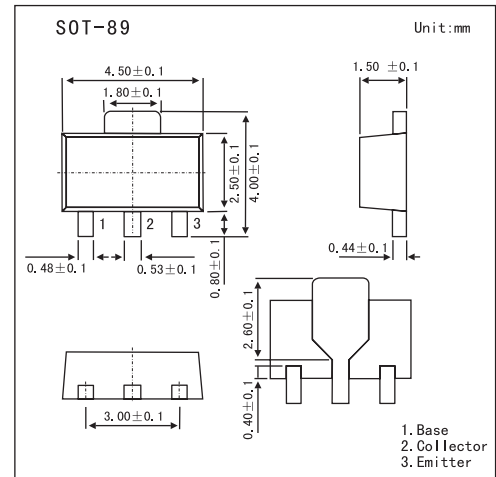


NPN Epitaxial Planar Silicon Transistor

2SC4520

■ Features

- Adoption of FBET, MBIT process.
- Large current capacity.
- Low collector-to-emitter saturation voltage.
- Fast switching speed.
- Small-sized package.

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

| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|-------------|------------------|
| Collector-base voltage | V_{CB0} | 60 | V |
| Collector-emitter voltage | V_{CE0} | 45 | V |
| Emitter-base voltage | V_{EB0} | 5 | V |
| Collector current | I_C | 1.5 | A |
| Collector current (pulse) | I_{CP} | 3 | A |
| Collector dissipation | P_C | 1.3 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

2SC4520

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit | |
|--------------------------------------|----------------------|---|-----|------|-----|------|----|
| Collector cutoff current | I _{CBO} | V _{CB} = 45V, I _E = 0 | | | 1 | μA | |
| Emitter cutoff current | I _{EBO} | V _{EB} = 3V, I _C = 0 | | | 1 | μA | |
| DC current gain | h _{FE} | V _{CE} = 2V, I _C = 100mA | 100 | | 400 | | |
| Gain bandwidth product | f _T | V _{CE} = 2V, I _C = 100mA | | 300 | | MHz | |
| Output capacitance | C _{ob} | V _{CB} = 10V, f = 1.0MHz | | 13 | | pF | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C = 800 mA, I _B = 40mA | | 0.25 | 0.7 | V | |
| Base-emitter saturation voltage | V _{BE(sat)} | I _C = 800 mA, I _B = 40mA | | 0.9 | 1.3 | V | |
| Collector-base breakdown voltage | V _{(BR)CBO} | I _C = 10μA, I _E = 0 | 60 | | | V | |
| Collector-emitter breakdown voltage | V _{(BR)CEO} | I _C = 1mA, R _{BE} = ∞ | 45 | | | V | |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E = 10μA, I _C = 0 | 5 | | | V | |
| Turn-on time | t _{on} | <p>PW=20μs D.C. = 1%</p> <p>50Ω</p> <p>RB</p> <p>RE</p> <p>RL</p> <p>V_{BE} = -1V</p> <p>V_{CC} = 25V</p> <p>20I_{B1} = -20I_{B2} = I_C = 800mA</p> <p>Unit (resistance : Ω, capacitance : F)</p> | | 50 | 100 | ns | |
| Storage time | t _{stg} | | | | 150 | 270 | ns |
| Fall time | t _f | | | | 180 | 350 | ns |

■ hFE Classification

| Marking | CK | | |
|---------|---------|---------|---------|
| Rank | R | S | T |
| hFE | 100~200 | 140~280 | 200~400 |