**TRANSISTOR (NPN)** **Plastic-Encapsulate Transistors**

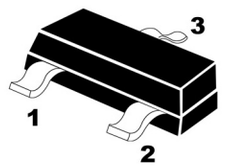
## FEATURES

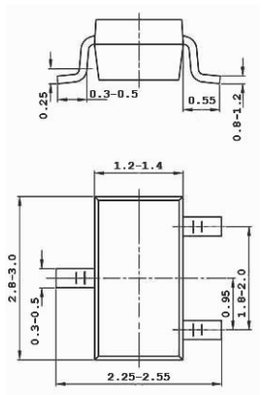
- Power dissipation

**MARKING : RR1 , RO1 , RY1**

## SOT-23

1. BASE
2. EMITTER
3. COLLECTOR




Unit:mm

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

### MAXIMUM RATINGS

| Parameters | Symbols | Value | UNITS |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 35 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 4 | V |
| Collector Current - Continuous | $I_C$ | 50 | mA |
| Collector Dissipation | $P_C$ | 150 | mW |
| Junction and Storage Temperature | $T_J$, $T_{stg}$ | -55-150 | ℃ |

### ELECTRICAL CHARACTERISTICS

| Parameters | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=10μA, $I_E$=0 | 35 | | | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=1mA, $I_B$=0 | 30 | | | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=10μA, $I_C$=0 | 4 | | | V |
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=35V, $I_E$=0 | | | 0.1 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=4V, $I_C$=0 | | | 0.1 | μA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=12V, $I_C$=2mA | 40 | | 240 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=10mA, $I_B$=1mA | | | 0.4 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=10mA, $I_B$=1mA | | | 1 | V |
| Transition Frequency | $f_T$ | $V_{CE}$=10V, $I_C$=1mA | 100 | | 400 | MHz |
| Power Gain | Gpe | $V_{CE}$=6V, $I_C$=1mA, f=10.7MHz | 27 | | 33 | pF |

### CLASSIFICATION OF $h_{FE(1)}$

| Rank | R | O | Y |
|---|---|---|---|
| Range | 40-80 | 70-140 | 120-240 |



RoHS Pb-free TIP Semiconductor