

2SD313 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 1.75 \text{ W (Tamb=25°C)}$$

Collector current

$$I_{CM}: 3 \text{ A}$$

Collector-base voltage

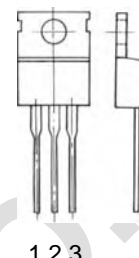
$$V_{(BR)CBO}: 60 \text{ V}$$

Operating and storage junction temperature range

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

TO-220

1. BASE
2. COLLECTOR
3. EMITTER



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

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|-----------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$ | 60 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60V, I_E=0$ | | | 100 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=60V, I_E=0$ | | | 1 | mA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=4V, I_C=0$ | | | 100 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE}=2V, I_C=1A$ | 40 | | 320 | |
| | $h_{FE(2)}$ | $V_{CE}=2V, I_C=0.1A$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=2A, I_B=200mA$ | | | 1 | V |
| Base-emitter voltage | V_{BE} | $V_{CE}=2V, I_C=1A$ | | | 1.5 | V |
| Transition frequency | f_T | $V_{CE}=5V, I_C=500mA$ | | 8 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=1MHz$ | | 65 | | pF |

CLASSIFICATION OF $h_{FE(1)}$

| Rank | C | D | E | F |
|-------|-------|--------|---------|---------|
| Range | 40-80 | 60-120 | 100-200 | 160-320 |