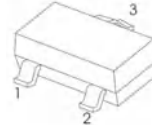




FEATURES

- Power dissipation

SOT-23



- 1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

| Symbol | Parameter | Value | Unit |
|-----------------|--|----------|-----------------------------|
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{CEO} | Collector-Emitter Voltage | 50 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 150 | mA |
| P_C | Collector Power Dissipation | 200 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 625 | $^{\circ}\text{C}/\text{W}$ |
| T_J, T_{stg} | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$ |

CLASSIFICATION OF h_{FE}

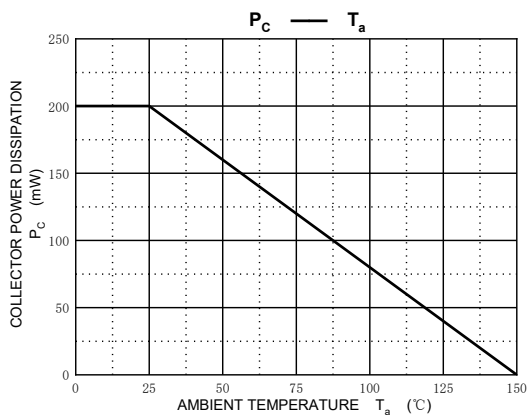
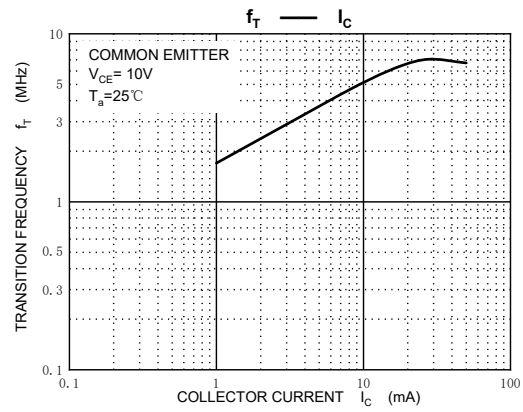
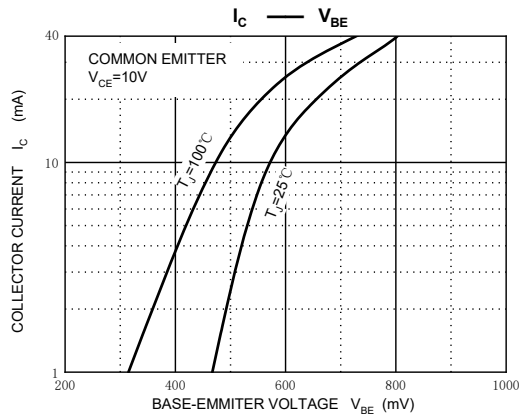
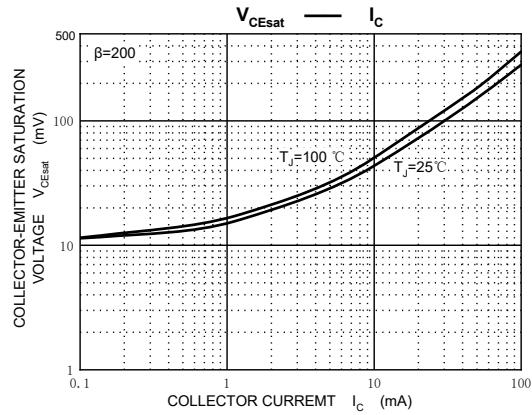
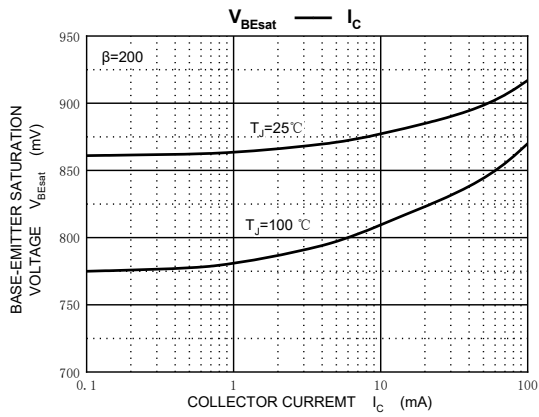
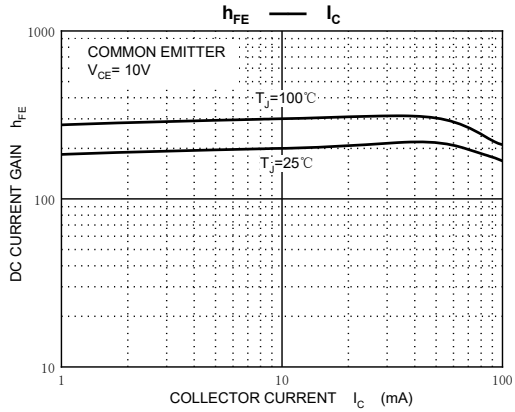
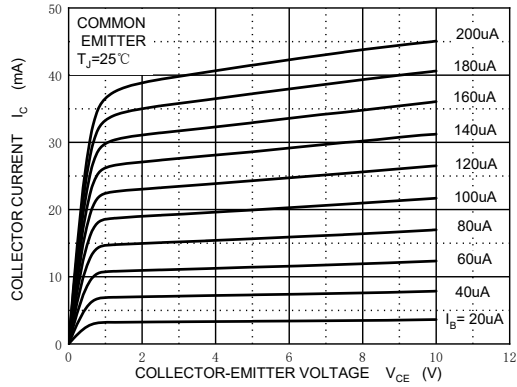
| Rank | L | H |
|-------|---------|---------|
| Range | 120-240 | 200-400 |

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|------|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 100\mu A, I_E = 0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 0.1mA, I_B = 0$ | 50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 100\mu A, I_C = 0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = 60V, I_E = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE} = 6V, I_C = 2mA$ | 120 | | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100mA, I_B = 10mA$ | | | 0.25 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 100mA, I_B = 10mA$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE} = 10V, I_C = 1mA,$ $f = 30MHz$ | 80 | | | MHz |

RATING AND CHARACTERISTIC CURVES

Static Characteristic



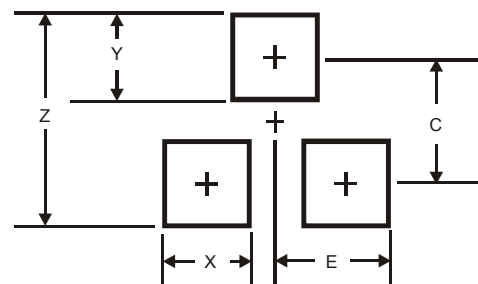
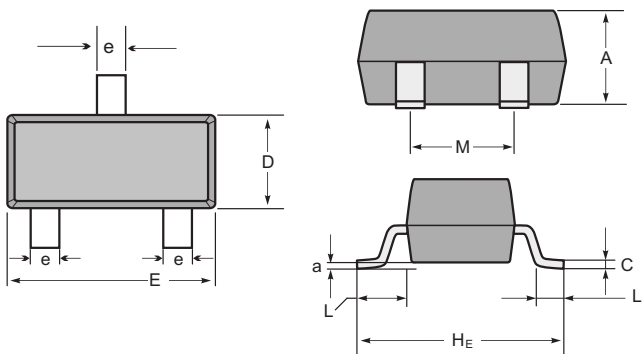
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |



Package Dimensions & Suggested Pad Layout

SOT23



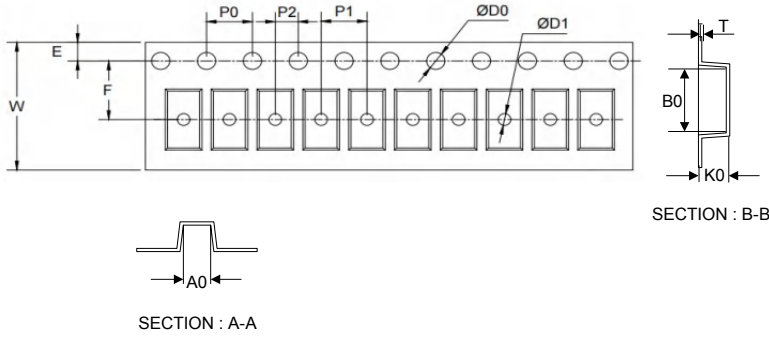
SOT-23 mechanical data

| UNIT | A | C | D | E | He | e | M | L | L ₁ | a | |
|------|-----|-----|------|-----|-----|-----|-----|------|----------------|------------|------|
| mm | max | 1.1 | 0.15 | 1.4 | 3.0 | 2.6 | 0.5 | 1.95 | 0.55 (ref) | 0.36 (ref) | 0.0 |
| | min | 0.9 | 0.08 | 1.2 | 2.8 | 2.2 | 0.3 | 1.7 | | | 0.15 |
| mil | max | 43 | 6 | 55 | 118 | 102 | 20 | 77 | 22 (ref) | 14 (ref) | 0.0 |
| | min | 35 | 3 | 47 | 110 | 87 | 12 | 67 | | | 6 |

| Dimensions | SOT23 |
|------------|-------|
| Z | 2.9 |
| X | 0.8 |
| Y | 0.9 |
| C | 2.0 |
| E | 1.35 |

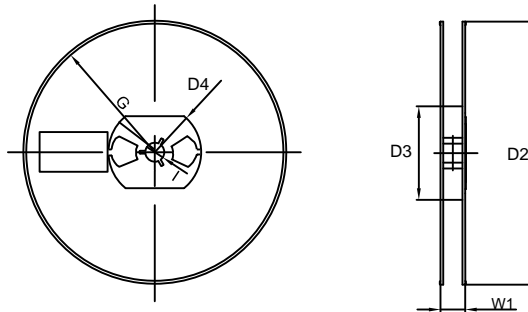
Tape & reel specification

Tape



| Symbol | Dimension (mm) |
|--------|----------------|
| P0 | 4.00±0.10 |
| P1 | 4.00±0.10 |
| P2 | 2.00±0.10 |
| D0 | 1.55±0.10 |
| D1 | 1.05±0.10 |
| E | 1.55±0.10 |
| F | 3.60±0.10 |
| W | 8.00±0.10 |
| A0 | 3.80±0.20 |
| B0 | 3.25±0.20 |
| K0 | 1.45±0.10 |
| T | 0.25±0.05 |
| D2 | 178.0±3.0 |
| D3 | 55Min. |
| D4 | R24.0±3.0 |
| G | R82.0±3.0 |
| I | 13.0±2.0 |
| W1 | 11.0±3.0 |

7" Reel



Quantity: 3000PCS