



## TO-92 Plastic-Encapsulate Transistors

### 2SA1300

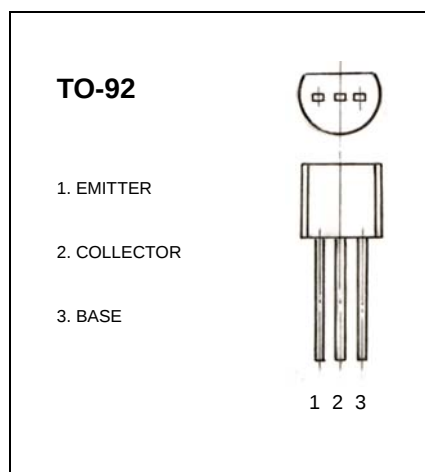
TRANSISTOR (PNP)

#### FEATURES

- Power dissipation

#### MAXIMUM RATINGS\* $T_A=25^{\circ}\text{C}$ unless otherwise noted

| Symbol                         | Parameter                        | Value       | Units              |
|--------------------------------|----------------------------------|-------------|--------------------|
| $V_{\text{CBO}}$               | Collector-Base Voltage           | -20         | V                  |
| $V_{\text{CEO}}$               | Collector-Emitter Voltage        | -10         | V                  |
| $V_{\text{EBO}}$               | Emitter-Base Voltage             | -6          | V                  |
| $I_{\text{C}}$                 | Collector Current -Continuous    | -2          | A                  |
| $P_{\text{C}}$                 | Collector Dissipation            | 0.75        | W                  |
| $T_{\text{J}}, T_{\text{stg}}$ | Junction and Storage Temperature | -55 to +150 | $^{\circ}\text{C}$ |



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

| Parameter                            | Symbol                      | Test conditions                                                           | MIN | TYP | MAX   | UNIT          |
|--------------------------------------|-----------------------------|---------------------------------------------------------------------------|-----|-----|-------|---------------|
| Collector-base breakdown voltage     | $V_{(\text{BR})\text{CBO}}$ | $I_{\text{C}}=-1\text{mA}, I_{\text{E}}=0$                                | -20 |     |       | V             |
| Collector-emitter breakdown voltage  | $V_{(\text{BR})\text{CEO}}$ | $I_{\text{C}}=-10\text{mA}, I_{\text{B}}=0$                               | -10 |     |       | V             |
| Emitter-base breakdown voltage       | $V_{(\text{BR})\text{EBO}}$ | $I_{\text{E}}=-1\text{mA}, I_{\text{C}}=0$                                | -6  |     |       | V             |
| Collector cut-off current            | $I_{\text{CBO}}$            | $V_{\text{CB}}=-20\text{V}, I_{\text{E}}=0$                               |     |     | -0.1  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{\text{EBO}}$            | $V_{\text{EB}}=-6\text{V}, I_{\text{C}}=0$                                |     |     | -0.1  | $\mu\text{A}$ |
| DC current gain                      | $h_{\text{FE}}$             | $V_{\text{CE}}=-1\text{V}, I_{\text{C}}=-0.5\text{A}$                     | 140 |     | 600   |               |
| Collector-emitter saturation voltage | $V_{\text{CE(sat)}}$        | $I_{\text{C}}=-2\text{A}, I_{\text{B}}=-100\text{mA}$                     |     |     | -0.82 | V             |
| Base-emitter voltage                 | $V_{\text{BE}}$             | $I_{\text{C}}=-2\text{A}, V_{\text{CE}}=-1\text{V}$                       |     |     | -1.5  | V             |
| Transition frequency                 | $f_{\text{T}}$              | $V_{\text{CE}}=-1\text{V}, I_{\text{C}}=-0.5\text{A}$<br>$f=30\text{MHz}$ |     | 140 |       | MHz           |
| Collector Output Capacitance         | $C_{\text{ob}}$             | $V_{\text{CB}}=-10\text{V}, I_{\text{E}}=0$<br>$f=1\text{MHz}$            |     | 50  |       | pF            |

#### CLASSIFICATION OF $h_{\text{FE}}$

| Rank  | Y       | GR      | BL      |
|-------|---------|---------|---------|
| Range | 140-280 | 200-400 | 300-600 |

# Typical Characteristics

2SA1300

