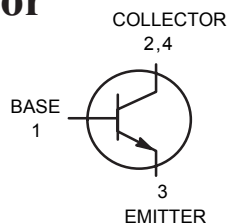
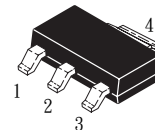


NPN Silicon Planar Epitaxial Transistor

 Lead(Pb)-Free



1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR



SOT-223

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

| Rating | Symbol | Value | Unit |
|---------------------------|------------------|-------------|------|
| Collector-Emitter Voltage | V _{CEO} | 160 | V |
| Collector-Base Voltage | V _{CBO} | 180 | V |
| Emitter-Base Voltage | V _{EBO} | 6 | V |
| Collector Current (DC) | I _C | 600 | mA |
| Total Device Dissipation | P _D | 1.5 | W |
| Junction Temperature | T _j | 150 | °C |
| Storage, Temperature | T _{stg} | -55 to +150 | °C |

Device Marking

| |
|--------------|
| PZT5551=5551 |
|--------------|

ELECTRICAL CHARACTERISTICS

| Characteristics | Symbol | Min | Typ | Max | Unit |
|---|----------------------|-----|-----|-----|------|
| Collector-Emitter Breakdown Voltage (I _C =1mA, I _B =0) | V _{(BR)CEO} | 160 | - | - | V |
| Collector-Base Breakdown Voltage (I _C =100μA, I _E =0) | V _{(BR)CBO} | 180 | - | - | V |
| Emitter-Base Breakdown Voltage (I _E =10 μA, I _C =0) | V _{(BR)EBO} | 6 | - | - | V |
| Collector-Emitter Cutoff Current (V _{CB} =120V, I _E =0) | I _{CBO} | - | - | 50 | nA |
| Emitter-Base Cutoff Current (V _{EB} =4V, I _C =0) | I _{EBO} | - | - | 50 | nA |

ON CHARACTERISTICS

| Characteristics | Symbol | Min | Typ | Max | Unit |
|---|-------------------------------------|----------------|---------------|---------------|--------|
| DC Current Gain ($V_{CE} = 5V, I_C = 1mA$) ($V_{CE} = 5V, I_C = 10mA$) ($V_{CE} = 5V, I_C = 50mA$) | h_{FE1} h_{FE2} h_{FE3} | 80 80 50 | - 160 - | - 400 - | - |
| Collector-Emitter Saturation Voltages ($I_C = 10mA, I_B = 1mA$) ($I_C = 50mA, I_B = 5mA$) | $V_{CE(sat)}$ | - - | - - | 0.15 0.2 | V V |
| Base-Emitter Saturation Voltages ($I_C = 10mA, I_B = 1mA$) ($I_C = 50mA, I_B = 5mA$) | $V_{BE(sat)}$ | - | - | 1 | V |

DYNAMIC CHARACTERISTICS

| | | | | | |
|---|----------|-----|---|-----|-----|
| Current-Gain ($V_{CE} = 10V, I_C = 10mA, f = 100MHz$) | f_T | 100 | - | 300 | MHz |
| Output Capacitance ($V_{CB} = 10V, I_E = 0, f = 1MHz$) | C_{ob} | - | - | 6 | pF |

CLASSIFICATION OF h_{FE2}

| Rank | A | N | C |
|-------|----------|-----------|-----------|
| Range | 80 - 200 | 100 - 250 | 160 - 400 |

Characteristics Curve

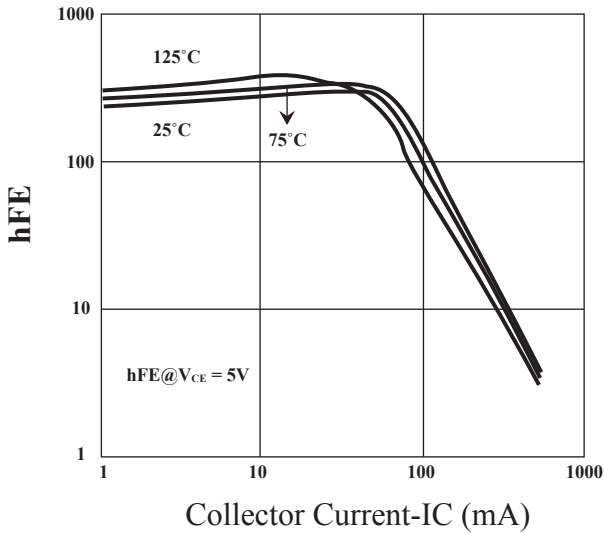


Fig.1 Current Gain & Collector Current

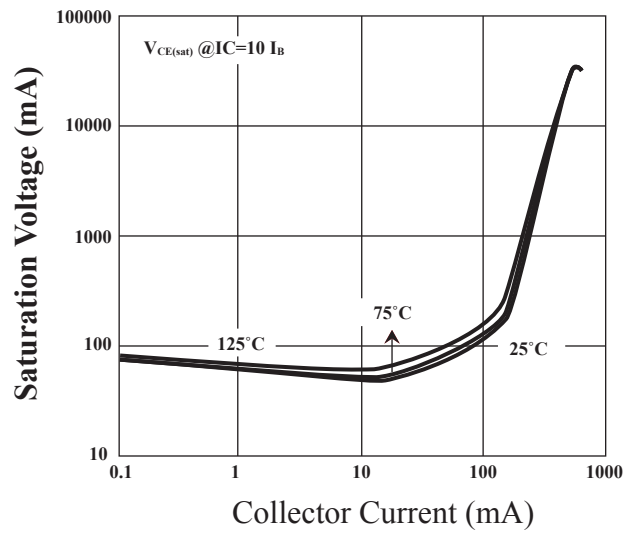


Fig.2 Saturation Voltage & Collector Current

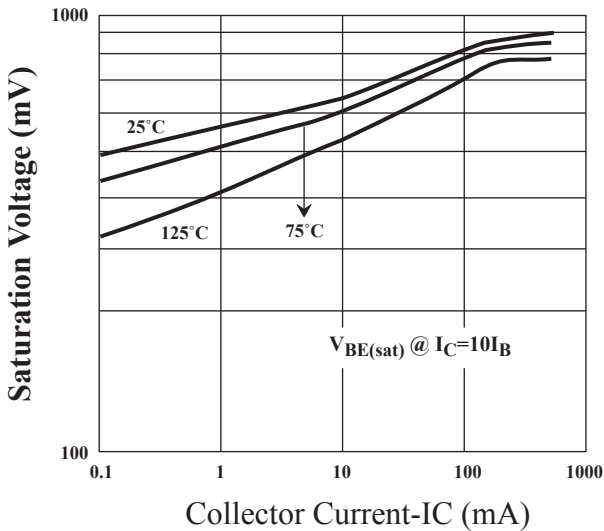


Fig.3 Saturation Voltage & Collector Current

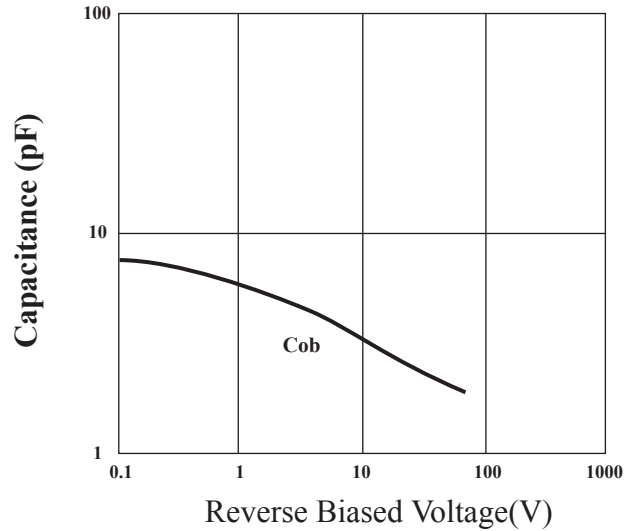


Fig.4 Capacitance & Reverse-Biased Voltage

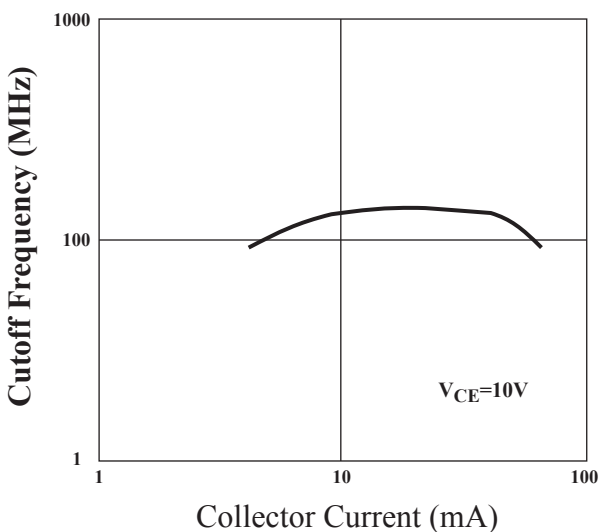


Fig.5 Cutoff Frequency & Collector Current

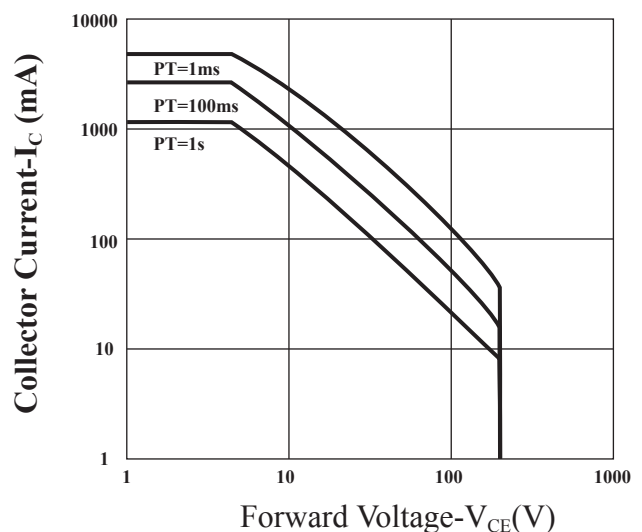
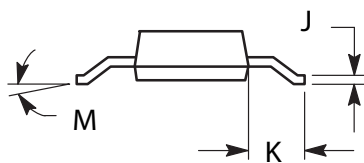
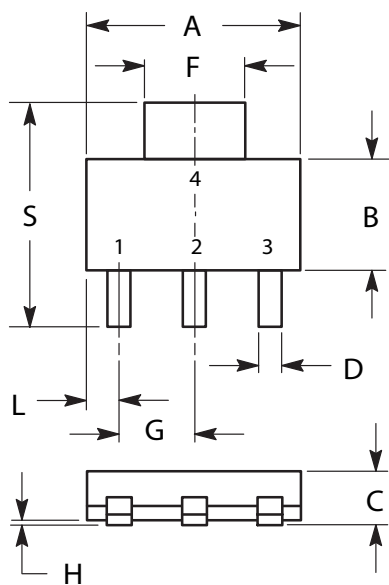


Fig.6 Safe Operation Area

SOT-223 Outline Dimensions

unit:mm



| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 6.30 | 6.70 |
| B | 3.30 | 3.70 |
| C | 1.50 | 1.75 |
| D | 0.60 | 0.89 |
| F | 2.90 | 3.20 |
| G | 2.20 | 2.40 |
| H | 0.020 | 0.100 |
| J | 0.24 | 0.35 |
| K | 1.50 | 2.00 |
| L | 0.85 | 1.05 |
| M | 0° | 10° |
| S | 6.70 | 7.30 |