



## TO-92 Plastic-Encapsulate Transistors

### S9016 TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$$P_{CM}: 0.3 \text{ W (Tamb=25}^{\circ}\text{C)}$$

Collector current

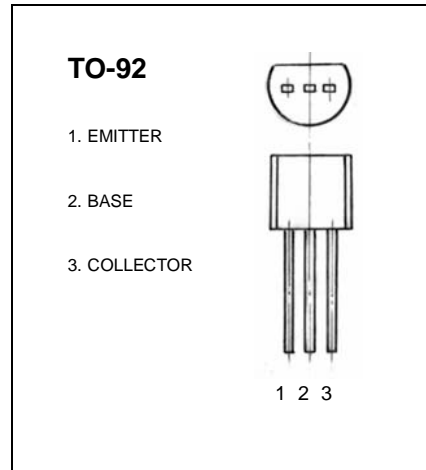
$$I_{CM}: 0.025 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 30 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55^{\circ}\text{C to } +150^{\circ}\text{C}$$



#### ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

| Parameter                            | Symbol        | Test conditions   | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 100\mu\text{A}, I_E = 0$                               | 30  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 0.1\text{mA}, I_B = 0$                                 | 20  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 100\mu\text{A}, I_C = 0$                               | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 30\text{V}, I_E = 0$                                |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 3\text{V}, I_C = 0$                                 |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = 5\text{V}, I_C = 1\text{mA}$                        | 28  |     | 270 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}, I_B = 1\text{mA}$                         |     |     | 0.3 | V             |
| Transition frequency                 | $f_T$         | $V_{CE} = 5\text{V}, I_C = 1\text{mA}$<br>$f = 100\text{MHz}$ | 300 |     |     | MHz           |

#### CLASSIFICATION OF $h_{FE(1)}$

| Rank  | D     | E     | F     | G      | H      | I       | J       |
|-------|-------|-------|-------|--------|--------|---------|---------|
| Range | 28-45 | 39-60 | 54-80 | 72-108 | 97-146 | 132-198 | 180-270 |