V       | $I_C=-5mA$                      |
| Collector-base breakdown voltage     | $BV_{CBO}$    | –100 | –    | –    | V       | $I_C=-50\mu A$                  |
| Emitter-base breakdown voltage       | $BV_{EBO}$    | –7   | –    | –    | V       | $I_E=-5mA$                      |
| Collector cut-off current            | $I_{CBO}$     | –    | –    | –10  | $\mu A$ | $V_{CB}=-100V$                  |
| Emitter cut-off current              | $I_{EBO}$     | –    | –    | –3   | mA      | $V_{EB}=-5V$                    |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | –    | –    | 1.5  | V       | $I_C/I_B=-3A/-6mA$              |
| DC current gain                      | $h_{FE}$      | 1    | –    | 20   | K       | $V_{CE}=-3V, I_C=-2A$           |
| Transition frequency                 | $f_T$         | –    | 12   | –    | MHz     | $V_{CE}=-5V, I_E=0.5A, f=10MHz$ |
| Collector output capacitance         | $C_{ob}$      | –    | 90   | –    | pF      | $V_{CB}=-10V, I_E=0A, f=1MHz$   |

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