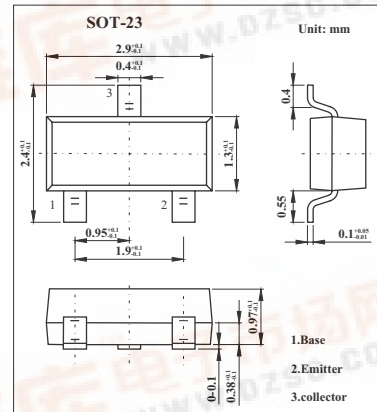


SMD Type Transistors

PNP General Purpose Transistor
BC859,BC860

■ Features

- Low current (max. 100 mA).
- Low voltage (max. 45 V).



■ Absolute Maximum Ratings Ta = 25°C

| Parameter | Symbol | BC859 | BC860 | Unit |
|---|---------------------|-------------|-------|------|
| Collector-base voltage | V _{CB0} | -30 | -50 | V |
| Collector-emitter voltage | V _{CE0} | -30 | -45 | V |
| Emitter-base voltage | V _{EB0} | -5 | | V |
| Collector current | I _C | -100 | | mA |
| Peak collector current | I _{CM} | -200 | | mA |
| Peak base current | I _{BM} | -200 | | mA |
| Total power dissipation * | P _{tot} | 250 | | mW |
| Junction temperature | T _j | 150 | | °C |
| Storage temperature | T _{stg} | -65 to +150 | | °C |
| Operating ambient temperature | R _{amb} | -65 to +150 | | °C |
| Thermal resistance from junction to ambient * | R _{th j-a} | 500 | | K/W |

* Transistor mounted on an FR4 printed-circuit board.

BC859,BC860

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|--|------|------|------|------|
| Collector cutoff current | ICBO | V _{CB} = -30 V, I _E = 0 | | -1 | -15 | nA |
| | ICBO | V _{CB} = -30 V, I _E = 0, T _j = 150°C | | | -4 | μA |
| Emitter cutoff current | IEBO | V _{EB} = -5 V, I _C = 0 | | | -100 | nA |
| DC current gain | BC859B,BC860B | hFE I _C = -2 mA; V _{CE} = -5 V | 220 | | 475 | |
| | BC859C,BC860C | | 420 | | 800 | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C = -10 mA; I _B = -0.5 mA | | -75 | -300 | mV |
| | | I _C = -100 mA; I _B = -5 mA; | | -250 | -650 | mV |
| Base-emitter saturation voltage *1 | V _{BE(sat)} | I _C = -10 mA; I _B = -0.5 mA | | -700 | | mV |
| | | I _C = -100 mA; I _B = -5 mA; | | -850 | | mV |
| Base-emitter voltage *2 | V _{BE} | I _C = -2 mA; V _{CE} = -5 V | -600 | -650 | -750 | mV |
| | | I _C = -10 mA; V _{CE} = -5 V | | | -820 | mV |
| Collector capacitance | C _C | V _{CB} = -10 V; I _E = I _C = 0; f = 1 MHz | | 4.5 | | pF |
| Emitter capacitance | C _e | I _C = I _C = 0; V _{EB} = -500 mV; f = 1 MHz | | 10 | | |
| Transition frequency | f _T | V _{CE} = -5 V; I _C = -10 mA; f = 100 MHz | 100 | | | MHz |
| Noise figure | NF | I _C = -200 μA; V _{CE} = -5 V; R _s = 2 kΩ; f = 1 kHz; B = 200 Hz | | | 4 | dB |

*1. V_{BE(sat)} decreases by about -1.7 mV/K with increasing temperature.

*2. V_{BE} decreases by about -2 mV/K with increasing temperature.

■ hFE Classification

| TYPE | BC859B | BC859C |
|---------|--------|--------|
| Marking | 4B | 4C |

| TYPE | BC860B | BC860C |
|---------|--------|--------|
| Marking | 4F | 4G |