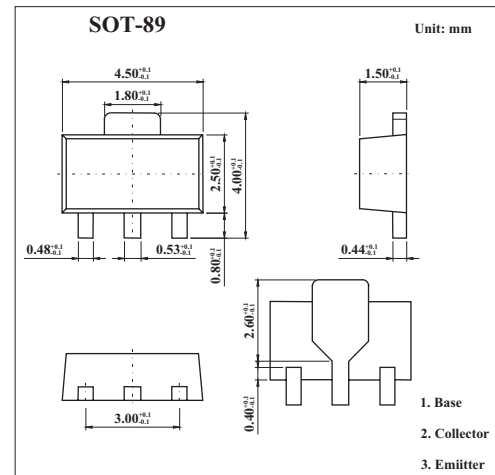


PNP Medium Power Transistors

BSR30,BSR31,BSR33

■ Features

- High current (max. 1 A)
- Low voltage (max. 80 V).



■ Absolute Maximum Ratings Ta = 25°C

| Parameter | Symbol | Rating | Unit | |
|---|----------------------|------------------|------|---|
| Collector-base voltage | BSR30,BSR31 BSR33 | V _{CB0} | -70 | V |
| | | | -90 | V |
| Collector-emitter voltage | BSR30,BSR31 BSR33 | V _{CEO} | -60 | V |
| | | | -80 | V |
| Emitter-base voltage | 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} | 1.35 | W | |
| Storage temperature | T _{stg} | -65 to +150 | °C | |
| Junction temperature | T _j | 150 | °C | |
| Operating ambient temperature | R _{amb} | -65 to +150 | °C | |
| Thermal resistance from junction to ambient | R _{th(j-a)} | 93 | K/W | |
| Thermal resistance from junction to soldering point | R _{th(j-s)} | 13 | K/W | |

BSR30,BSR31,BSR33

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|--|--------|---------------------------------------|-----|-----|-------|------|
| Collector cutoff current | ICBO | IE = 0; VCB = -60 V | | | -100 | nA |
| | | IE = 0; VCB = -60 V; Tj = 150 °C | | | -50 | μA |
| Emitter cutoff current | IEBO | IC = 0; VEB = -5 V | | | -100 | nA |
| DC current gain * BSR30 BSR31; BSR33 | hFE | IC = -100 mA; VCE = -5 V; | 10 | | | |
| | | | 30 | | | |
| DC current gain * BSR30 BSR31,BSR33 | hFE | IC = -100 mA; VCE = -5 V | 40 | | 120 | |
| | | | 100 | | 300 | |
| DC current gain * BSR30 BSR31,BSR33 | hFE | IC = -500 mA; VCE = -5 V; | 30 | | | |
| | | | 50 | | | |
| collector-emitter saturation voltage * | VCEsat | IC = -150 mA; IB = -15 mA | | | -0.25 | V |
| | | IC = -500 mA; IB = -50 mA | | | -0.5 | V |
| base-emitter saturation voltage * | VBEsat | IC = -150 mA; IB = -15 mA | | | -1 | V |
| | | IC = -500 mA; IB = -50 mA | | | -1.2 | V |
| Transition frequency | fr | IC = -50 mA; VCE = -10 V; f = 100 MHz | 100 | | | MHz |

* Pulse test: tp = 300 μs; δ ≤ 0.01.

■ hFE Classification

| TYPE | BSR30 | BSR31 | BSR33 |
|---------|-------|-------|-------|
| Marking | BR1 | BR2 | BR4 |