

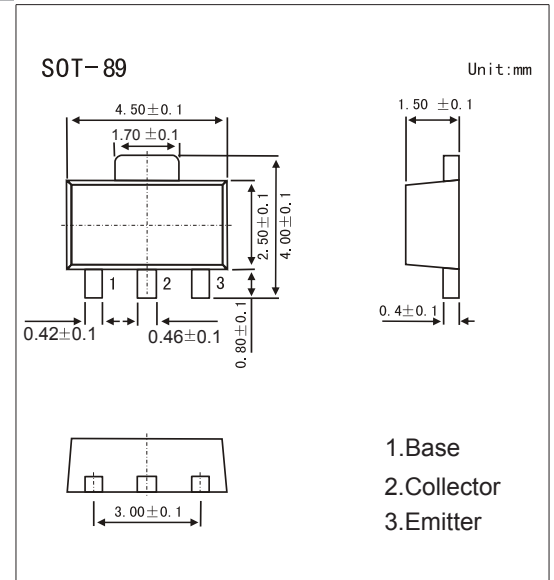
SOT-89 Plastic-Encapsulate Transistors

Features

- High V_{CEO} , $V_{CEO}=80V$
- High I_c , $I_c=1A$ (DC)
- Low $V_{CE(sat)}$
- Complementary to 2SB1260
- NPN Transistors

MECHANICAL DATA

- Case style: SOT-89 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------|
| Collector - Base Voltage | V_{CBO} | 120 | V |
| Collector - Emitter Voltage | V_{CEO} | 80 | |
| Emitter - Base Voltage | V_{EBO} | 5 | |
| Collector Current - Continuous | I_c | 1 | A |
| Collector Current - Pulse | I_{CP} | 2 | |
| Collector Power Dissipation | P_c | 0.5 | W |
| | | 2 | |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

PACKAGE INFORMATION

| Device | Package | Shipping |
|---------|---------|----------------|
| 2SD1898 | SOT-89 | 1000/Tape&Reel |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|-----|------|-----|------|
| Collector- base breakdown voltage | V_{CBO} | $I_c = 100 \mu A, I_E = 0$ | 120 | | | V |
| Collector- emitter breakdown voltage | V_{CEO} | $I_c = 1 \text{ mA}, I_B = 0$ | 80 | | | |
| Emitter - base breakdown voltage | V_{EBO} | $I_E = 100 \mu A, I_c = 0$ | 5 | | | |
| Collector-base cut-off current | I_{CBO} | $V_{CB} = 100 \text{ V}, I_E = 0$ | | | 1 | uA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 4 \text{ V}, I_c = 0$ | | | 0.5 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_c = 500 \text{ mA}, I_B = 50 \text{ mA}$ | | 0.15 | 0.4 | V |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_c = 500 \text{ mA}, I_B = 50 \text{ mA}$ | | | 1.2 | |
| DC current gain | h_{FE} | $V_{CE} = 3 \text{ V}, I_c = 500 \text{ mA}$ | 120 | | 390 | |
| Collector Output capacitance | C_{ob} | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ | | 20 | | pF |
| Transition frequency | f_T | $V_{CE} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 100 \text{ MHz}$ | | 100 | | MHz |

Classification of h_{FE}

| Type | 2SD1898-Q | 2SD1898-R |
|---------|-----------|-----------|
| Range | 120-270 | 180-390 |
| Marking | DF Q* | DF R* |

RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

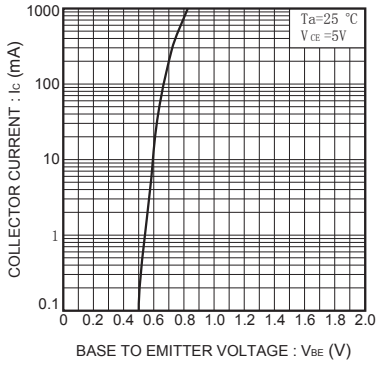


Fig.1 Grounded emitter propagation characteristics

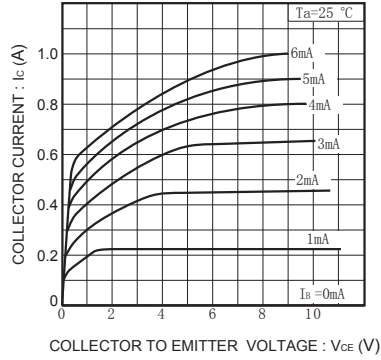


Fig.2 Grounded emitter output characteristics

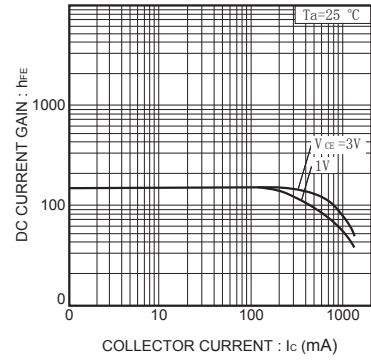


Fig.3 DC current gain vs. collector current

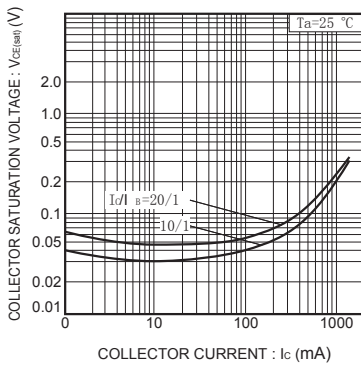


Fig.4 Collector-emitter saturation voltage vs. collector current

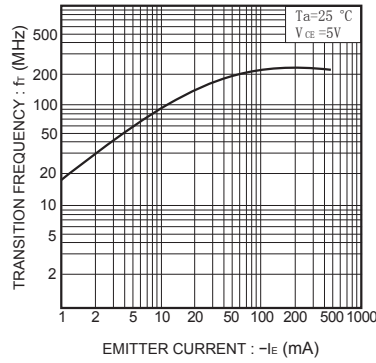


Fig.5 Gain bandwidth product vs. emitter current

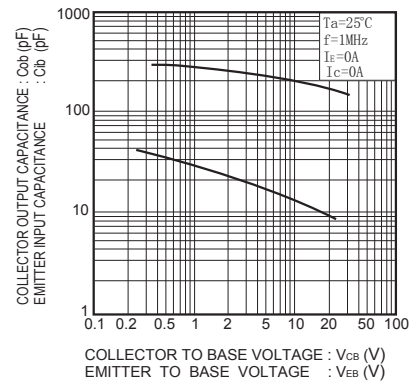


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

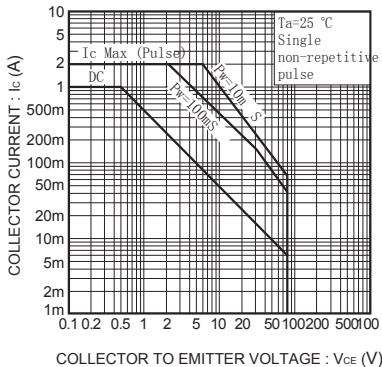


Fig.7 Safe operating area (2SD1898)