



## TO-92 Plastic-Encapsulate Transistors

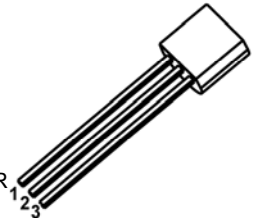
### 2SC1008 TRANSISTOR (NPN)

#### FEATURES

- General Purpose Switching and Amplification

#### TO - 92

1. EMITTER
2. BASE
3. COLLECTOR



#### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                   | Value    | Unit                        |
|-----------------|---|----------|-----------------------------|
| $V_{CBO}$       | Collector-Base Voltage                      | 80       | V                           |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 60       | V                           |
| $V_{EBO}$       | Emitter-Base Voltage                        | 8        | V                           |
| $I_C$           | Collector Current                           | 700      | mA                          |
| $P_C$           | Collector Power Dissipation                 | 800      | mW                          |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 156      | $^{\circ}\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                        | 150      | $^{\circ}\text{C}$          |
| $T_{stg}$       | Storage Temperature                         | -55~+150 | $^{\circ}\text{C}$          |

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

| Parameter                            | Symbol        | Test conditions                                 | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 0.1\text{mA}, I_E = 0$                   | 80  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 10\text{mA}, I_B = 0$                    | 60  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 0.01\text{mA}, I_C = 0$                  | 8   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = 60\text{V}, I_E = 0$                  |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = 5\text{V}, I_C = 0$                   |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE} = 2\text{V}, I_C = 50\text{mA}$         | 40  |     | 400 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$         |     |     | 0.4 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$         |     |     | 1.1 | V             |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = 10\text{V}, I_C = 0, f = 1\text{MHz}$ |     | 8   |     | pF            |
| Transition frequency                 | $f_T$         | $V_{CE} = 10\text{V}, I_C = 50\text{mA}$        | 30  |     |     | MHz           |

#### CLASSIFICATION OF $h_{FE}$

| RANK  | R     | O      | Y       | G       |
|-------|-------|--------|---------|---------|
| RANGE | 40-80 | 70-140 | 120-240 | 200-400 |

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