



TO-92 Plastic-Encapsulate Transistors

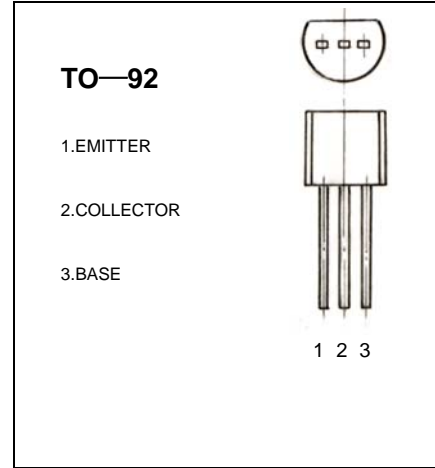
C1815 TRANSISTOR (NPN)

FEATURES

Power dissipation

MAXIMUM RATINGS* $T_A=25^{\circ}\text{C}$ 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 | -5 | V |
| I_C | Collector Current -Continuous | 150 | mA |
| P_D | Total Device Dissipation | 200 | mW |
| T_J, T_{stg} | Junction and Storage Temperature | -55-150 | $^{\circ}\text{C}$ |



*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|------|---------------|
| Collector-base breakdown voltage | $V(BR)_{CBO}$ | $I_C=100\ \mu\text{A}, I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V(BR)_{CEO}$ | $I_C=0.1\ \text{mA}, I_B=0$ | 50 | | | 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} | $V_{CB}=60\ \text{V}, I_E=0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=50\ \text{V}, I_B=0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5\ \text{V}, I_C=0$ | | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=6\ \text{V}, I_C=2\ \text{mA}$ | 70 | | 700 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100\ \text{mA}, I_B=10\ \text{mA}$ | | | 0.25 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=100\ \text{mA}, I_B=10\ \text{mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE}=10\ \text{V}, I_C=1\ \text{mA}$ $f=30\ \text{MHz}$ | 80 | | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10\ \text{V}, I_E=0$ $f=1\ \text{MHz}$ | | | 3.5 | pF |
| Noise Figure | NF | $V_{CE}=6\ \text{V}, I_C=0.1\ \text{mA}$ $f=1\ \text{kHz}, R_G=10\ \text{K}$ | | | 10 | dB |

CLASSIFICATION OF $h_{FE(1)}$

| Rank | O | Y | GR | BL |
|-------|--------|---------|---------|---------|
| Range | 70-140 | 120-240 | 200-400 | 350-700 |

Typical Characteristics

C1815

