



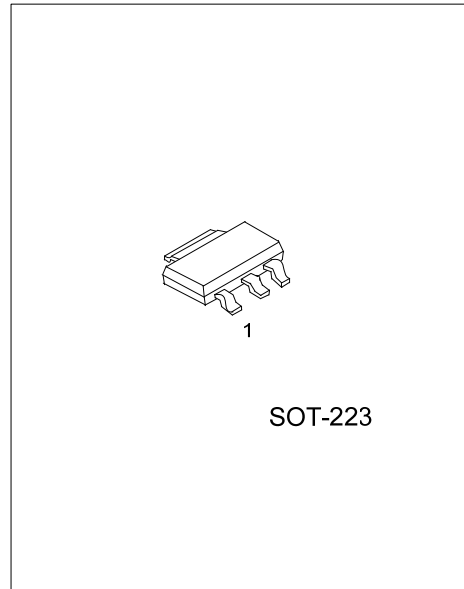
PZT5551

NPN SILICON TRANSISTOR

HIGH VOLTAGE SWITCHING TRANSISTOR

■ FEATURES

- * High Collector-Emitter Voltage:
 $V_{CE0}=160V$
- * High current gain



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|------------------|------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| PZT5551L-x-AA3-R | PZT5551G-x-AA3-R | SOT-223 | B | C | E | Tape Reel |

| | |
|---|--|
| <p>PZT5551L-x-AA3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Free</p> | <p>(1) R: Tape Reel (2) AA3: SOT-223 (3) x: refer to Classification of Hfe (4) G: Halogen Free, L: Lead Free</p> |
|---|--|

■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--------------------------------|-----------|------------|------------------|
| Collector-Base Voltage | V_{CBO} | 180 | V |
| Collector-Emitter Voltage | V_{CEO} | 160 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| DC Collector Current | I_C | 600 | mA |
| Power Dissipation | P_C | 2 | W |
| Operating Junction Temperature | T_J | +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -65 ~ +150 | $^\circ\text{C}$ |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|--------------------|
| Junction to Ambient | θ_{JA} | 62.5 | $^\circ\text{C/W}$ |

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 100\mu\text{A}, I_E = 0$ | 180 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1\text{mA}, I_B = 0$ | 160 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 10\mu\text{A}, I_C = 0$ | 6 | | | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 120\text{V}, I_E = 0$ | | | 50 | nA |
| Emitter Cut-off Current | I_{EBO} | $V_{BE} = 4\text{V}, I_C = 0$ | | | 50 | nA |
| DC Current Gain (Note) | h_{FE} | $V_{CE} = 5\text{V}, I_C = 1\text{mA}$ | 80 | | | |
| | | $V_{CE} = 5\text{V}, I_C = 10\text{mA}$ | 80 | 160 | 400 | |
| | | $V_{CE} = 5\text{V}, I_C = 50\text{mA}$ | 80 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = 10\text{mA}, I_B = 1\text{mA}$ | | | 0.15 | V |
| | | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | | | 0.2 | |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C = 10\text{mA}, I_B = 1\text{mA}$ | | | 1 | V |
| | | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | | | 1 | |
| Current Gain Bandwidth Product | f_T | $V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$ | 100 | | 300 | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | | | 6.0 | pF |
| Noise Figure | NF | $I_C = 0.25\text{mA}, V_{CE} = 5\text{V}$ $R_S = 1\text{k}\Omega, f = 10\text{Hz} \sim 15.7\text{kHz}$ | | | 8 | dB |

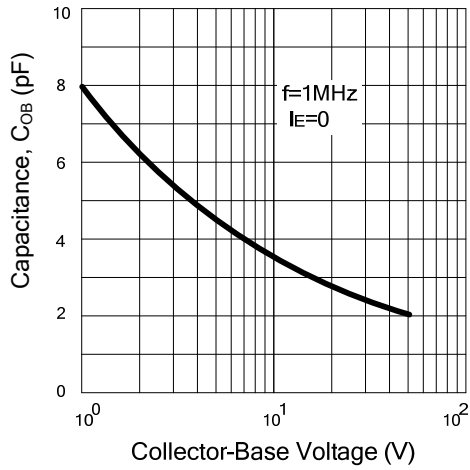
Note: Pulse test: $P_W < 300\mu\text{s}$, Duty Cycle $< 2\%$

■ CLASSIFICATION OF h_{FE}

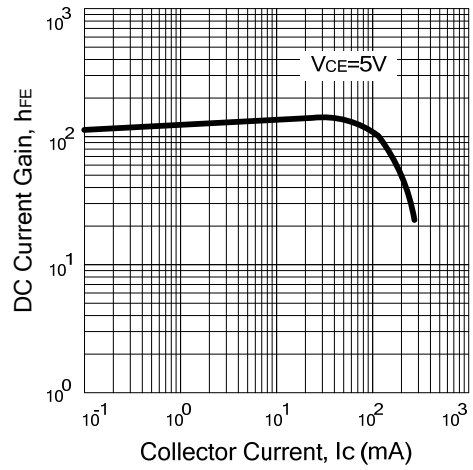
| RANK | A | B | C |
|-------|--------|---------|---------|
| RANGE | 80-170 | 150-240 | 200-400 |

TYPICAL CHARACTERISTICS

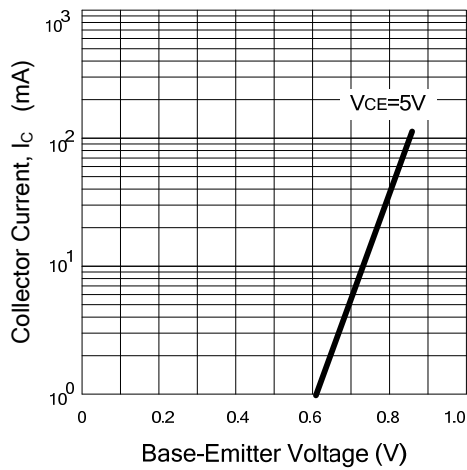
Capacitance vs. Collector-Base Voltage



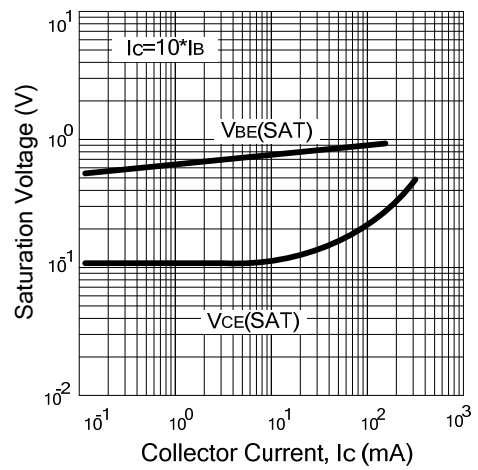
DC Current Gain vs. Collector Current



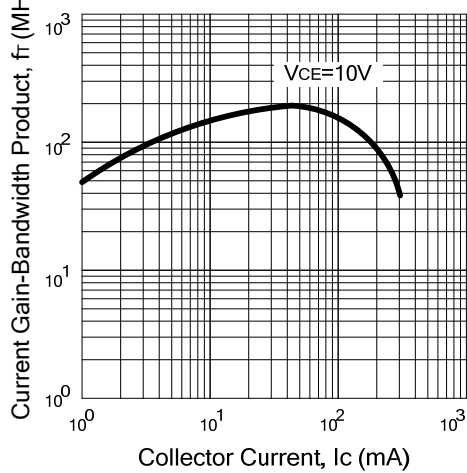
Collector Current vs. Base-Emitter Voltage



Saturation Voltage vs. Collector Current



Current Gain-Bandwidth product vs. Collector Current



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