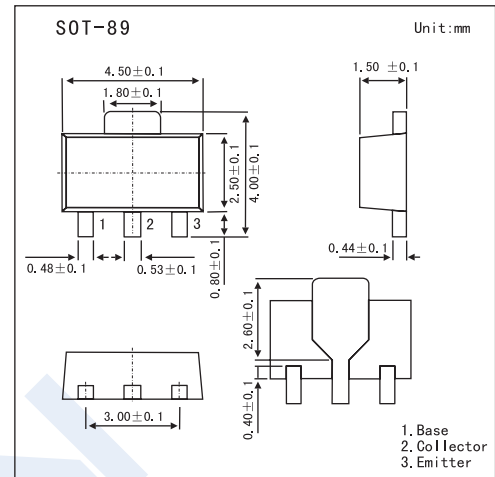


High-Speed Switching Applications

2SA1729



Features

- Adoption of FBET, MBIT Process.
- Large Current Capacity.
- Low Collector-to-Emitter Saturation Voltage.
- High-Speed Switching.
- Small-Sized Package.

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

| Parameter | Symbol | Rating | Unit |
|---------------------------|-----------|-------------|------------------|
| Collector-Base Voltage | V_{CB0} | -50 | V |
| Collector-Emitter Voltage | V_{CE0} | -40 | 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 Range | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

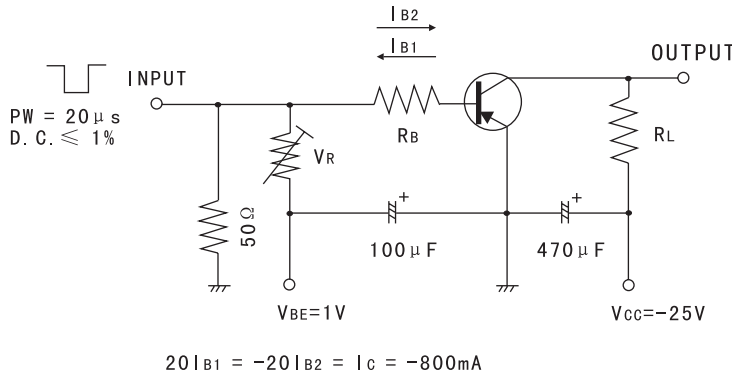
* Mounted on ceramic board (250 mm² x 0.8 mm)

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

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|------|------|---------------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = -40\text{V}$, $I_E = 0$ | | | -1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = -3\text{V}$, $I_C = 0$ | | | -1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = -2\text{V}$, $I_C = -100\text{mA}$ | 70 | | 280 | |
| | | $V_{CE} = -2\text{V}$, $I_C = -1.5\text{A}$ | 25 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -800\text{mA}$, $I_B = -40\text{mA}$ | | -0.3 | -0.8 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = -800\text{mA}$, $I_B = -40\text{mA}$ | | -0.9 | -1.3 | V |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu\text{A}$, $I_E = 0$ | -50 | | | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1\text{mA}$, $R_{BE} = \infty$ | -40 | | | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = -10\mu\text{A}$, $I_C = 0$ | -5 | | | V |
| Gain-Bandwidth Product | f_T | $V_{CE} = -2\text{V}$, $I_C = -100\text{mA}$ | | 300 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = -10\text{V}$, $f = 1\text{MHz}$ | | 18 | | pF |
| Turn-ON Time | t_{on} | See Test Circuit | | 50 | 100 | ns |
| Storage Time | t_{stg} | | | 120 | 220 | ns |
| Turn-OFF Time | t_{off} | | | 150 | 300 | ns |

2SA1729

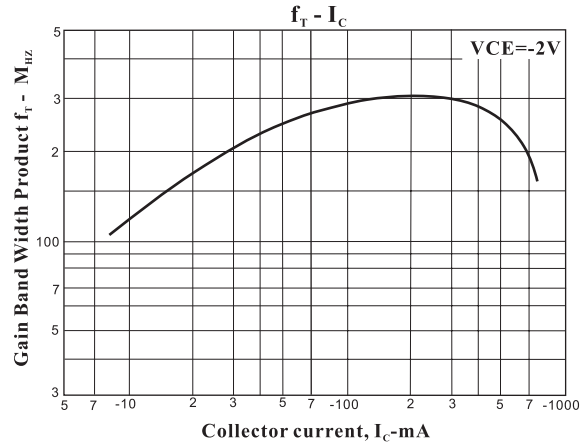
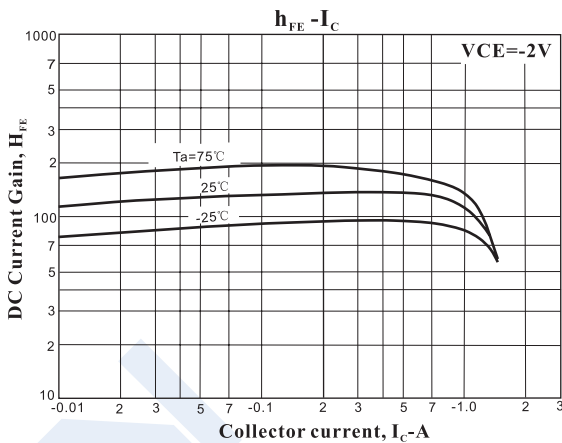
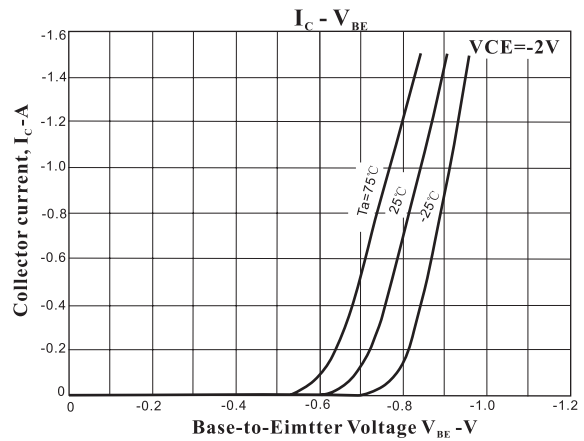
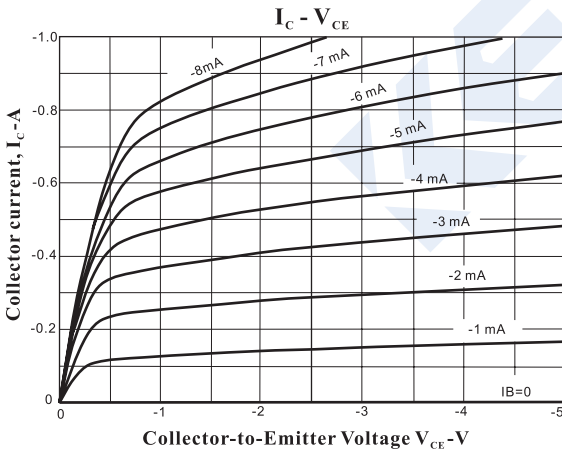
■ Test Circuit



■ hFE Classification

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

■ Electrical Characteristics Curves



2SA1729

