

TRANSISTOR (NPN)
Plastic-Encapsulate Transistor

FEATURES

- Power dissipation

MARKING : AAQ , AAR , AAS

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

Unit:mm

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
 Ratings at 25°C ambient temperature unless otherwise specified.

MAXIMUM RATINGS

| Parameters | Symbols | Value | UNITS |
|----------------------------------|----------------|---------|-------|
| Collector-Base Voltage | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | V_{CEO} | 15 | V |
| Emitter-Base Voltage | V_{EBO} | 6.5 | V |
| Collector Current - Continuous | I_C | 500 | mA |
| Total Device Dissipation | P_D | 200 | mW |
| Junction and Storage Temperature | T_J, T_{stg} | -55-150 | °C |

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

ELECTRICAL CHARACTERISTICS

| Parameters | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---------------------------------|-----|-----|-----|---------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=50\mu A, I_E=0$ | 30 | | | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$ | 15 | | | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=50\mu A, I_C=0$ | 6.5 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=20V, I_E=0$ | | | 0.5 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=4V, I_C=0$ | | | 0.5 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=3V, I_C=100mA$ | 120 | | 560 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500mA, I_B=50mA$ | | | 0.4 | V |
| Transition Frequency | f_T | $V_{CE}=5V, I_C=50mA, f=100MHz$ | | 150 | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10V, I_E=0, f=1MHz$ | | 15 | | pF |

CLASSIFICATION OF h_{FE}

| Rank | Q | R | S |
|-------|---------|---------|---------|
| Range | 120-270 | 180-390 | 270-560 |

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