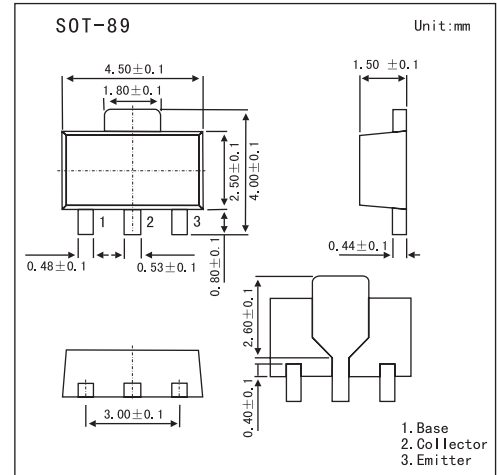


NPN Medium Power Transistor

BC868

■ Features

- High current
- Two current gain selections
- 1.2 W total power dissipation.



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

| Parameter | Symbol | Rating | Unit |
|--|---------------|-------------|------------------|
| Collector-base voltage (open emitter) | V_{CB0} | 32 | V |
| Collector-emitter voltage (open base) | V_{CE0} | 20 | V |
| Emitter-base voltage (open collector) | V_{EB0} | 5 | V |
| Collector current | I_C | 1 | A |
| Peak collector current | I_{CM} | 2 | A |
| Peak base current | I_{BM} | 200 | mA |
| Total power dissipation | P_{tot} | *1 and *2 | 0.5 |
| | | *1 and *3 | 0.85 |
| | | *1 and *4 | 1.2 |
| Storage temperature | T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Junction temperature | T_J | 150 | $^\circ\text{C}$ |
| ambient temperature | T_{amb} | -65 to +150 | $^\circ\text{C}$ |
| Thermal resistance from junction to ambient | $R_{th(j-a)}$ | *1 and *2 | 250 |
| | | *1 and *3 | 147 |
| | | *1 and *4 | 104 |
| Thermal resistance from junction to solder point | $R_{th(j-s)}$ | 20 | K/W |

*1.Refer to SOT89 standard mounting conditions.

*2.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated footprint.

*3.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 1 cm^2 .

*4.Device mounted on an FR4 printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm^2 .



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BC868

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|--|--|-----|-----|------|
| Collector cutoff current | IcBO | V _{CB} = 25 V, I _E = 0 | | | 100 | nA |
| | | V _{CB} = 25 V, I _E = 0; T _j = 25°C | | | 10 | μA |
| Emitter cutoff current | I _{EBO} | V _{EB} = 5 V, I _C = 0 | | | 100 | nA |
| DC current gain | BC868 | h _{FE} | I _C = 5 mA; V _{CE} = 10 V | 50 | | |
| | | | I _C = 500 mA; V _{CE} = 1 V | 85 | | 375 |
| | | | I _C = 1 A; V _{CE} = 1 V | 60 | | |
| | BC868-25 | h _{FE} | I _C = 500 mA; V _{CE} = 1 V | 160 | | 375 |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C = 1 A; I _B = 100 mA | | | 500 | mV |
| Base to emitter voltage | V _{BE} | I _C = 5 mA; V _{CE} = 10 V | | | 700 | mV |
| | | I _C = 1 A; V _{CE} = 1 V | | | 1 | V |
| Collector capacitance | C _c | I _E = I _E = 0; V _{CB} = 10 V; f = 1 MHz | | 22 | | pF |
| Transition frequency | f _T | I _C = 50 mA; V _{CE} = 5 V; f = 100 MHz | 40 | 170 | | MHz |

■ hFE Classification

| TYPE | BC868 | BC868-25 |
|---------|-------|----------|
| Marking | CAC | CDC |