

FEATURES

Power dissipation

$$P_{CM} : 0.625 \text{ W (} T_{amb}=25^{\circ}\text{C)}$$

Collector current

$$I_{CM} : 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 40 \text{ V}$$

1. EMITTER

2. BASE

3. COLLECTOR

TO-92



1 2 3

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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 100 \mu\text{A}$, $I_E = 0$ | 40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 0.1 \text{ mA}$, $I_B = 0$ | 25 | | | 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} | $V_{CB} = 40 \text{ V}$, $I_E = 0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE} = 20 \text{ V}$, $I_B = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5 \text{ V}$, $I_C = 0$ | | | 0.1 | μA |
| DC current gain(note) | $H_{FE(1)}$ | $V_{CE} = 1 \text{ V}$, $I_C = 50\text{mA}$ | 85 | | 300 | |
| | $H_{FE(2)}$ | $V_{CE} = 1 \text{ V}$, $I_C = 500\text{mA}$ | 50 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}$, $I_B = 50 \text{ mA}$ | | | 0.6 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 500\text{mA}$, $I_B = 50 \text{ mA}$ | | | 1.2 | V |
| Base-emitter voltage | V_{BE} | $I_E = 100\text{mA}$ | | | 1.4 | V |
| Transition frequency | f_T | $V_{CE} = 6 \text{ V}$, $I_C = 20\text{mA}$ $f = 30\text{MHz}$ | 150 | | | MHz |

CLASSIFICATION OF $H_{FE(1)}$

| Rank | B | C | D |
|-------|--------|---------|---------|
| Range | 85-160 | 120-200 | 160-300 |