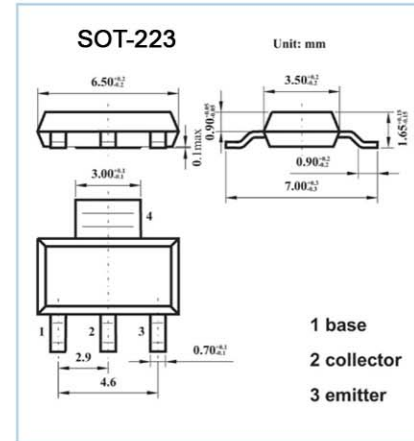


### ■ Features

- High current.
- Three current gain selections.
- 1.4 W total power dissipation.



### ■ Absolute Maximum Ratings Ta = 25°C

| Parameter  | Symbol               | Rating      | Unit |
|--|----------------------|-------------|------|
| Collector-base voltage                           | V <sub>CB0</sub>     | -32         | V    |
| Collector-emitter voltage                        | V <sub>CE0</sub>     | -20         | V    |
| Emitter-base voltage                             | V <sub>EB0</sub>     | -5          | V    |
| Collector current (DC)                           | I <sub>C</sub>       | -1          | A    |
| Peak collector current                           | I <sub>CM</sub>      | -2          | A    |
| Peak base current                                | I <sub>BM</sub>      | -200        | mA   |
| Total power dissipation                          | P <sub>tot</sub>     |             |      |
| * 1  |                      | 0.625       | W    |
| * 2  |                      | 1           | W    |
| * 3  |                      | 1.4         | W    |
| Storage temperature                              | T <sub>stg</sub>     | -65 to +150 | °C   |
| Junction temperature                             | T <sub>j</sub>       | 150         | °C   |
| Operating ambient temperature                    | T <sub>amb</sub>     | -65 to +150 | °C   |
| Thermal resistance from junction to ambient *    | R <sub>th(j-a)</sub> |             |      |
| * 1  |                      | 200         | K/W  |
| * 2  |                      | 125         | K/W  |
| * 3  |                      | 89          | K/W  |
| Thermal resistance from junction to solder point | R <sub>th(j-s)</sub> | 15          | K/W  |

\*1 Device mounted on a FR4 PCB; single-sided copper; tinplated; standard footprint for SOT223.

\*2 Device mounted on a FR4 PCB; single-sided copper; tinplated; 1 cm<sup>2</sup> collector mounting pad.

\*3 Device mounted on a FR4 PCB; single-sided copper; tinplated; 6 cm<sup>2</sup> collector mounting pad.

■ Electrical Characteristics Ta = 25°C

| Parameter                            | Symbol      | Testconditions                        | Min | Typ | Max  | Unit |
|--------------------------------------|-------------|---------------------------------------|-----|-----|------|------|
| Collector cutoff current             | IcBO        | IE = 0 A; VCB = -25 V                 |     |     | -100 | nA   |
|                                      |             | IE = 0 A; VCB = -25 V; Tj = 150 °C    |     |     | -10  | μA   |
| Emitter cutoff current               | IEBO        | Ic = 0 A; VEB = -5 V                  |     |     | -100 | nA   |
| DC current gain                      | BCP69       | VCE = -10 V; Ic = -5 mA               | 50  |     |      |      |
|                                      |             | VCE = -1 V; Ic = -500 mA              | 85  |     | 375  |      |
|                                      |             | VCE = -1 V; Ic = -1 A                 | 60  |     |      |      |
|                                      | BCP69-16    |                                       | 100 |     | 250  |      |
|                                      | BCP69-16/IN | VCE = -1 V; Ic = -500 mA              | 140 |     | 230  |      |
|                                      | BCP69-25    |                                       | 160 |     | 375  |      |
| Collector-emitter saturation voltage | VCEsat      | Ic = -1 A; IB = -100 mA;              |     |     | -500 | mV   |
| Base-emitter voltage                 | VBE         | VCE = -10 V; Ic = -5 mA               |     |     | -700 | mV   |
|                                      |             | VCE = -1 V; Ic = -1 A                 |     |     | -1   | V    |
| Collector capacitance                | Cc          | IE = ie = 0 A; VCB = -10 V; f = 1 MHz |     | 28  |      | pF   |
| Transition frequency                 | fr          | Ic = -50 mA; VCE = -5 V; f = 100 MHz  | 40  | 140 |      | MHz  |