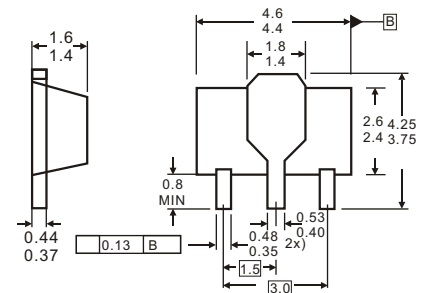


1. BASE
2. COLLECTOR
3. EMITTER

### SOT-89



Dimensions in inches and (millimeters)

## Features

- ✧ Low saturation voltage, typically  $V_{CE(sat)} = 0.1V$  at  $I_C/I_B = 1A/50mA$ .
- ✧ Excellent DC current gain characteristics.
- ✧ Complements the 2SA1797.

## MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)

| Symbol    | Parameter                     | Value   | Units      |
|-----------|-------------------------------|---------|------------|
| $V_{CBO}$ | Collector-Base Voltage        | 60      | V          |
| $V_{CEO}$ | Collector-Emitter Voltage     | 50      | V          |
| $V_{EBO}$ | Emitter-Base Voltage          | 6       | V          |
| $I_C$     | Collector Current -Continuous | 2       | A          |
| $P_C$     | Collector Power Dissipation   | 500     | mW         |
| $T_J$     | Junction Temperature          | 150     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^\circ C$ |

## ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^\circ C$ unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                        | MIN | TYP | MAX  | UNIT    |
|--------------------------------------|---------------|--|-----|-----|------|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 50\mu A, I_E = 0$               | 60  |     |      | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 1mA, I_B = 0$                   | 50  |     |      | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 50\mu A, I_C = 0$               | 6   |     |      | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 60V, I_E = 0$                |     |     | 0.1  | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5V, I_C = 0$                 |     |     | 0.1  | $\mu A$ |
| DC current gain                      | $h_{FE}$      | $V_{CE} = 2V, I_C = 0.5A$              | 82  |     | 270  |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 1A, I_B = 50mA$                 |     |     | 0.35 | V       |
| Transition frequency                 | $f_T$         | $V_{CE} = 2V, I_C = 500mA, f = 100MHz$ |     | 210 |      | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = 10V, I_E = 0, f = 1MHz$      |     | 25  |      | pF      |

## CLASSIFICATION OF $h_{FE}$

| Rank    | P      | Q       |
|---------|--------|---------|
| Range   | 82-180 | 120-270 |
| Marking | DKP    | DKQ     |

## Typical Characteristics

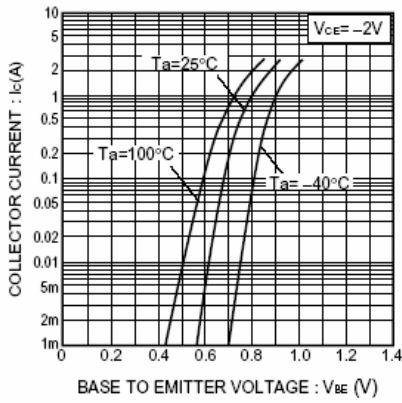


Fig.1 Grounded emitter propagation characteristics

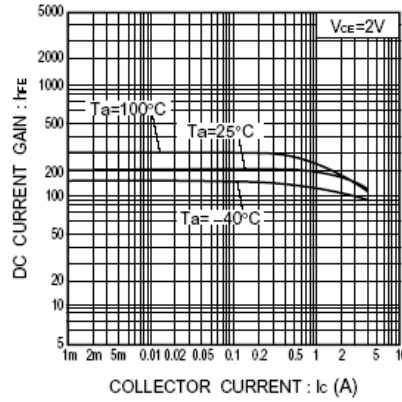


Fig.2 DC current gain vs. collector current

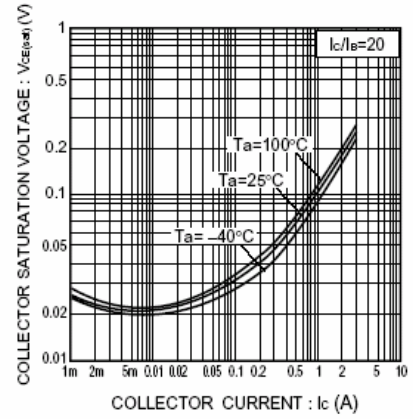


Fig.3 Collector-emitter saturation voltage vs. collector current

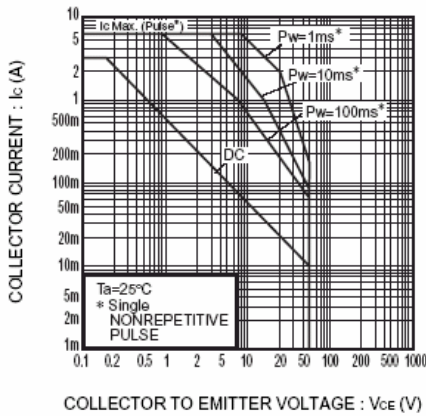


Fig.4 Safe Operating area