## FEATURES

High DC current gain. $h_{FE}$:200 TYP.($V_{CE}$=-1V,$I_C$=-100mA)
Complimentary to 2SD596.

SOT-23


1.BASE
2.EMITTER
3.COLLECTOR

## MAXIMUM RATINGS ($T_a$=25℃ unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | -30 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | -25 | V |
| $V_{EBO}$ | Emitter-Base Voltage | -5 | V |
| $I_C$ | Collector Current -Continuous | -700 | mA |
| $P_D$ | Total Device Dissipation | 200 | mW |
| $T_J$,$T_{stg}$ | Operation Junction and Storage Temperature Range | -55-150 | ℃ |

## ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)

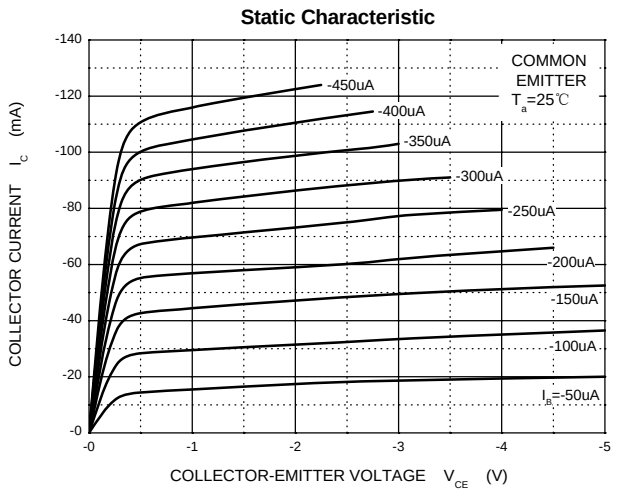
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Collector-base breakdown voltage** | $V_{(BR)CBO}$ | $I_C$=-100μA,$I_E$=0 | -30 | | | V |
| **Collector-emitter breakdown voltage** | $V_{(BR)CEO}$ | $I_C$= -1mA, $I_B$=0 | -25 | | | V |
| **Emitter-base breakdown voltage** | $V_{(BR)EBO}$ | $I_E$= -100μA, $I_C$=0 | -5 | | | V |
| **Collector cut-off current** | $I_{CBO}$ | $V_{CB}$=-30 V , $I_E$=0 | | | -0.1 | μA |
| **Emitter cut-off current** | $I_{EBO}$ | $V_{EB}$= -5V , $I_C$=0 | | | -0.1 | μA |
| **DC current gain** | $h_{FE(1)}$* | $V_{CE}$= -1V,$I_C$= -100mA | 110 | | 400 | |
| | $h_{FE(2)}$* | $V_{CE}$=-1V,$I_C$= -700mA | 50 | | | |
| **Collector-emitter saturation voltage** | $V_{CE(sat)}$ * | $I_C$=-700 mA, $I_B$= -70mA | | | -0.6 | V |
| **Base-emitter voltage** | $V_{BE}$* | $V_{CE}$=-6V, $I_C$=-10mA | -0.6 | | -0.7 | V |
| **Transition frequency** | $f_T$ | $V_{CE}$= -6V,$I_C$= -10mA | | 160 | | MHz |
| **Collector Output Capacitance** | $C_{ob}$ | VCB=-6V,IE=0,f=1MHz | | 17 | | pF |

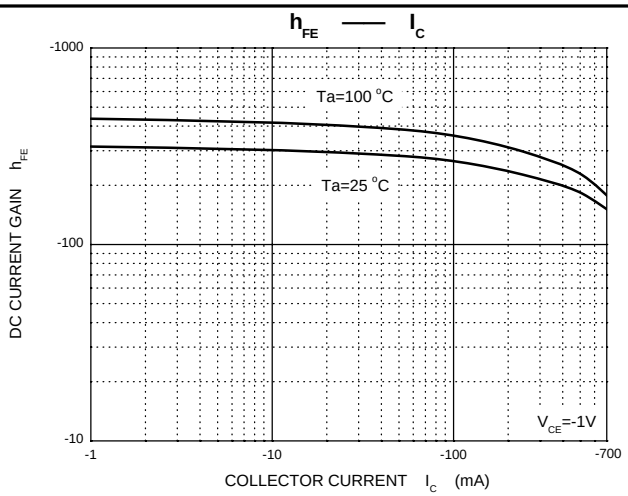
* Pulse test：Pulse width ≤350μs,Duty Cycle≤2%.

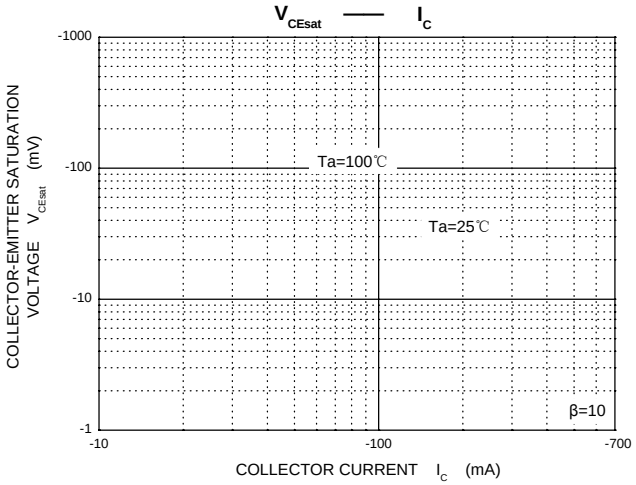
## CLASSIFICATION OF $h_{FE(1)}$

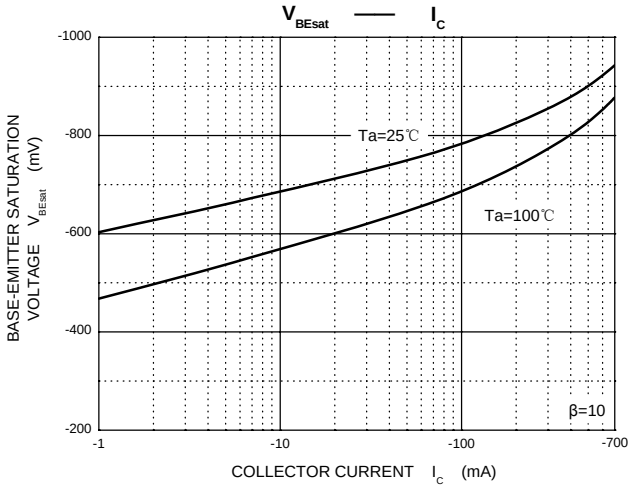
| **Marking** | BV1 | BV2 | BV3 | BV4 | BV5 |
|---|---|---|---|---|---|
| **Range** | 110-180 | 135-220 | 170-270 | 200-320 | 250-400 |

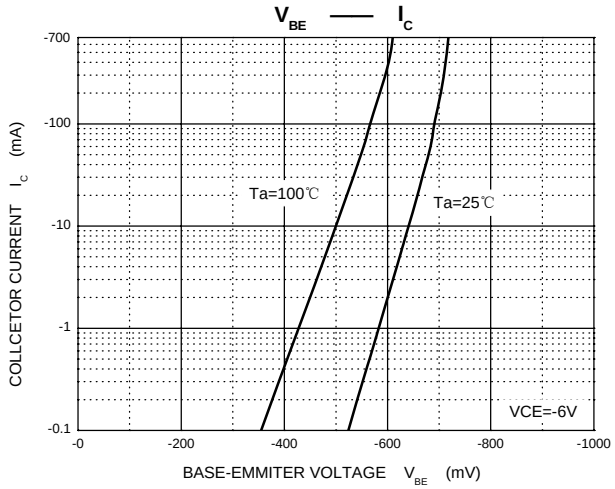
## Typical Characteristics

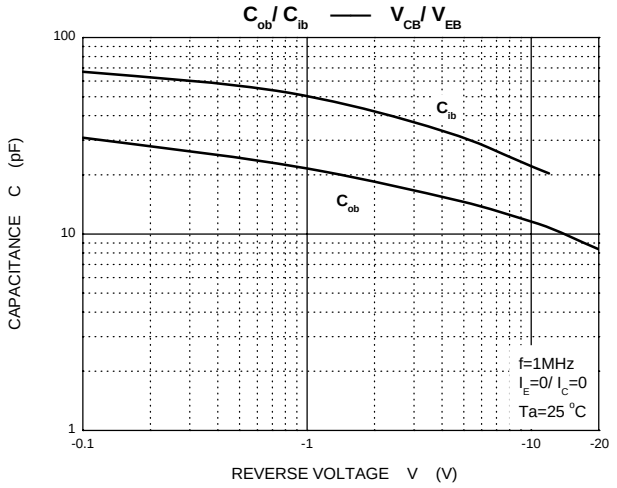


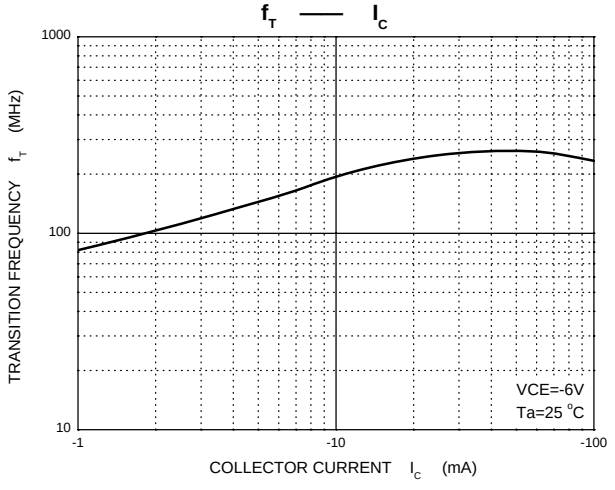



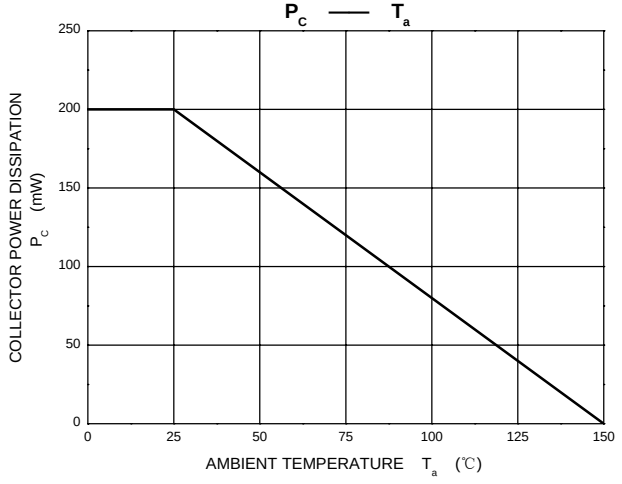



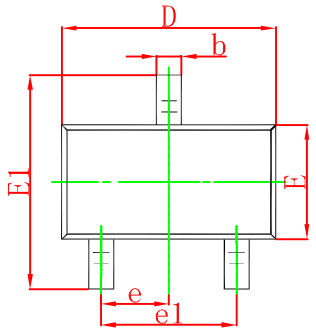



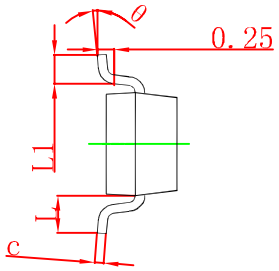



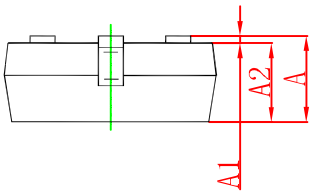



## SOT-23 Package Outline Dimensions

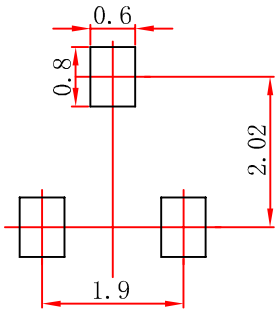



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

## SOT-23 Suggested Pad Layout




Note:
1.Controlling dimension:In millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.