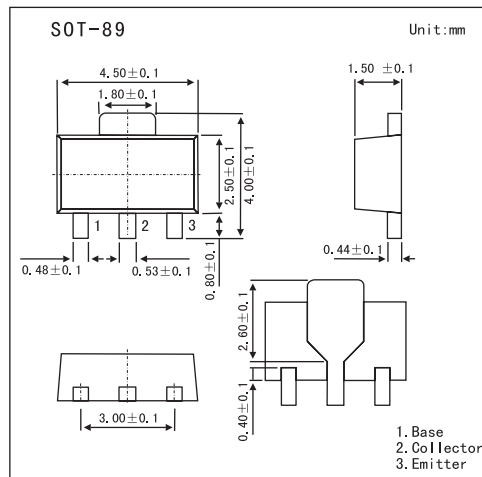


■ Features

- Adoption of FBET, MBIT Processes
- High Breakdown Voltage and Large Current Capacity



■ Absolute Maximum Ratings Ta = 25°C

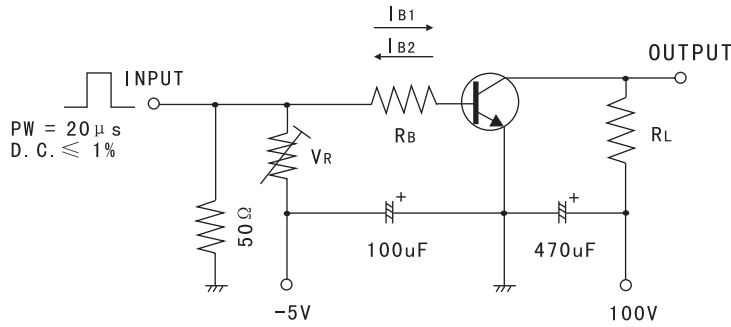
| Parameter | Symbol | Rating | Unit |
|-----------------------------|------------------|-------------|------|
| Collector-Base Voltage | V _{CB0} | 180 | V |
| Collector-Emitter Voltage | V _{CEO} | 160 | V |
| Emitter-Base Voltage | V _{EBO} | 6 | V |
| Collector Current | I _C | 1.5 | A |
| Collector Current (Pulse) | I _{CP} | 2.5 | A |
| Collector Power Dissipation | P _C | 500 | mW |
| | P _C * | 1.5 | W |
| Junction temperature | T _J | 150 | °C |
| Storage temperature Range | T _{stg} | -55 to +150 | °C |

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

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit | |
|--------------------------------------|----------------------|-------------------------------------------------------|-----|------|------|------|----|
| Collector Cut-off Current | I _{CBO} | V _{CB} = 120V , I _E = 0 | | | 1 | uA | |
| Emitter Cut-off Current | I _{EBO} | V _{EB} = 4V , I _C = 0 | | | 1 | uA | |
| Collector-Base Breakdown Voltage | V _{(BR)CBO} | I _C = 10uA , I _E = 0 | 180 | | | V | |
| Collector-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C = 1mA , R _{BE} = ∞ | 160 | | | V | |
| Emitter-Base Breakdown Voltage | V _{(BR)EBO} | I _E = 10uA , I _C = 0 | 6 | | | V | |
| DC Current Gain | h _{FE} | V _{CE} = 5V , I _C = 100mA | 100 | | 400 | | |
| | | V _{CE} = 5V , I _C = 10mA | 80 | | | | |
| Collector-Emitter Saturation Voltage | V _{CE(sat)} | I _C = 500mA , I _B = 50mA | | 0.13 | 0.45 | V | |
| Base-Emitter Saturation Voltage | V _{BE(sat)} | I _C = 500mA , I _B = 50mA | | 0.85 | 1.2 | V | |
| Gain-Bandwidth Product | f _T | V _{CE} = 10V , I _C = 50mA | | 120 | | MHz | |
| Collector Output Capacitance | C _{ob} | V _{CB} = 10V , I _E = 0 , f = 1MHz | | 14 | | pF | |
| Turn-On Time | t _{on} | See Test Circuit. | | 40 | | ns | |
| Storage Time | t _{stg} | | | | 1.2 | | us |
| Fall Time | t _f | | | | 80 | | ns |

■ Test Circuit

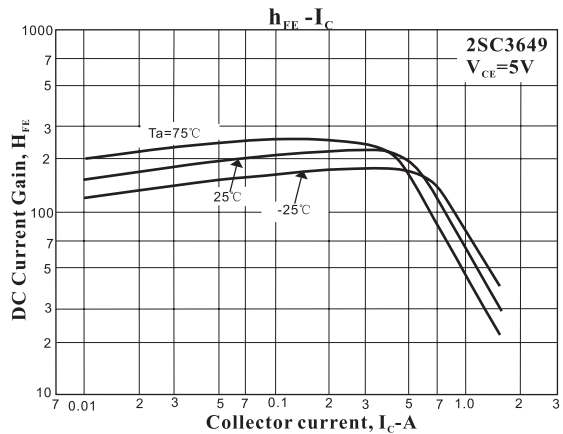
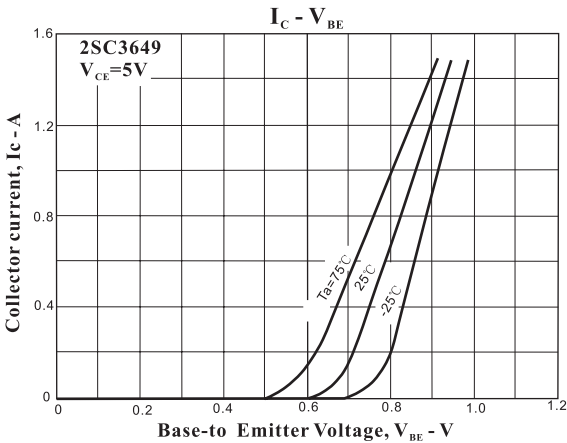
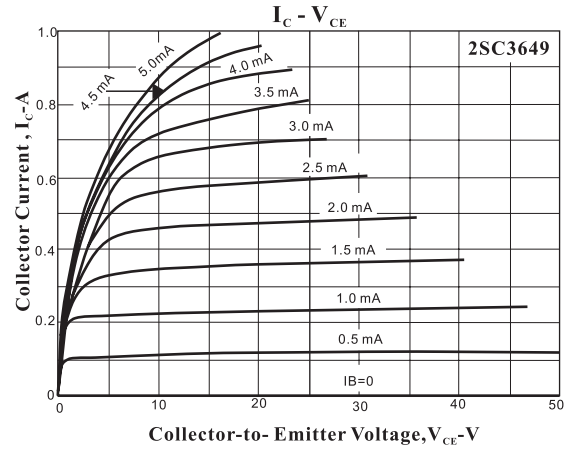
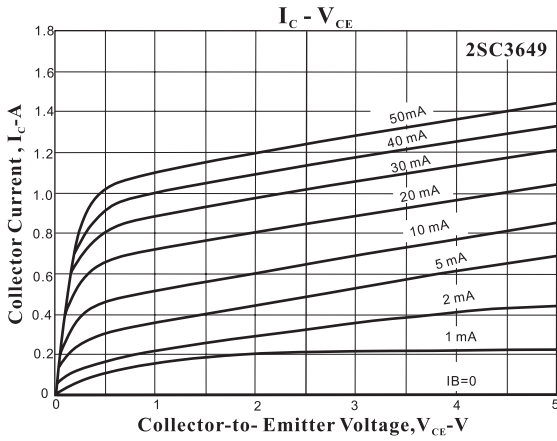


$10I_{B1} = -10I_{B2} = I_C = 0.7A$
 (For PNP, the polarity is reversed.)

■ hFE Classification

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

■ Electrical Characteristics Curves





2SC3649

