



## SOT-23 Plastic-Encapsulate Transistors

**2SC3052** TRANSISTOR (NPN)**FEATURES**

- Low collector to emitter saturation voltage  
 $V_{CE(sat)}=0.3V$  max(@ $I_C=100mA, I_B=10mA$ )
- Excellent linearity of DC forward current gain

**MAXIMUM RATINGS** ( $T_A=25^{\circ}C$  unless otherwise noted)

| Symbol    | Parameter                     | Value   | Units       |
|-----------|-------------------------------|---------|-------------|
| $V_{CBO}$ | Collector- Base Voltage       | 50      | V           |
| $V_{CEO}$ | Collector-Emitter Voltage     | 50      | V           |
| $V_{EBO}$ | Emitter-Base Voltage          | 6       | V           |
| $I_C$     | Collector Current -Continuous | 0.2     | A           |
| $P_C$     | Collector Power Dissipation   | 150     | mW          |
| $T_J$     | Junction Temperature          | 125     | $^{\circ}C$ |
| $T_{stg}$ | Storage Temperature           | -55-125 | $^{\circ}C$ |

**SOT-23**

1. BASE
2. EMITTER
3. COLLECTOR

**ELECTRICAL CHARACTERISTICS** ( $T_{amb}=25^{\circ}C$  unless other wise specified)

| Parameter                            | Symbol        | Test Conditions                               | MIN | MAX | UNIT    |
|--------------------------------------|---------------|---|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = 100 \mu A, I_E=0$                      | 50  |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = 100 \mu A, I_B=0$                      | 50  |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = 100 \mu A, I_C=0$                      | 6   |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}= 50 V, I_E=0$                         |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}= 6V, I_C=0$                           |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}= 6V, I_C= 1mA$                        | 150 | 800 |         |
|                                      | $h_{FE(2)}$   | $V_{CE}= 6V, I_C= 0.1mA$                      | 50  |     |         |
| 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                 | $f_T$         | $V_{CE}= 6V, I_C= 10mA$                       | 180 |     | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CE}=6V, I_E=0, f=1MHz$                    |     | 4   | pF      |
| Noise figure                         | NF            | $V_{CE}=6V, I_E=-0.1mA, f=1KHz, R_G=2K\Omega$ |     | 15  | dB      |

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

| Rank  | E       | F       | G       |
|-------|---------|---------|---------|
| Range | 150~300 | 250~500 | 400~800 |

# Typical Characteristics

2SC3052



