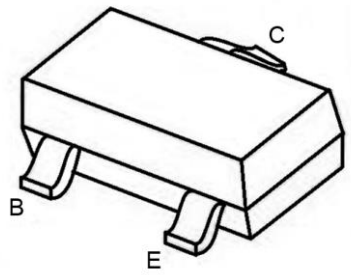
# A1015 Transistor(PNP)

**SOT-23**




## Feature

- High voltage and high current
- Excellent $h_{FE}$ linearity
- Complementary to C1815

**Marking：BA**

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | -50 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | -50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | -5 | V |
| Collector Current -Continuous | $I_C$ | -0.15 | A |
| Power Dissipation | $P_d$ | 0.2 | W |
| Thermal Resistance Form Junction to Ambient | $R_{\theta JA}$ | 625 | ℃/ W |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{STG}$ | -55~ +150 | ℃ |

## CLASSIFICATION OF $h_{FE}$

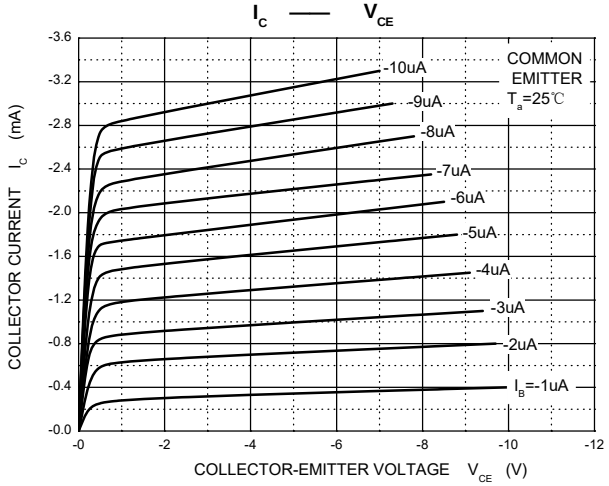
| Rank | L | H |
|---|---|---|
| Range | 120~240 | 200~400 |

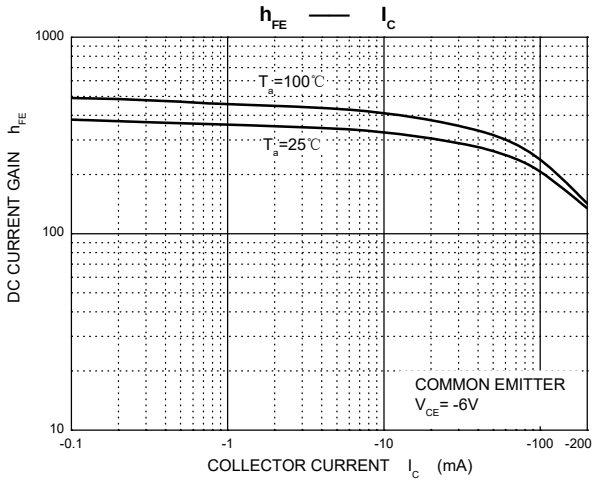
## ELECTRICAL CHARACTERISTICS($T_a$=25℃ unless otherwise noted)

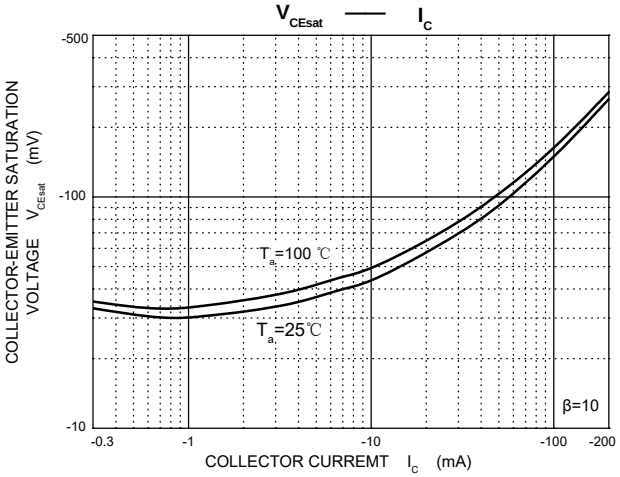
| Parameter | Symbol | Test Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V(BR)_{CBO}$ | $I_C$=-100μA ,$I_E$=0 | -50 | | V |
| Collector-emitter breakdown voltage | $V(BR)_{CEO}$ | $I_C$=-0.1mA , $I_B$=0 | -50 | | V |
| Emitter-base breakdown voltage | $V(BR)_{EBO}$ | $I_E$=-100μA,$I_C$=0 | -5 | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=-50V, $I_E$=0 | | -100 | nA |
| Collector cut-off current | $I_{CEX}$ | $V_{CE}$=-25V, $I_B$=0 | | -100 | nA |
| Base cut-off current | $I_{BEX}$ | $V_{CE}$=-25V, $I_B$=0 | | -100 | nA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=-5V, $I_C$=0 | | -100 | nA |
| DC current gain | $h_{FE}$ | $V_{CE}$=-5V, $I_C$=-1mA | 130 | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=-10mA, $I_B$=-1mA | | -0.2 | V |
| | | $I_C$=-100mA, $I_B$=-10mA | | -0.3 | V |
| Base-emitter saturation voltage* | $V_{BE(sat)}$ | $I_C$=-10mA, $I_B$=-1mA | | -0.85 | V |
| | | $I_C$=-100mA, $I_B$=-10mA | | -0.95 | V |
| Transition frequency | $f_T$ | $V_{CE}$= -5V, $I_C$=-10mA,f=30MHz | 150 | | MHz |
| Delay time | $t_d$ | $V_{CC}$=-3V,$V_{BE}$=-0.5V, | | 35 | ns |
| Rise time | $t_r$ | $I_C$=-10mA,$I_b$=-1mA | | 35 | ns |
| Storage time | $t_s$ | $V_{CC}$=-3V,$V_{BE}$=-0.5V, | | 200 | ns |
| Fall time | $t_f$ | $I_{B1}$=$I_{B2}$=-1mA | | 50 | ns |

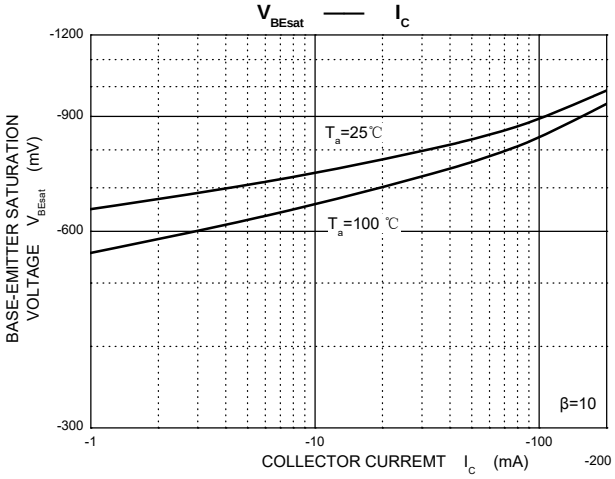
***Pulse Test: Pulse Width<300us，Duty Cycle<2.0%**

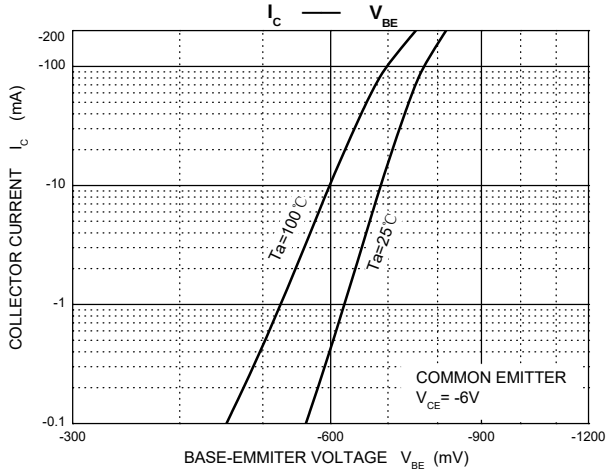
## Typical Characteristics

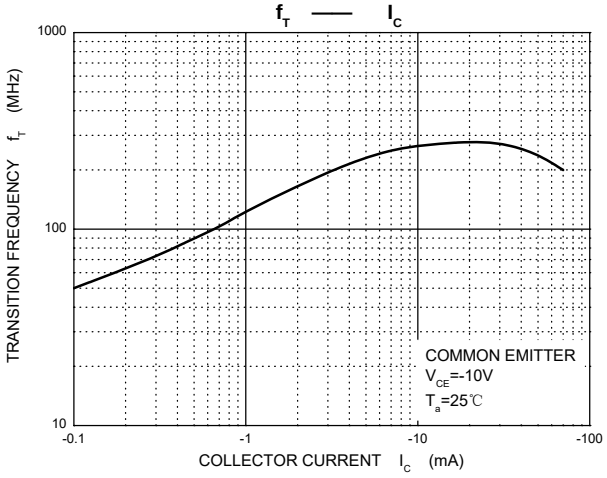


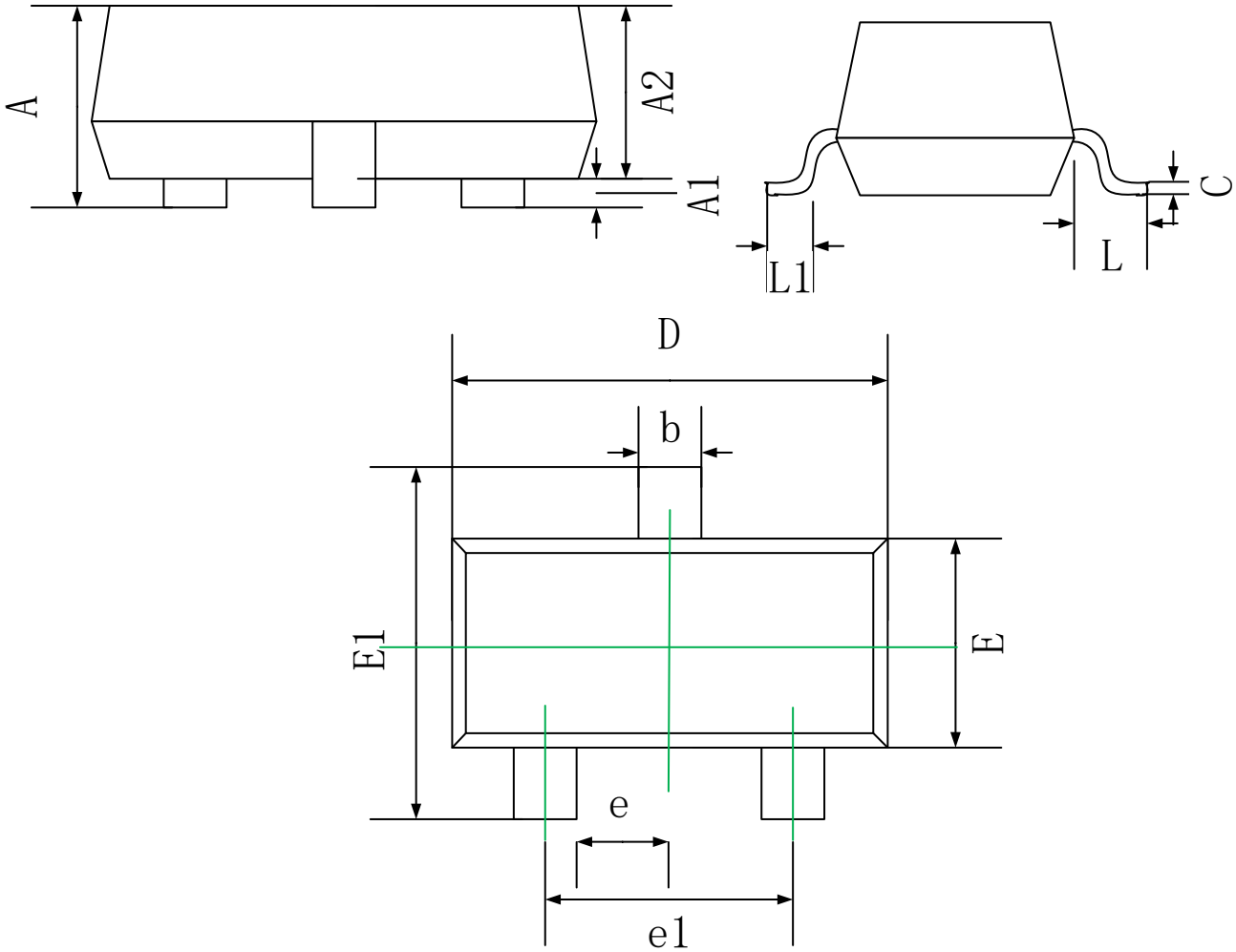



## SOT-23 Package Information




| Symbol | Dimensions In Millimeters | |
|---|---|---|
| | Min. | Max. |
| A | 0.900 | 1.150 |
| A1 | 0.000 | 0.125 |
| 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 | 0.95 REF. | |
| e1 | 1.800 | 2.000 |
| L | 0.55 REF. | |
| L1 | 0.300 | 0.500 |