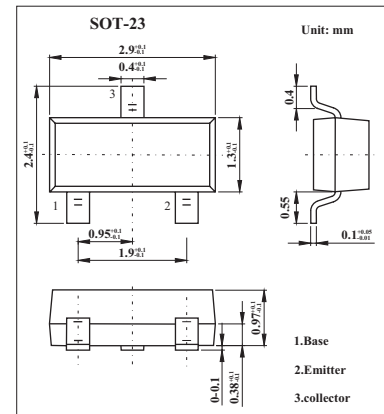


NPN Transistor

2SC1815



■ Features

- Power dissipation

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

| Parameter | Symbol | Rating | Unit |
|---------------------------------|-----------|------------|------------------|
| Collector to Base Voltage | V_{CB0} | 60 | V |
| Collector to Emitter Voltage | V_{CE0} | 50 | V |
| Emitter to Base Voltage | V_{EB0} | 5 | V |
| Collector Current to Continuous | I_c | 150 | mA |
| Collector Power Dissipation | P_c | 200 | mW |
| Junction Temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to 125 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|-----|------|---------------|
| Collector to base breakdown voltage | V_{CB0} | $I_c = 100 \mu\text{A}$, $I_E = 0$ | 60 | | | V |
| Collector to emitter breakdown voltage | V_{CE0} | $I_c = 0.1\text{mA}$, $I_B = 0$ | 50 | | | V |
| Collector cut to off current | I_{CB0} | $V_{CB} = 60\text{V}$, $I_E = 0$ | | | 0.1 | μA |
| Collector cut to off current | I_{CE0} | $V_{CE} = 50\text{V}$, $I_B = 0$ | | | 0.1 | μA |
| Emitter cut to off current | I_{EB0} | $V_{EB} = 5\text{V}$, $I_c = 0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE} = 6\text{V}$, $I_c = 2\text{mA}$ | 130 | | 400 | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_c = 100\text{mA}$, $I_B = 10\text{mA}$ | | | 0.25 | V |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | $I_c = 100\text{mA}$, $I_B = 10\text{mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE} = 10\text{V}$, $I_c = 1\text{mA}$, $f = 30\text{MHz}$ | 80 | | | MHz |

■ hFE Classification

| Marking | HF | |
|---------|---------|---------|
| | L | H |
| hFE | 130~200 | 200~400 |

2SC1815

■ Typical Characteristics

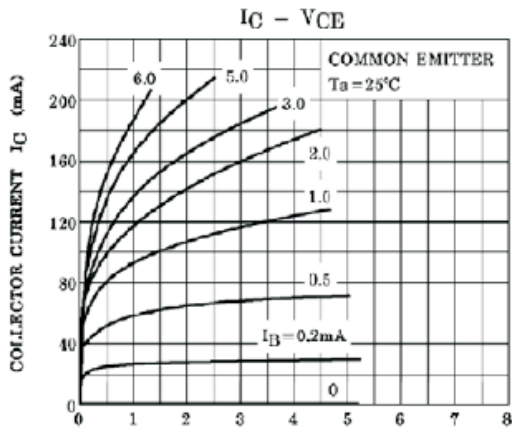


Fig.1 Collector Emitter Voltage

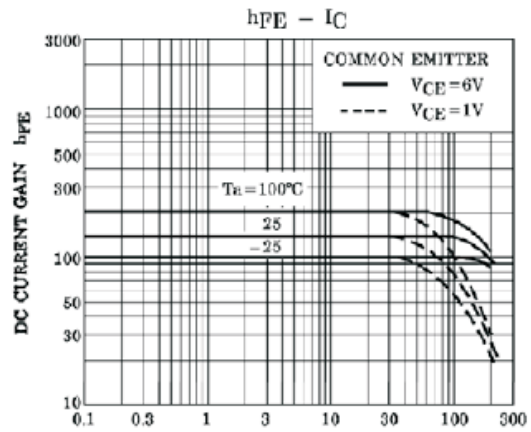


Fig.2 Collector Current

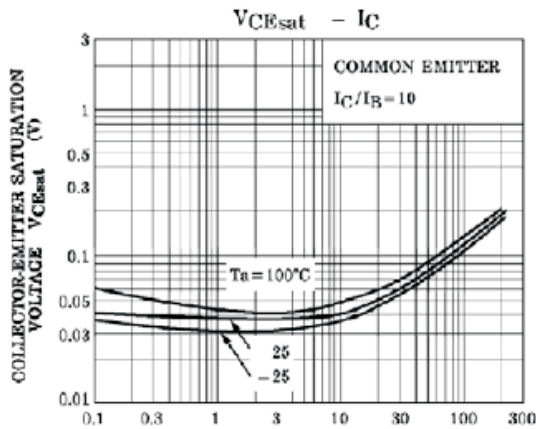


Fig.3 Collector Current

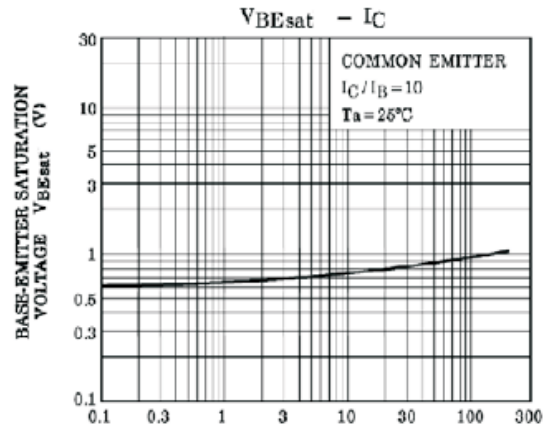


Fig.4 Collector Current

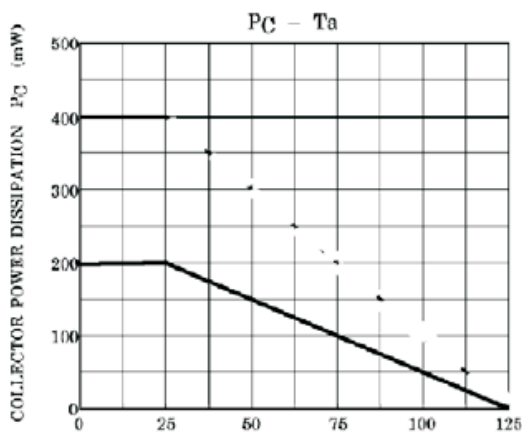


Fig.5 Ambient Temperature

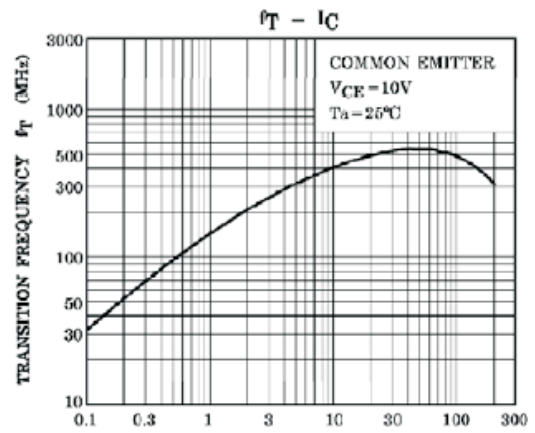


Fig.6 Emitter Current