

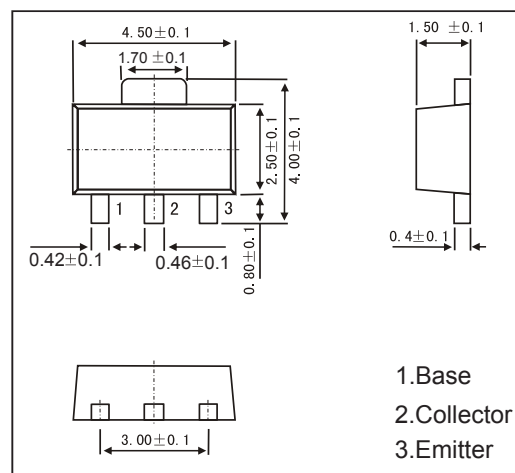
## SOT-89 Plastic-Encapsulate Transistors

### FEATURES

- High breakdown voltage,  $BV_{CEO} = -80V$ , and High Current,  $I_C = -0.7A$
- Complementary to 2SD1767
- PNP 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       | $V_{CBO}$ | -80        | V    |
| Collector - Emitter Voltage    | $V_{CEO}$ | -80        |      |
| Emitter - Base Voltage         | $V_{EBO}$ | -5         |      |
| Collector Current - Continuous | $I_C$     | -0.7       | A    |
| Collector Power Dissipation    | PC        | 0.5        | W    |
|                                |           | 2          |      |
| Junction Temperature           | $T_J$     | 150        | °C   |
| Storage Temperature range      | $T_{stg}$ | -55 to 150 |      |

| Parameter                            | Symbol        | Test Conditions                                                | Min | Typ  | Max  | Unit    |
|--------------------------------------|---------------|----------------------------------------------------------------|-----|------|------|---------|
| Collector- base breakdown voltage    | $V_{CBO}$     | $I_C = -100 \mu A$ , $I_E = 0$                                 | -80 |      |      | V       |
| Collector- emitter breakdown voltage | $V_{CEO}$     | $I_C = -2 \text{ mA}$ , $I_B = 0$                              | -80 |      |      |         |
| Emitter - base breakdown voltage     | $V_{EBO}$     | $I_E = -100 \mu A$ , $I_C = 0$                                 | -5  |      |      |         |
| Collector-base cut-off current       | $I_{CBO}$     | $V_{CB} = -60V$ , $I_E = 0$                                    |     |      | -0.5 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -4V$ , $I_C = 0$                                     |     |      | -0.5 |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -500 \text{ mA}$ , $I_B = -50 \text{ mA}$               |     | -0.2 | -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                      | $h_{FE}$      | $V_{CE} = -3V$ , $I_C = -100 \text{ mA}$                       | 120 |      | 390  |         |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10V$ , $I_E = 0$ , $f = 1 \text{ MHz}$              |     | 14   | 20   | pF      |
| Transition frequency                 | $f_T$         | $V_{CE} = -5V$ , $I_E = 50 \text{ mA}$ , $f = 100 \text{ MHz}$ |     | 100  |      | MHz     |

## RATINGS AND CHARACTERISTIC CURVES

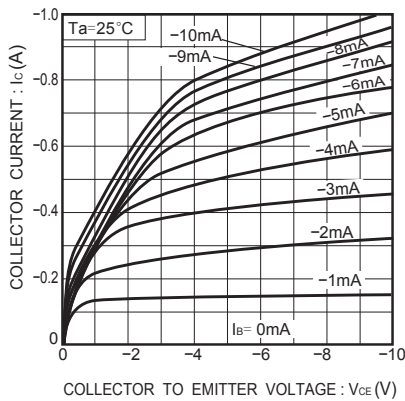


Fig.1 Ground emitter output characteristics

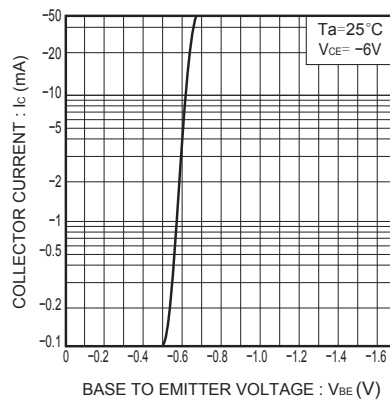


Fig.2 Ground emitter propagation characteristics

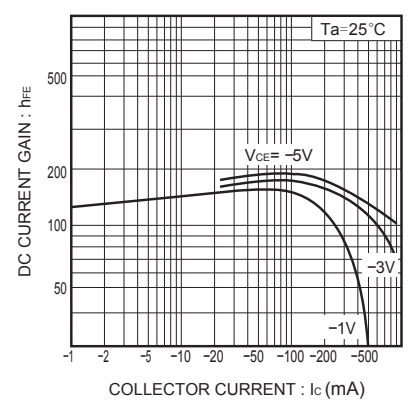


Fig.3 DC current gain vs. collector current

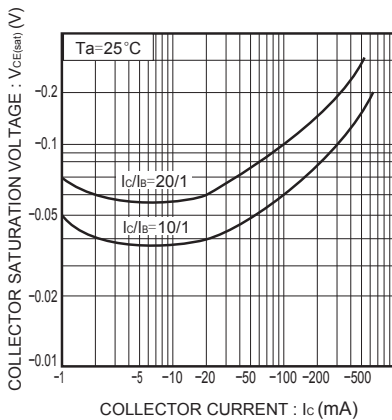


Fig.4 Collector-emitter saturation voltage vs. collector current

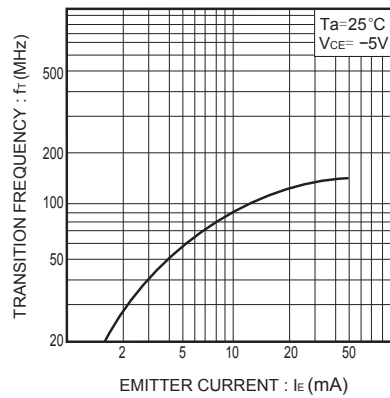


Fig.5 Gain bandwidth product vs. emitter current

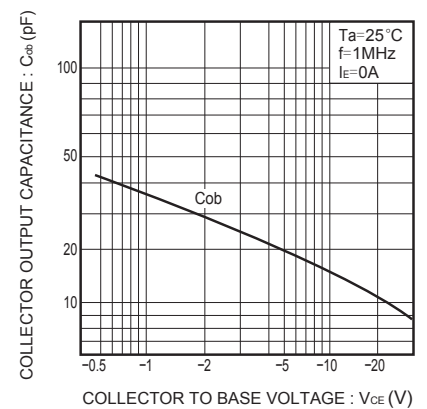


Fig.6 Collector output capacitance vs. collector-base voltage

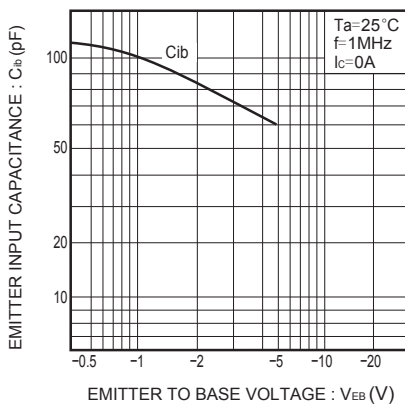


Fig.7 Emitter input capacitance vs. emitter-base voltage

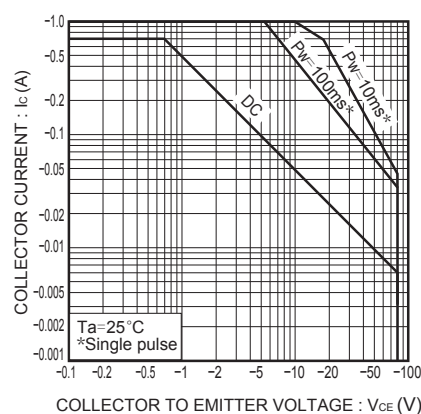


Fig.8 Safe operating area (2SB1189)