

SOT-23 Plastic-Encapsulate Transistors

Features

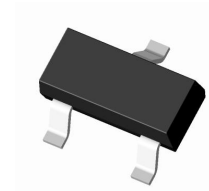
- Excellent hFE Linearity
- 200 mW Power Dissipation of 200mW
- High Stability and High Reliability

Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



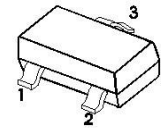
RoHS
COMPLIANT



Marking: CR

SOT-23

Pin definition



1. BASE
2. EMITTER
3. COLLECTOR

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

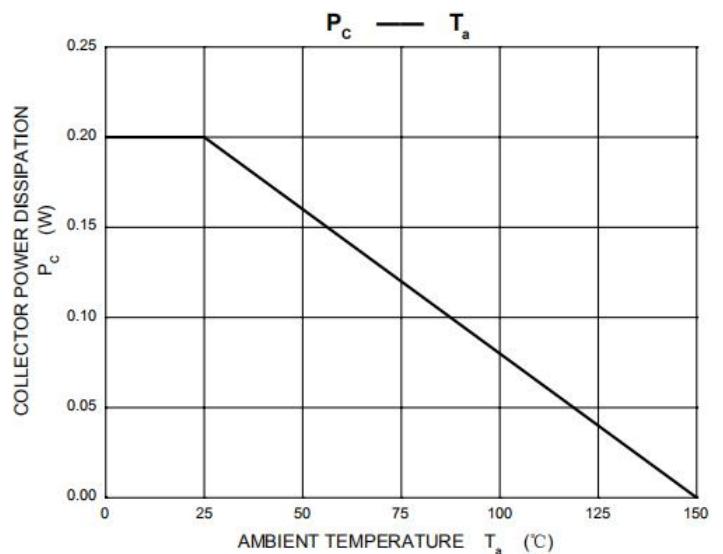
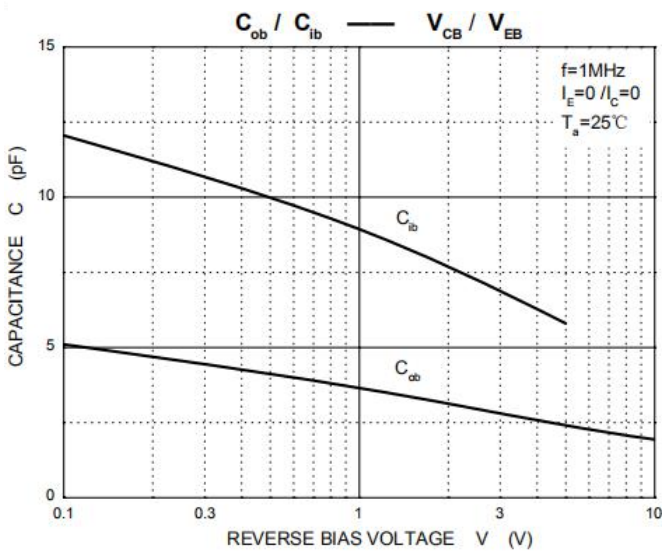
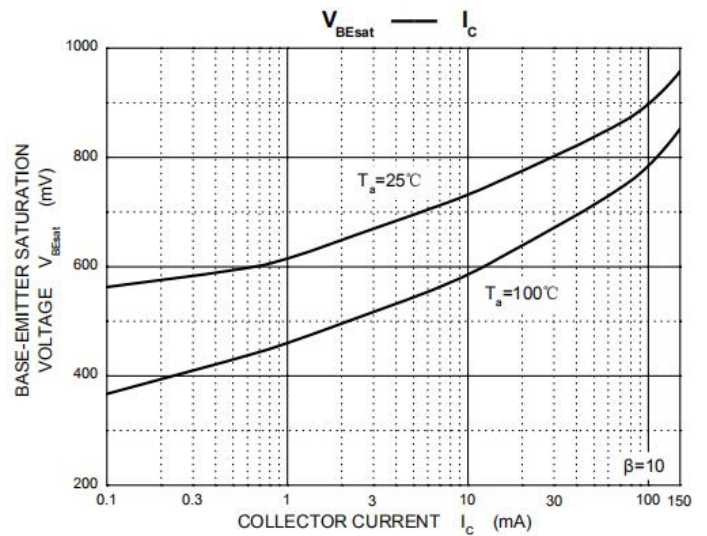
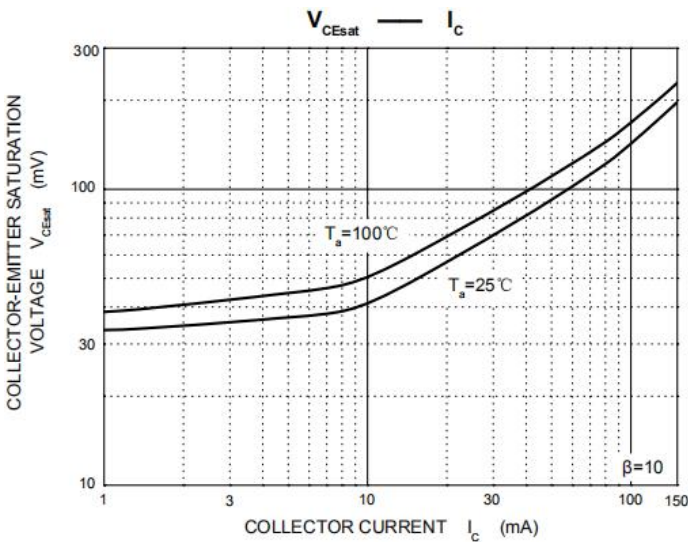
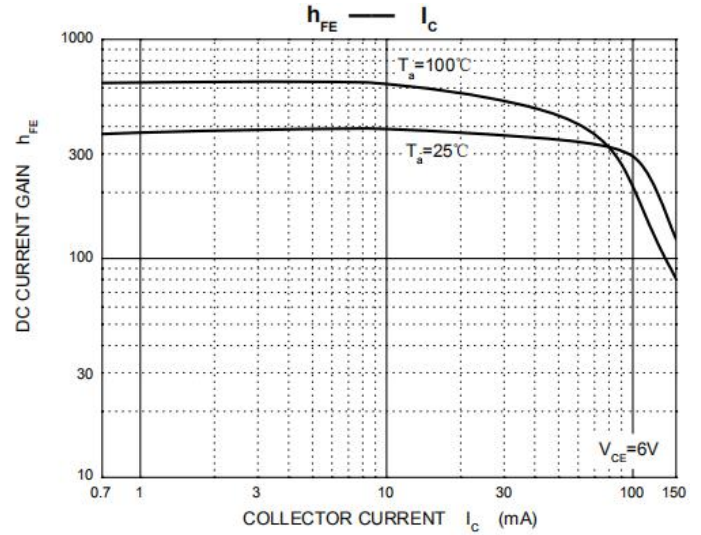
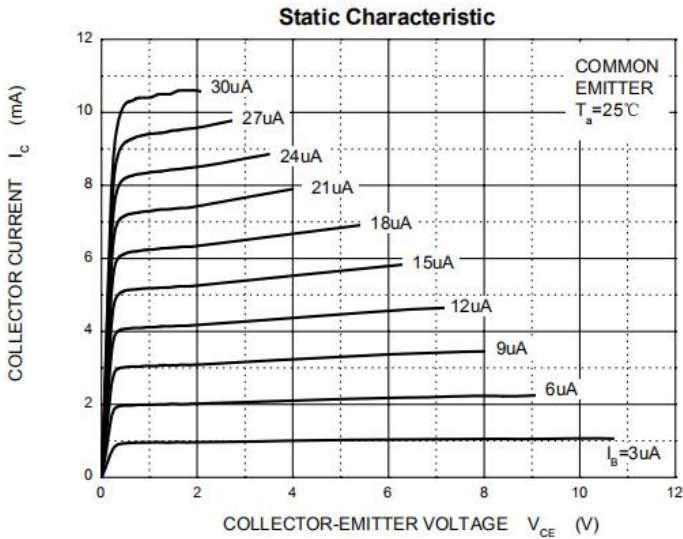
| Parameter | Symbol | Value | Unit |
|---|------------------|----------|------|
| Collector-Base Voltage | V _{CBO} | 60 | V |
| Collector-Emitter Voltage | V _{CEO} | 50 | V |
| Emitter -Base Voltage | V _{EBO} | 5 | V |
| Collector Current-Continuous | I _C | 150 | mA |
| Collector Power Dissipation | P _C | 200 | mW |
| Operating junction temperature range | T _J | 150 | °C |
| Storage temperature range | T _{STG} | -55-+150 | °C |
| Thermal Resistance from Junction to Ambient | R _{θJA} | 625 | °C/W |

| Electrical Specifications (T _A =25°C unless otherwise noted) | | | | | |
|---|----------------------|--|--------|-----|------|
| Parameter | Symbol | Test Conditions | Limits | | Unit |
| | | | Min | Max | |
| Collector-base breakdown voltage | V _{(BR)CBO} | I _C =100μA, I _E =0 | 60 | | V |
| Collector-emitter breakdown voltage | V _{(BR)CEO} | I _C =1mA, I _B =0 | 50 | | |
| Emitter-base breakdown voltage | V _{(BR)EBO} | I _E =0.1mA, I _C =0 | 5 | | |
| Collector cut-off current | I _{CBO} | V _{CB} =60V, I _E =0 | | 100 | nA |
| Emitter cut-off current | I _{EBO} | V _{EB} =5V, I _C =0 | | 100 | |
| Collector cut-off current | I _{CER} | V _{CE} =55V, R=10MΩ | | 100 | |
| DC current gain | h _{FE} (1) | V _{CE} =6V, I _C =1mA | 130 | 400 | |
| | h _{FE} (2) | V _{CE} =6V, I _C =0.1mA | 40 | | |
| 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 | |
| Transition frequency | f _T | V _{CE} =6V, I _C =10mA, f=30MHz | 150 | | MHz |
| Collector output capacitance | C _{ob} | V _{CB} =10V, I _E =0, f=1MHz | | 3 | pF |
| Noise figure | NF | V _{CE} =6V, I _C =0.1mA, R _g =10kΩ, f=1kHz | | 10 | dB |

| Classification OF h _{FE} (1) | | |
|---------------------------------------|---------|---------|
| HFE | 130-400 | |
| RANK | L | H |
| RANGE | 130-200 | 200-400 |

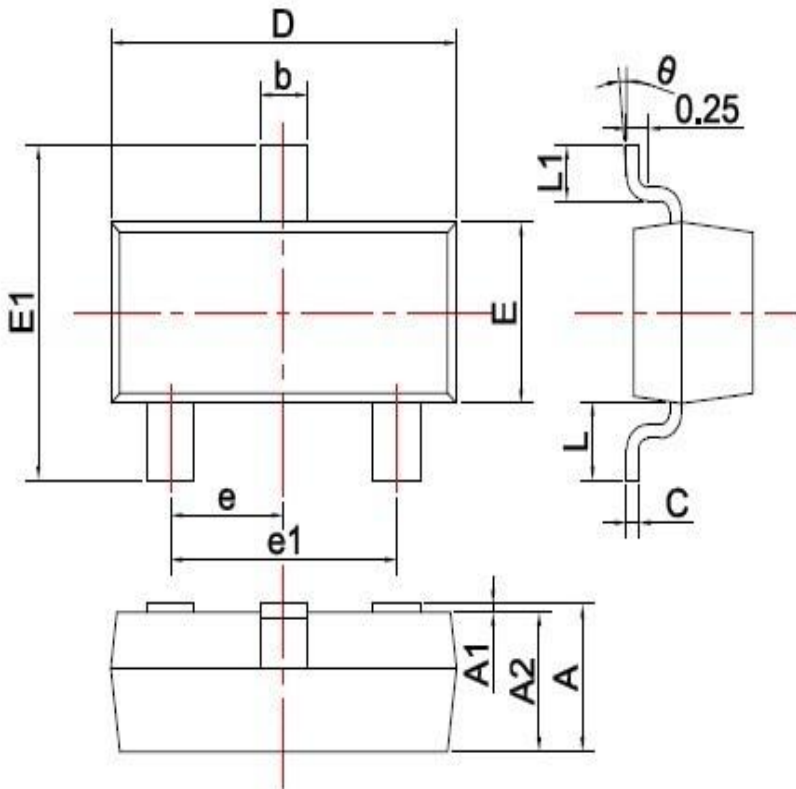
Ratings and Characteristics Curves

($T_A = 25^\circ\text{C}$ unless otherwise noted)



Package Outline Dimensions

in inches (millimeters)



| SYMBOL | DIMENSIONS | |
|--------|------------|-------|
| | MIN. | MAX. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.100 |
| A2 | 0.900 | 1.050 |
| b | 0.300 | 0.500 |
| c | 0.080 | 0.150 |
| D | 2.800 | 3.000 |
| E | 1.200 | 1.400 |
| E1 | 2.250 | 2.550 |
| e | 0.950TYP | |
| e1 | 1.800 | 2.000 |
| L | 0.550REF | |
| L1 | 0.300 | 0.500 |
| θ | 0° | 8° |

Unit: mm

Revision History

| Document Version | Date of release | Description of changes |
|------------------|-----------------|------------------------|
| Rev.A | 2019.04.04 | First issue |
| | | |
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