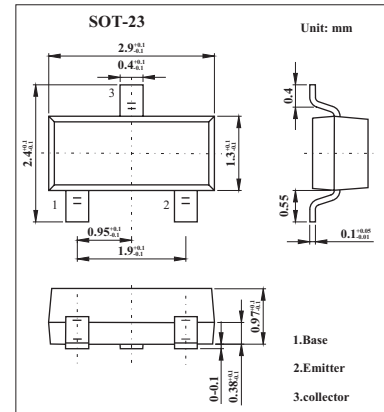


NPN Epitaxial Planar Silicon Transistor

2SC3143

■ Features

- High breakdown voltage.
- Small output capacitance.

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

| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|-------------|------------------|
| Collector-base voltage | V_{CBO} | 180 | V |
| Collector-emitter voltage | V_{CEO} | 160 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 80 | mA |
| Collector current (pulse) | I_{CP} | 150 | mA |
| Collector dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

2SC3143

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit | |
|--|---------------|---------------------------------------|-----|------|-----|---------------|---------------|
| Collector cutoff current | I_{cBO} | $V_{CB} = 120V, I_E = 0$ | | | 0.1 | μA | |
| Emitter cutoff current | I_{EBO} | $V_{EB} = 4V, I_C = 0$ | | | 0.1 | μA | |
| DC current Gain | h_{FE} | $V_{CE} = 5V, I_C = 10\text{mA}$ | 60 | | 270 | | |
| Gain bandwidth product | f_T | $V_{CE} = 10V, I_C = 10\text{mA}$ | | 150 | | MHz | |
| Output capacitance | C_{ob} | $V_{CB} = 10V, f = 1\text{MHz}$ | | 2.0 | 2.5 | pF | |
| Base-emitter voltage | V_{BE} | $V_{CE} = 5V, I_C = 10\text{mA}$ | | | 1.5 | V | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 30\text{mA}, I_B = 3\text{mA}$ | | | 0.7 | V | |
| Collector-to-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 10\mu\text{A}, I_E = 0$ | 180 | | | V | |
| Collector-to-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, R_{BE} = \infty$ | 160 | | | V | |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}, I_C = 0$ | 5 | | | V | |
| Turn-on time | t_{on} | | | 0.18 | | μs | |
| Storage time | t_{stg} | | | | 1.0 | | μs |
| Fall time | t_f | | | | 0.2 | | μs |

■ hFE Classification

| Marking | K | | |
|---------|--------|--------|---------|
| Rank | 3 | 4 | 5 |
| hFE | 60~120 | 90~180 | 135~270 |