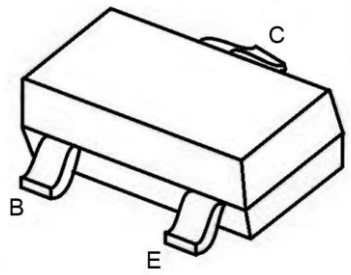
# **SS8050** Transistor(NPN)

**SOT-23**



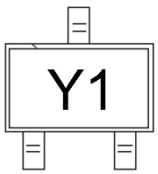

**Feature**

- NPN epitaxial silicon , planar design
- Collector-emitter voltage VCE=25V
- Collector current IC=1.5A
- In compliance with ER RoHS 2002/95/EC directives
- Transition frequency $f_T$ >100MHz@IC=50mAdc, VCE=10Vdc,F=30MHz

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 40 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 25 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current -Continuous | $I_C$ | 1.5 | A |
| Power Dissipation | $P_d$ | 0.3 | W |
| Junction Temperature | $T_J$ | 150 | ℃ |
| Storage Temperature | $T_{STG}$ | -55~ +150 | ℃ |

**MARKING:**




**Classification of hfe:**

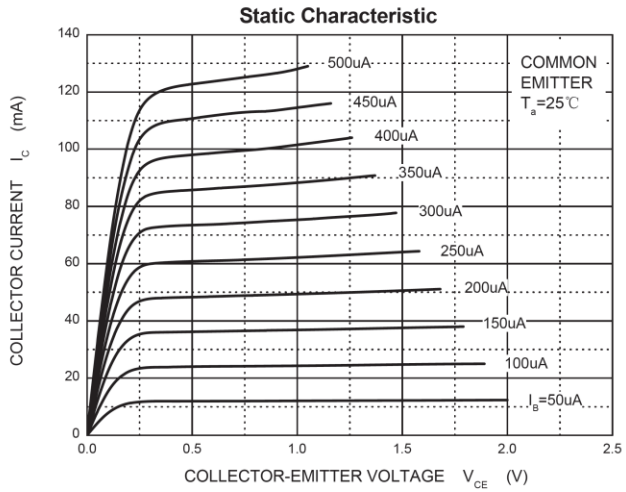
| RANK | L | H | J |
|---|---|---|---|
| RANGE | 120~200 | 200~350 | 350~400 |

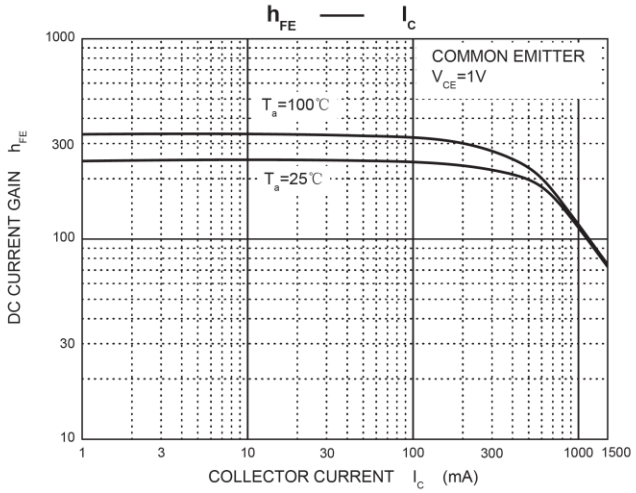
## ELECTRICAL CHARACTERISTICS($T_a$=25℃ unless otherwise noted)

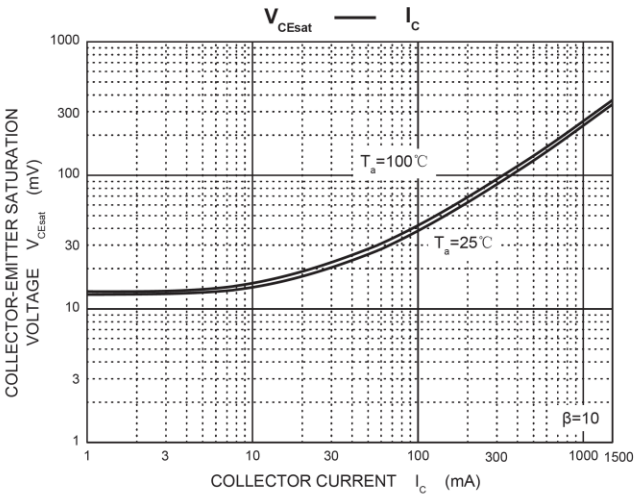
| Parameter | Symbol | Test Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Collector-base breakdown voltage | $V(BR)_{CBO}$ | $I_C$=100μA ,$I_E$=0 | 40 | | V |
| Collector-emitter breakdown voltage | $V(BR)_{CEO}$ | $I_C$=1mA , $I_B$=0 | 25 | | V |
| Emitter-base breakdown voltage | $V(BR)_{EBO}$ | $I_E$=100μA,$I_C$=0 | 5 | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=40V, $I_E$=0 | | 100 | nA |
| Collector cut-off current | $I_{CEO}$ | $V_{CE}$=20V, $I_B$=0 | | 100 | nA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | | 100 | nA |
| DC current gain | $h_{FE}$ | $V_{CE}$=1V, $I_C$=0.1mA | 40 | | |
| | $h_{FE}$ | $V_{CE}$=1V, $I_C$=1mA | 70 | | |
| | $h_{FE}$ | $V_{CE}$=1V, $I_C$=100mA | 100 | 400 | |
| | $h_{FE}$ | $V_{CE}$=1V, $I_C$=400mA | 60 | | |
| | $h_{FE}$ | $V_{CE}$=1V, $I_C$=800mA | 30 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=800mA, $I_B$=80mA | | 0.5 | V |
| | | $I_C$=500mA, $I_B$=50mA | | 0.6 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=100mA, $I_B$=10mA | | 1.1 | V |
| | | $I_C$=800mA, $I_B$=80mA | | 1.2 | V |
| Transition frequency | $f_T$ | $V_{CE}$= 10V, $I_C$=50mA,f=30MHz | 100 | | MHZ |
| Input capacitance | $C_{IB}$ | $V_{CB}$= 5V,$I_E$=0, f=1MHz | | 4 | pF |
| Output capacitance | $C_{OB}$ | $V_{EB}$= 0.5V,$I_C$=0, f=1MHz | | 8 | pF |
| 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 |

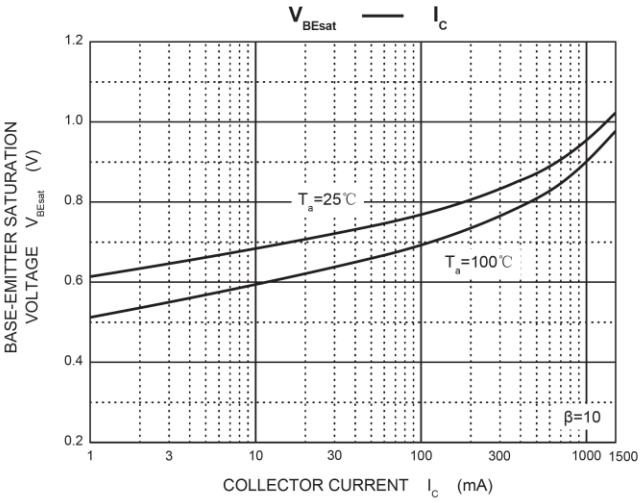
***Pulse Test: Pulse Width<300uS , Duty Cycle<2.0%**

## Typical Characteristics

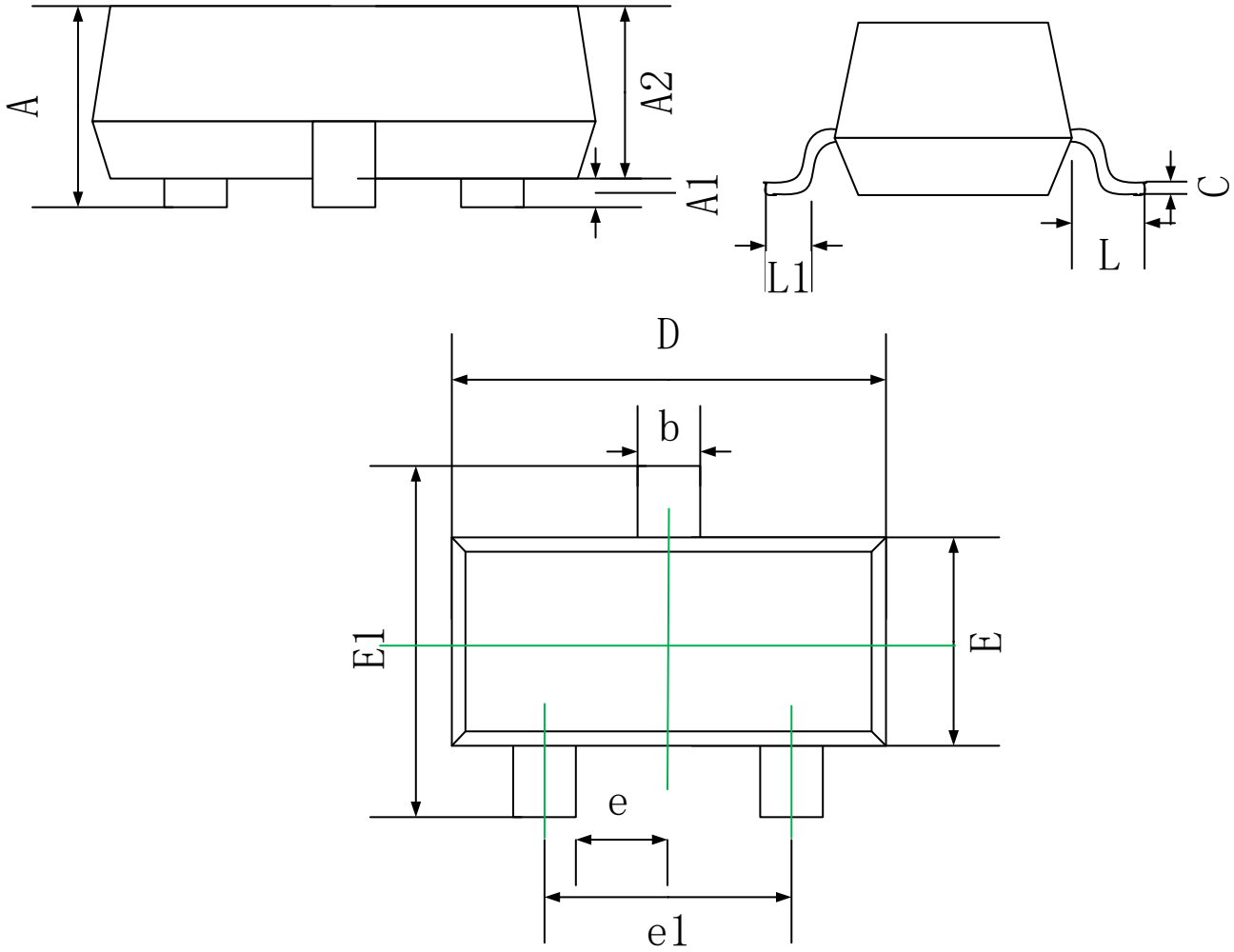


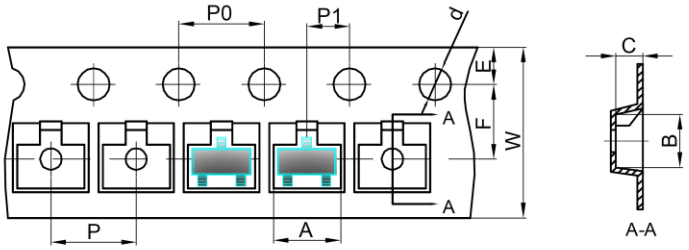
## SOT-23 Package Information




| Symbol | Dimensions In Millimeters | |
|---|---|---|
| | Min. | Max. |
| A | 0.90 | 1.15 |
| A1 | 0.00 | 0.10 |
| A2 | 0.90 | 1.05 |
| b | 0.30 | 0.50 |
| c | 0.08 | 0.15 |
| D | 2.80 | 3.00 |
| E | 1.20 | 1.40 |
| E1 | 2.25 | 2.55 |
| e | 0.95 REF. | |
| e1 | 1.80 | 2.00 |
| L | 0.55 REF. | |
| L1 | 0.30 | 0.50 |

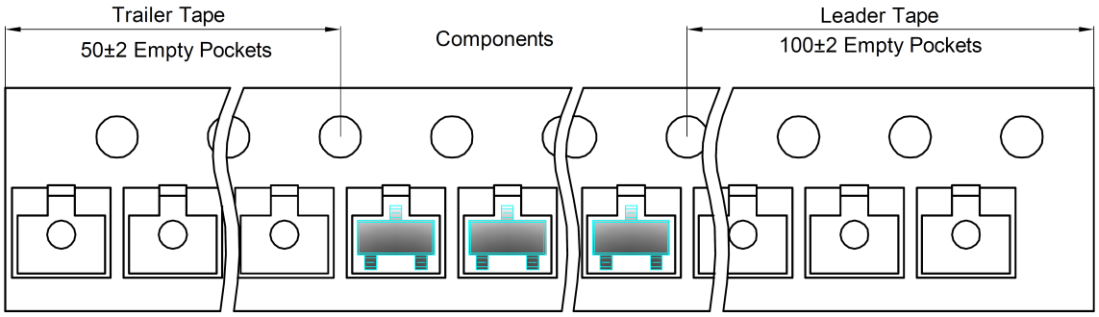
# SOT-23 Tape and reel

## SOT-23 Embossed Carrier Tape

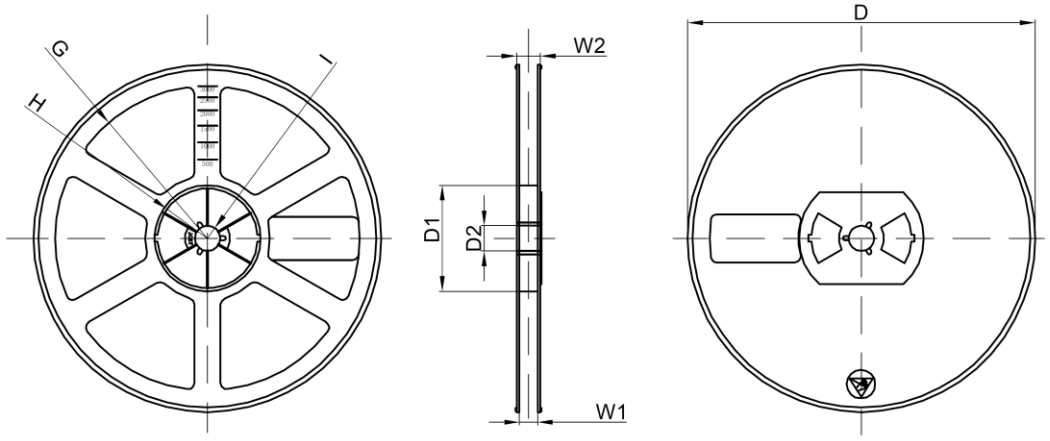



| Dimensions are in millimeter | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

## SOT-23 Tape Leader and Trailer




## SOT-23 Reel




| Dimensions are in millimeter | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|---|---|---|---|---|---|---|
| 3000 pcs | 7 inch | 30,000 pcs | 203×203×195 | 120,000 pcs | 438×438×220 | |