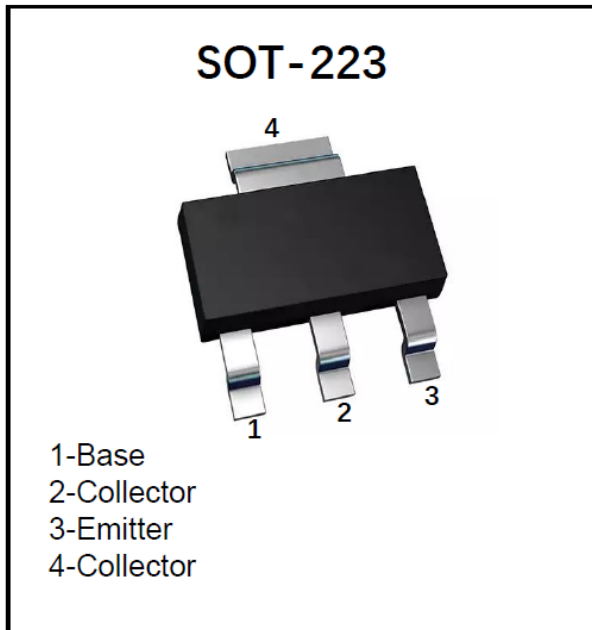


PNP Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- High current
- Part no. with suffix "Q" means AEC-Q101 qualified

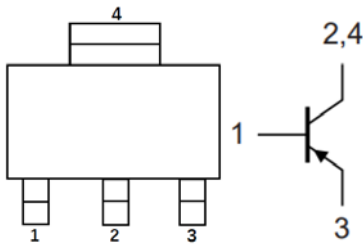
Application

- Switching and linear amplification

Mechanical Data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** ZT2907A

Equivalent circuit



Maximum Ratings (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Value |
|---|-----------------|------|-------------|
| Minimum Collector-Emitter Voltage | V_{CEO} | V | -60 |
| Minimum Collector-Base Voltage | V_{CBO} | V | -60 |
| Minimum Emitter-Base Voltage | V_{EBO} | V | -5 |
| Collector Current | I_C | A | -0.6 |
| Power Dissipation (*) | P_D | W | 1.15 |
| Thermal Resistance From Junction To Ambient (*) | $R_{\theta JA}$ | °C/W | 108 |
| Operation Junction Temperature | T_j | °C | -55 to +150 |
| Storage Temperature | T_{stg} | °C | -55 to +150 |

(*) Device mounted on FR-4 PCB, mounting pad for collector 1cm²



PZT2907AQ

■Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Min | Max |
|--------------------------------------|----------------|------|---|-----|------|
| Collector-base breakdown voltage | V_{CBO} | V | $I_C = -100\mu A, I_E = 0$ | -60 | - |
| Collector-emitter breakdown voltage | V_{CEO} | V | $I_C = -10mA, I_B = 0$ | -60 | - |
| Emitter-base breakdown voltage | V_{EBO} | V | $I_E = -100\mu A, I_C = 0$ | -5 | - |
| Collector-base cut-off current | I_{CBO} | nA | $V_{CB} = -50V, I_E = 0$ | - | -10 |
| Collector-emitter cut-off current | I_{EBO} | nA | $V_{EB} = -5V, I_C = 0$ | - | -50 |
| DC current gain | h_{FE} | | $V_{CE} = -10V, I_C = -0.1mA$ | 75 | - |
| | h_{FE} | | $V_{CE} = -10V, I_C = -1mA$ | 100 | - |
| | h_{FE} | | $V_{CE} = -10V, I_C = -10mA$ | 100 | - |
| | h_{FE} | | $V_{CE} = -10V, I_C = -150mA$ | 100 | 300 |
| | h_{FE} | | $V_{CE} = -10V, I_C = -500mA$ | 50 | - |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V | $I_C = -150mA, I_B = -15mA$ | - | -0.4 |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | V | $I_C = -500mA, I_B = -50mA$ | - | -1.6 |
| Base-emitter saturation voltage | $V_{BE(sat)*}$ | V | $I_C = -150mA, I_B = -15mA$ | - | -1.3 |
| Base-emitter saturation voltage | $V_{BE(sat)*}$ | V | $I_C = -500mA, I_B = -50mA$ | - | -2.6 |
| Transition frequency | f_T | MHz | $V_{CE} = -20V, I_C = -50mA, f = 100MHz$ | 200 | - |
| Delay time | t_d | ns | $V_{CC} = -30V, I_C = -150mA, I_{B1} = -15mA$ | - | 10 |
| Rise time | t_r | ns | | - | 25 |
| Storage time | t_s | ns | $V_{CC} = -6V, I_C = -150mA, I_{B1} = I_{B2} = -15mA$ | - | 225 |
| Fall time | t_f | ns | | - | 60 |

■Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| PZT2907AQ | F2 | Approximate 0.11 | 2500 | 5000 | 25000 | 13" reel |



■ Characteristics (Typical)

Fig.1 - Static characteristic

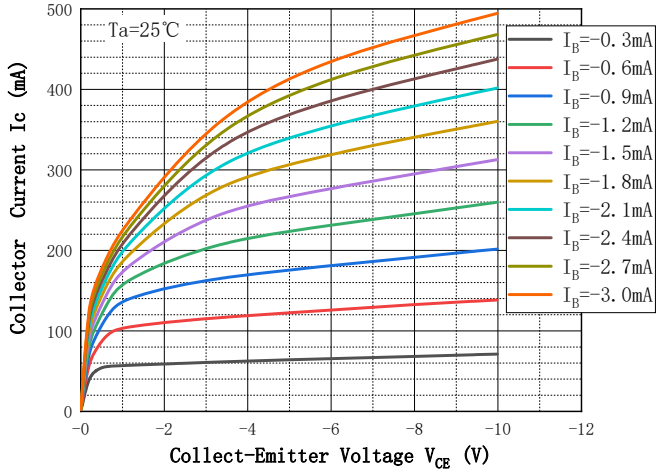


Fig.2 - DC Current Gain

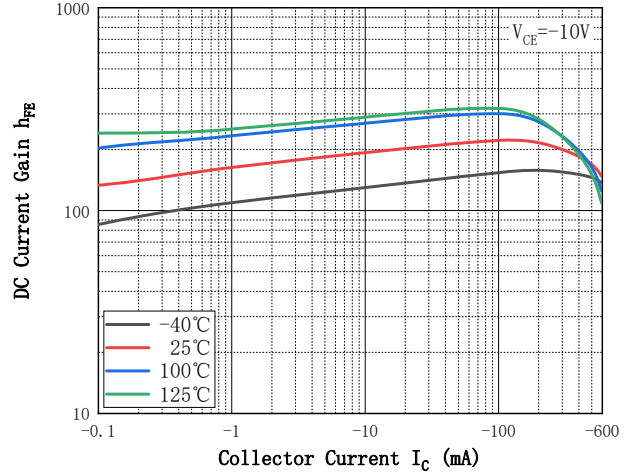


Fig.3 - Collect-Emmitter Saturation Voltage

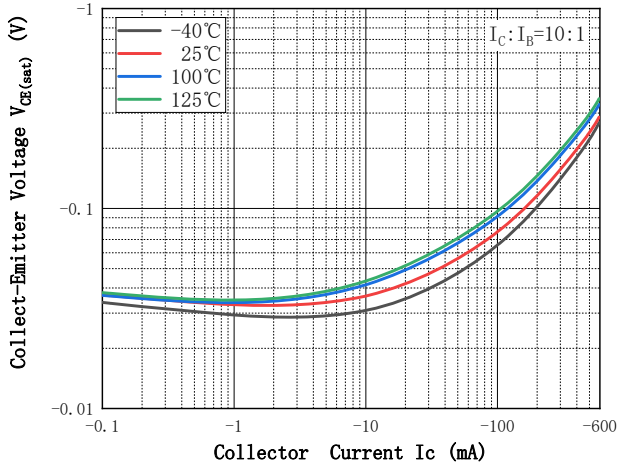


Fig.4 - Base-Emmitter Voltage

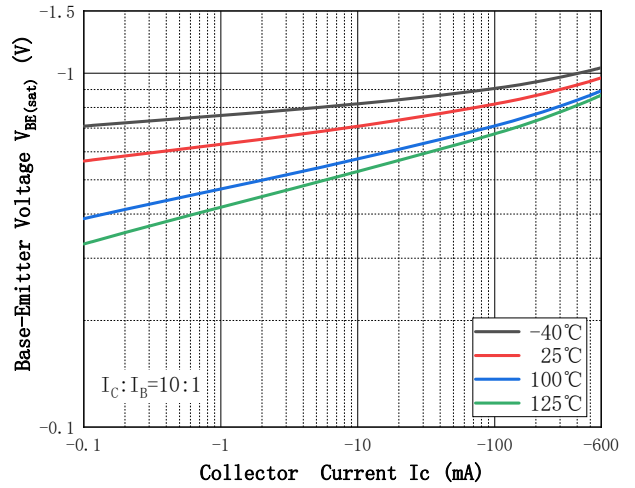


Fig.5 - Base-Emmitter On Voltage

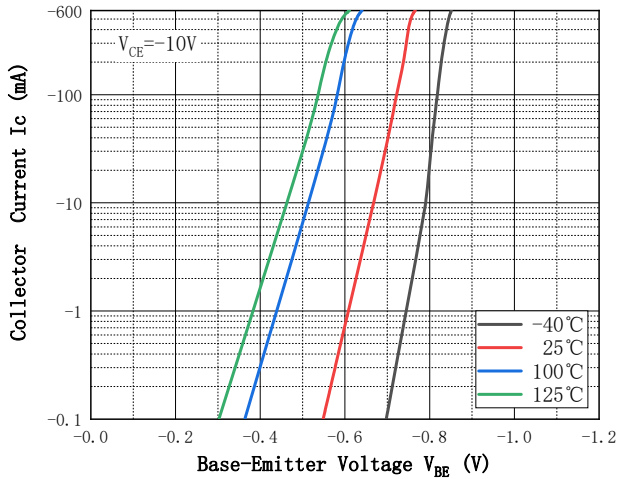


Fig.6 - Cob/Cib—VCB/VEB

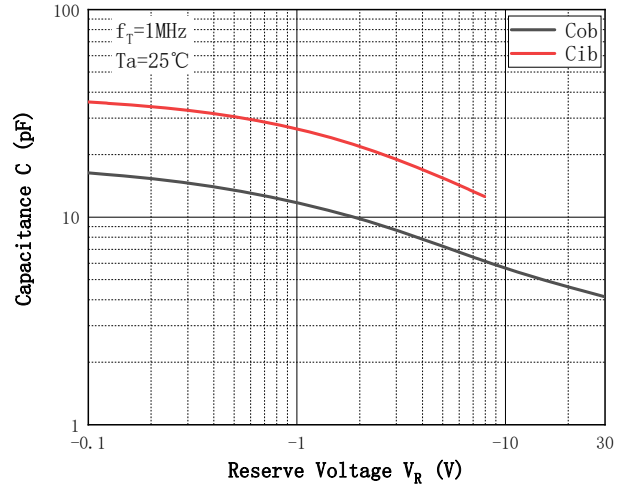
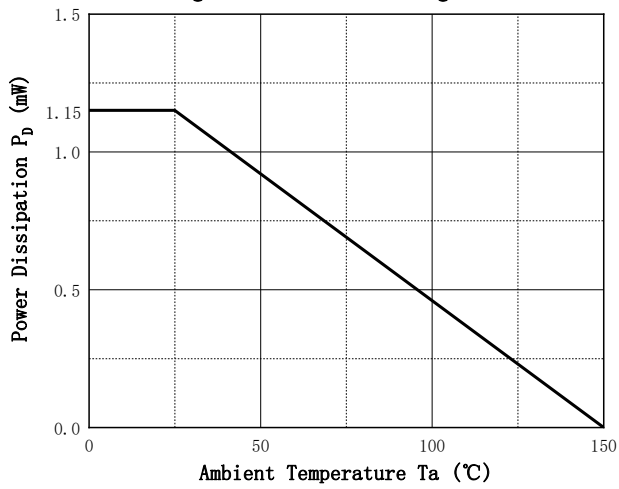
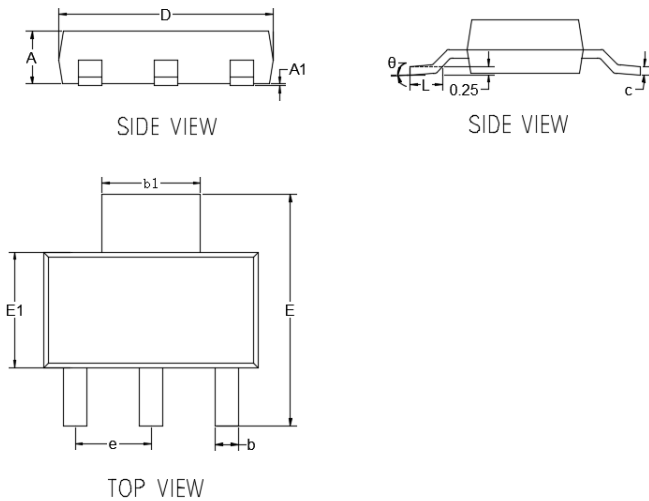


Fig. 7 - Power Derating Curve



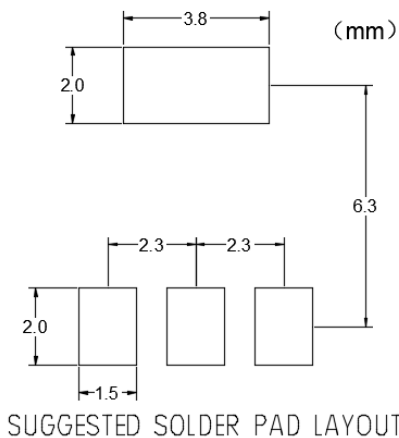
■SOT-223 Package Outline Dimensions

SOT-223



| DIM | DIMENSIONS | | | |
|----------|------------|--------|--------|--------|
| | INCHES | | MM | |
| | MIN | MAX | MIN | MAX |
| A | 0.0591 | 0.0670 | 1.5000 | 1.7000 |
| A1 | 0.0008 | 0.0039 | 0.0200 | 0.1000 |
| b | 0.0259 | 0.0330 | 0.6600 | 0.8400 |
| b1 | 0.1140 | 0.1220 | 2.9000 | 3.1000 |
| c | 0.0090 | 0.0138 | 0.2300 | 0.3500 |
| D | 0.2480 | 0.2640 | 6.3000 | 6.7000 |
| E | 0.2637 | 0.2874 | 6.7000 | 7.3000 |
| E1 | 0.1290 | 0.1460 | 3.3000 | 3.7000 |
| e | 0.0866 | 0.0945 | 2.2000 | 2.4000 |
| L | 0.0295 | 0.0492 | 0.7500 | 1.2500 |
| θ | 0° | 10° | 0° | 10° |

■SOT-223 Suggested Pad Layout





PZT2907AQ

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