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TO-92 Plastic-Encapsulate Transistors

C945 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 0.4 \text{ W (Tamb=25°C)}$$

Collector current

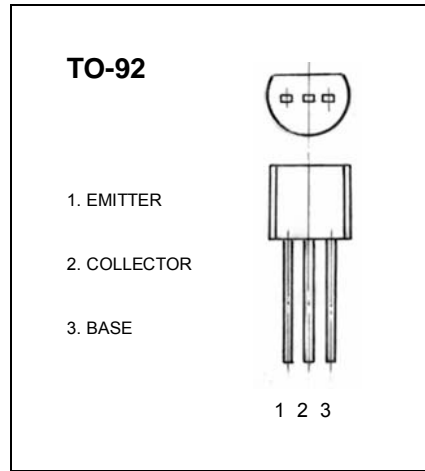
$$I_{CM}: 0.15 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 60 \text{ V}$$

Operating and storage junction temperature range

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



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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=1mA, I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=100\mu A, I_B=0$ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60V, I_E=0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=45V$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=5V, I_C=0$ | | | 0.1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=6V, I_C=1mA$ | 70 | | 700 | |
| | $h_{FE(2)}$ | $V_{CE}=6V, I_C=0.1mA$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=100mA, I_B=10mA$ | | | 0.3 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=100mA, I_B=10mA$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE}=6V, I_C=10mA, f=30 \text{ MHz}$ | 200 | | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=1MHz$ | | | 3.0 | pF |
| Noise figure | NF | $V_{CE}=6V, I_C=0.1mA$ $R_g=10k\Omega, f=1kHz$ | | 4 | 10 | dB |

CLASSIFICATION OF $h_{FE(1)}$

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