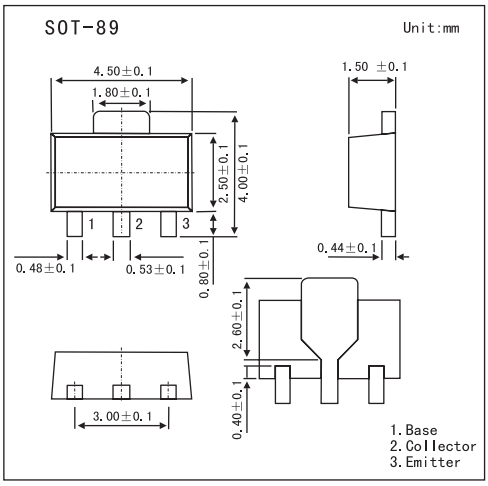
# NPN Epitaxial Planar Silicon Transistor

# 2SC4705




## ■ Features

- High DC current gain ($h_{FE}$=800 to 3200).
- Low collector-to-emitter saturation voltage : $V_{CE(sat)} \leqslant 0.5V$ max.
- High $V_{EBO}$ : $V_{EBO} \geqslant 15V$.
- Small size making it easy to provide high-density, hybrid ICs.

## ■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | 60 | V |
| Collector-emitter voltage | $V_{CEO}$ | 50 | V |
| Emitter-base voltage | $V_{EBO}$ | 15 | V |
| Collector current | $I_C$ | 200 | mA |
| Collector current (pulse) | $I_{CP}$ | 300 | mA |
| Base current | $I_B$ | 40 | mA |
| Collector dissipation,mounted on ceramic board(250mm$^2$X0.8mm) | $P_C$ | 1.3 | W |
| Junction temperature | $T_j$ | 150 | ℃ |
| Storage temperature | $T_{stg}$ | -55 to +150 | ℃ |

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## ■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cutoff current | $I_{CBO}$ | $V_{CB}$ = 40V, $I_E$=0 | | | 0.1 | μA |
| Emitter cutoff current | $I_{EBO}$ | $V_{EB}$ = 10V, $I_C$=0 | | | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$ = 5V , $I_C$ = 100mA | 800 | 1500 | 3200 | |
| Gain bandwidth product | $f_T$ | $V_{CE}$ = 10V , $I_C$ = 10mA | | 250 | | MHz |
| Output capacitance | $C_{ob}$ | $V_{CB}$ = 10V , f = 1.0MHz | | 4 | | pF |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$ = 100 mA , $I_B$ = 2 mA | | 0.12 | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$ = 100 mA , $I_B$ = 2 mA | | 0.85 | 1.2 | V |
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C$ = 10μA , $I_E$ = 0 | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C$ = 1mA , $R_{BE}$ = ∞ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E$ = 10μA , $I_C$ = 0 | 15 | | | V |

## ■ Marking

| Marking | CP |
|---|---|