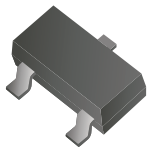
# General Purpose Transistor

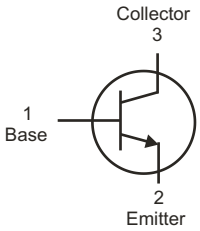
# SS8050-G (NPN)

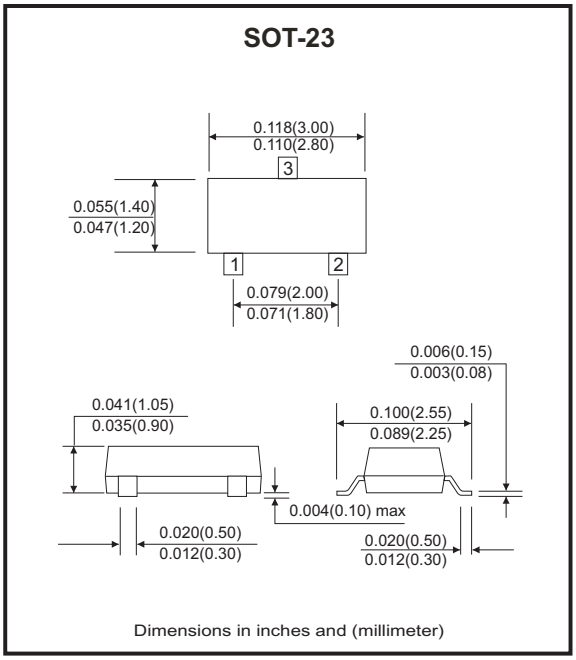
## RoHS Device



## Diagram:

1 : BASE
2 : EMITTER
3 : COLLECTOR




## Maximum Ratings (at $T_A$=25°C 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 | $I_C$ | 1.5 | A |
| Collector power dissipation | $P_C$ | 300 | mW |
| Thermal resistance from junction to ambient | $R_{\theta JA}$ | 417 | °C/W |
| Junction temperature | $T_J$ | 150 | °C |
| Storage temperature | Tstg | -55~+150 | °C |

## Electrical Characteristics (at $T_A$=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-Base breakdown voltage | $I_C$ =100μA , $I_E$=0 | $V_{(BR)CBO}$ | 40 | - | - | V |
| Collector-Emitter breakdown voltage | $I_C$ =0.1mA , $I_B$=0 | $V_{(BR)CEO}$ | 25 | - | - | V |
| Emitter-Base breakdown voltage | $I_E$ =100μA , $I_C$=0 | $V_{(BR)EBO}$ | 5 | - | - | V |
| Collector cut-off current | $V_{CB}$=40V , $I_E$=0 | $I_{CBO}$ | - | - | 0.1 | μA |
| Collector cut-off current | $V_{CE}$=20V , $I_E$=0 | $I_{CEO}$ | - | - | 0.1 | μA |
| Emitter cut-off current | $V_{EB}$=5V , $I_C$=0 | $I_{EBO}$ | - | - | 0.1 | μA |
| DC current gain | $V_{CE}$=1V , $I_C$=100mA | $h_{FE(1)}$ | 200 | - | 350 | |
| | $V_{CE}$=1V , $I_C$=800mA | $h_{FE(2)}$ | 40 | - | - | |
| Collector-Emitter saturation voltage | $I_C$=800mA , $I_B$=80mA | $V_{CE}$(sat) | - | - | 0.5 | V |
| Base-Emitter saturation voltage | $I_C$=800mA , $I_B$=80mA | $V_{BE}$(sat) | - | - | 1.2 | V |
| Transition frequency | $V_{CE}$=10V, $I_C$=50mA, f=30MHz | $f_T$ | 100 | - | - | MHz |

## RATING AND CHARACTERISTIC CURVES (SS8050-G)

Fig.1 - Static Characteristic

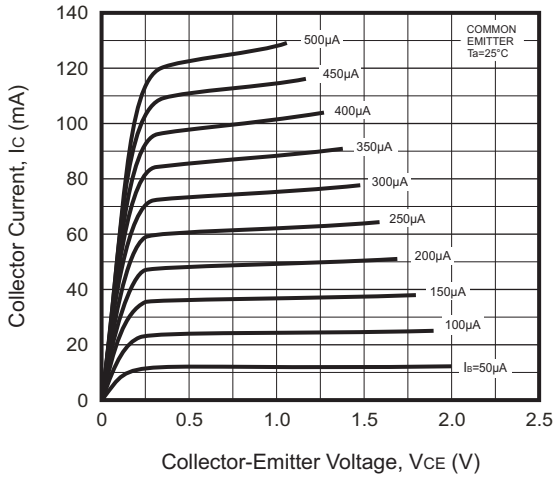



Fig.2 - $h_{FE}$ — $I_C$

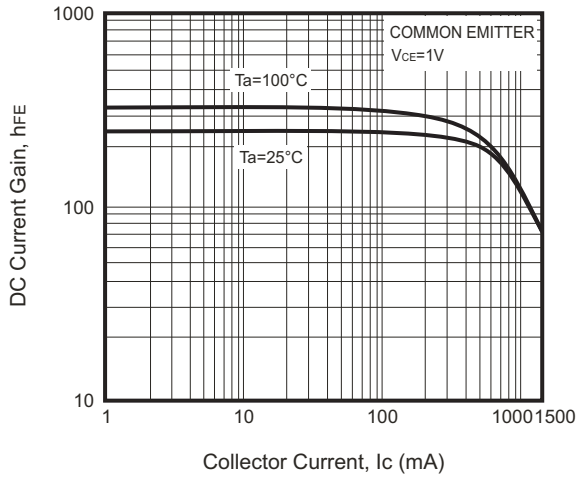



Fig.3 - $V_{CEsat}$ — $I_C$

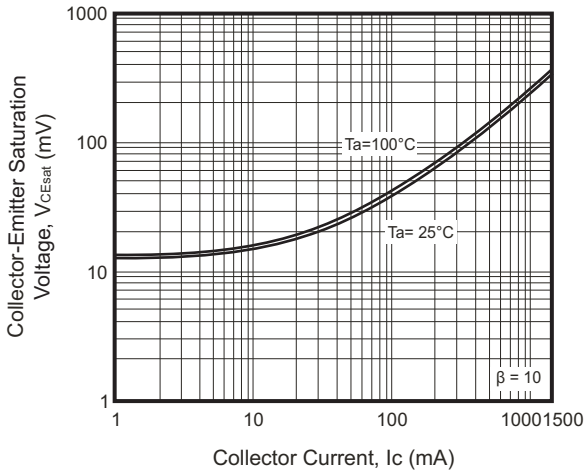



Fig.4 - $V_{BEsat}$ — $I_C$

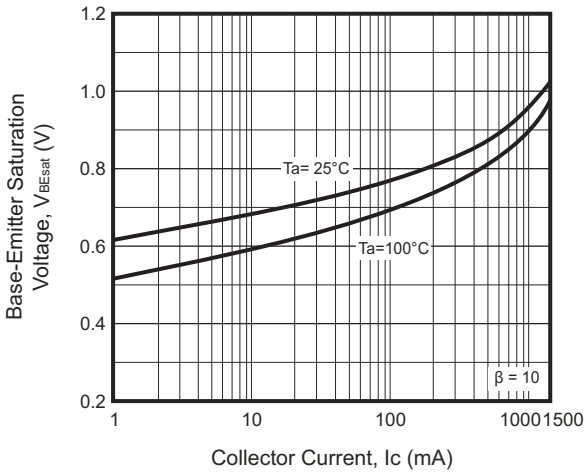



Fig.5 - $V_{BE}$ — $I_C$

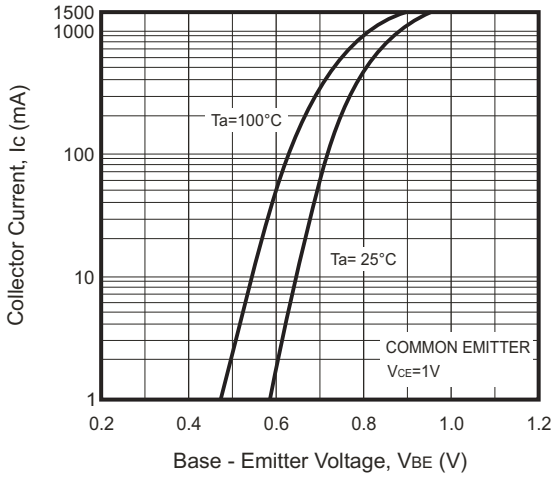
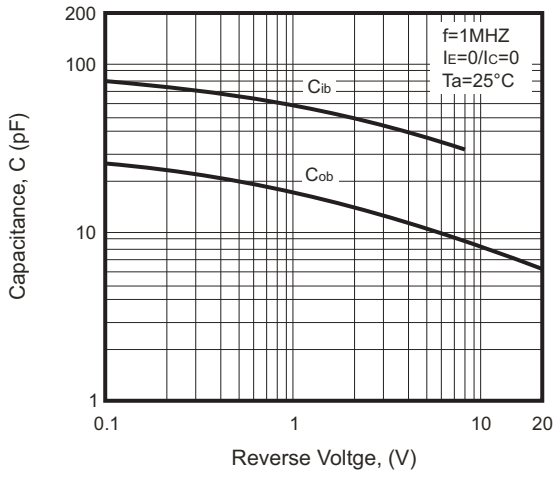



Fig.6 - $C_{ob}/C_{ib}$ — $V_{CB}/V_{EB}$




Company reserves the right to improve product design , functions and reliability without notice.

## RATING AND CHARACTERISTIC CURVES (SS8050-G)

Fig.7 - $F_T$ — $I_C$

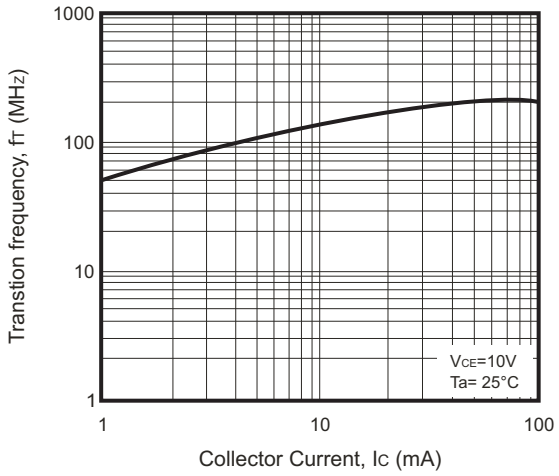
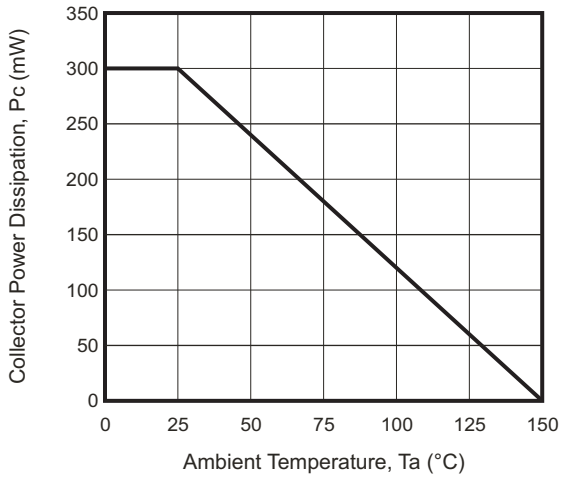
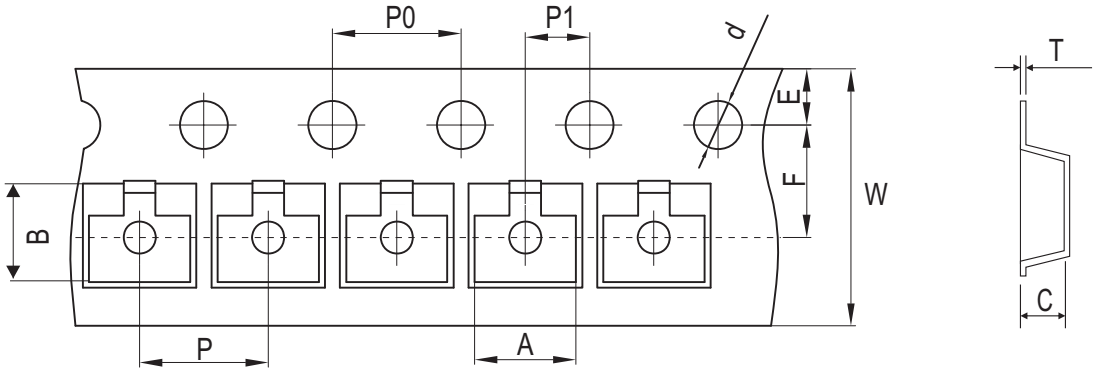
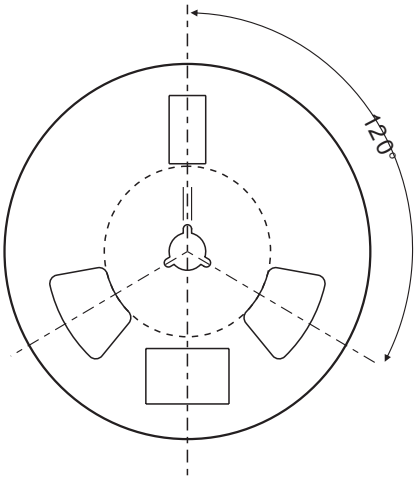


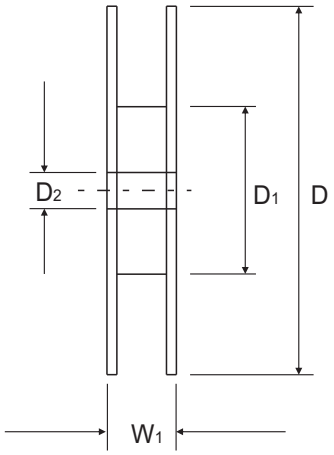

Fig.8 - $P_C$ – Ta

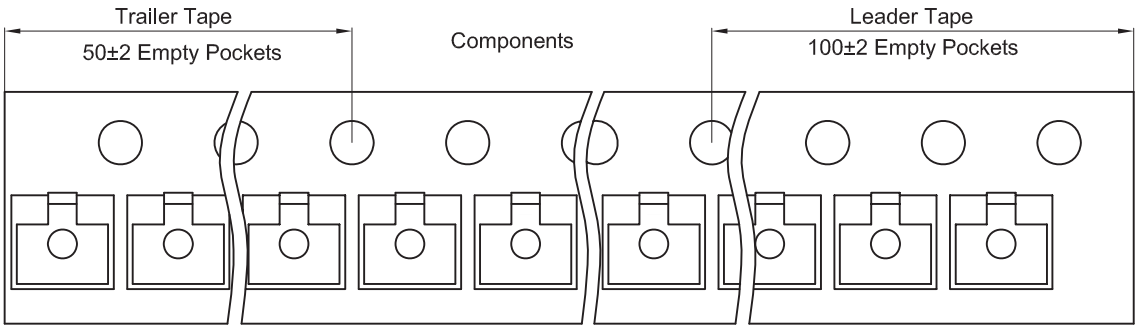


## Reel Taping Specification



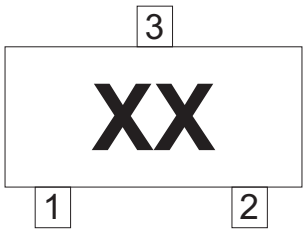




| | SYMBOL | A | B | C | d | D | D1 | D2 |
|---|---|---|---|---|---|---|---|---|
| SOT-23 | (mm) | 3.15 ± 0.10 | 2.77 ± 0.10 | 1.22 ± 0.10 | 1.50 ± 0.10 | 178.00 ± 2.00 | 54.40 ± 1.00 | 13.00 ± 1.00 |
| | (inch) | 0.124 ± 0.004 | 0.109 ± 0.004 | 0.048 ± 0.004 | 0.059 ± 0.004 | 7.087 ± 0.079 | 2.142 ± 0.039 | 0.512 ± 0.039 |

| | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|---|---|---|---|---|---|---|---|---|
| SOT-23 | (mm) | 1.75 ± 0.10 | 3.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 8.00 + 0.30 / - 0.10 | 12.30 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.315 + 0.012 / - 0.004 | 0.484 ± 0.039 |

## Marking Code

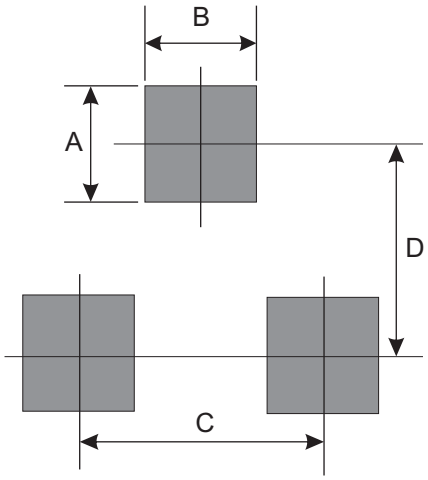
| Part Number | Marking Code |
|---|---|
| SS8050-G | Y1 |




**xx = Product type marking code**

## Suggested PAD Layout

| SIZE | SOT-23 | |
|---|---|---|
| | (mm) | (inch) |
| A | 0.80 | 0.031 |
| B | 0.60 | 0.024 |
| C | 1.90 | 0.075 |
| D | 2.02 | 0.080 |




Note:
1.General tolerance: ±0.05mm.
2.The pad layout is for reference purposes only.

## Standard Packaging

| Case Type | REEL PACK | |
|---|---|---|
| | REEL ( pcs ) | Reel Size (inch) |
| SOT-23 | 3,000 | 7 |

# Mouser Electronics

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