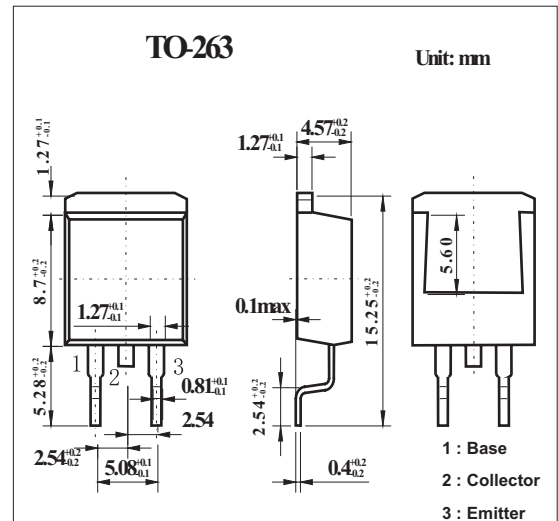


Switching Applications

2SD2200

■ Features


- Surface mount type device making the following possible.
- Low collector-to-emitter saturation voltage.
- Large current capacity.

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

| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|-------------|------------------|
| Collector-base voltage | V_{CB0} | 90 | V |
| Collector-emitter voltage | V_{CE0} | 80 | V |
| Emitter-base voltage | V_{EB0} | 6 | V |
| Collector current | I_C | 5 | A |
| Collector current (pulse) | I_{CP} | 9 | A |
| Collector dissipation | P_C | 1.65 | W |
| $T_C = 25^\circ\text{C}$ | | 30 | W |
| Junction temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

2SD2200

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit | |
|--|----------------------|--|-----|-----|-----|------|----|
| Collector cutoff current | I _{CBO} | V _{CB} = 80V , I _E = 0 | | | 0.1 | mA | |
| Emitter cutoff current | I _{EBO} | V _{EB} = 4V , I _C = 0 | | | 0.1 | mA | |
| DC current Gain | h _{FE} | V _{CE} = 2V , I _C = 1A | 70 | | 280 | | |
| | | V _{CE} = 2V , I _C = 3A | 30 | | | | |
| Gain bandwidth product | f _T | V _{CE} = 5V , I _C = 1A | | 20 | | MHz | |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C = 3A , I _B = 0.3A | | | 0.4 | V | |
| Collector-to-base breakdown voltage | V _{(BR)CBO} | I _C = 1mA , I _E = 0 | 90 | | | V | |
| Collector-to-emitter breakdown voltage | V _{(BR)CEO} | I _C = 1mA , R _{BE} = ∞ | 80 | | | V | |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E = 1mA , I _C = 0 | 6 | | | V | |
| Turn-on time | t _{on} |  <p>10 I_{B1} = 10 I_{CE} = I_C = 2A For PNP, the polarity is reversed. Unit (resistance : Ω, capacitance : F)</p> | | 0.1 | | µs | |
| Storage time | t _{stg} | | | | 1.2 | | µs |
| Fall time | t _f | | | | 0.4 | | µs |

■ hFE Classification

| Rank | Q | R | S |
|------|--------|---------|---------|
| hFE | 70~140 | 100~200 | 140~280 |