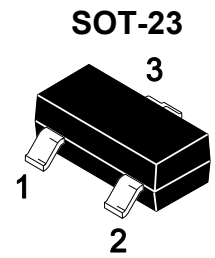


Features

- For Switching and AF Amplifier Applications.



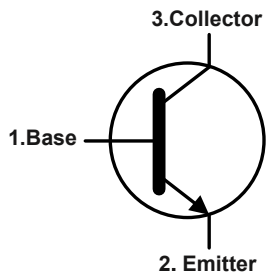
1.Base 2.Emitter 3.Collector

Marking Code:

MMBT8050C : D9C

MMBT8050D : D9D

Equivalent Circuit



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|-------------|------|
| Collector Base Voltage | V_{CB0} | 40 | V |
| Collector Emitter Voltage | V_{CEO} | 25 | V |
| Emitter Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_c | 600 | mA |
| Maximum Power Dissipation | P_D | 350 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

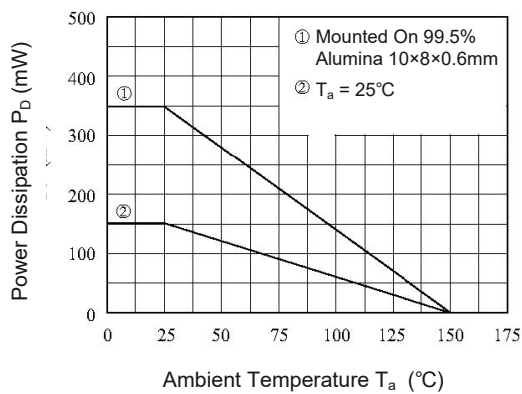
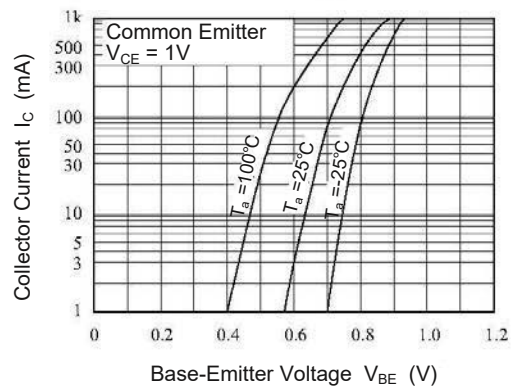
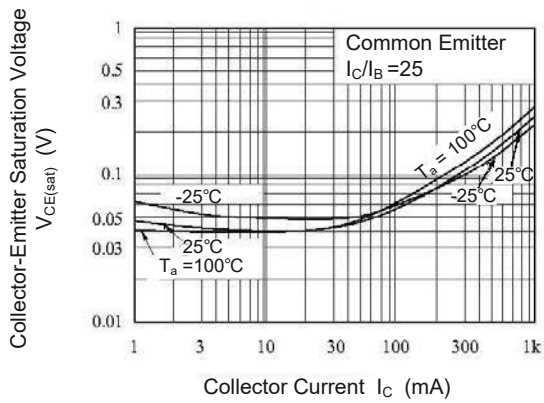
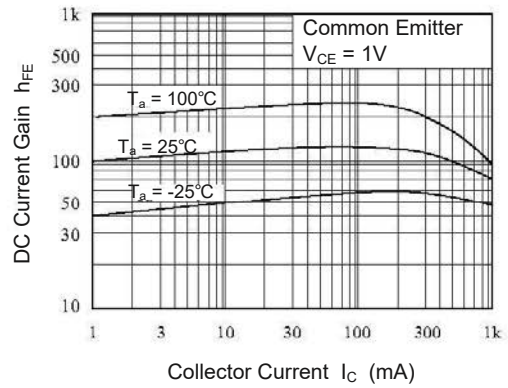
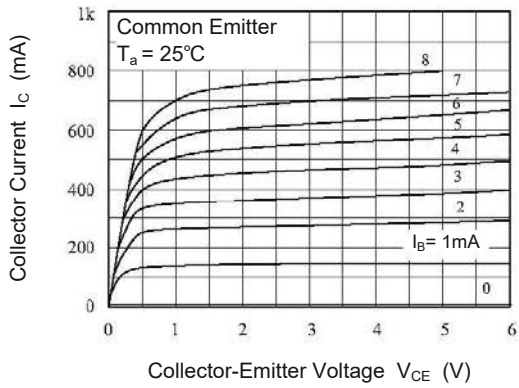


Electrical Characteristics (T_A=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|--|---|------|------|------|------|
| DC Current Gain at V _{CE} = 1 V, I _C = 100 mA | Gain Group C D H _{FE} | 100 | -- | 250 | -- |
| | | 160 | -- | 400 | -- |
| at V _{CE} = 1 V, I _C = 500 mA | | 40 | -- | -- | -- |
| Collector Base Cutoff Current at V _{CB} = 35 V | I _{CBO} | -- | -- | 100 | nA |
| Collector Base Breakdown Voltage at I _C = 10 μA | V _{(BR)CBO} | 40 | -- | -- | V |
| Collector Emitter Breakdown Voltage at I _C = 2 mA | V _{(BR)CEO} | 25 | -- | -- | V |
| Emitter Base Breakdown Voltage at I _E = 100 μA | V _{(BR)EBO} | 6 | -- | -- | V |
| Collector Emitter Saturation Voltage at I _C = 500 mA, I _B = 50 mA | V _{CE(sat)} | -- | -- | 0.5 | V |
| Base Emitter Saturation Voltage at I _C = 500 mA, I _B = 50 mA | V _{BE(sat)} | -- | -- | 1.2 | V |
| Transition Frequency at V _{CE} = 5 V, I _C = 10 mA | F _T | -- | 100 | -- | MHz |



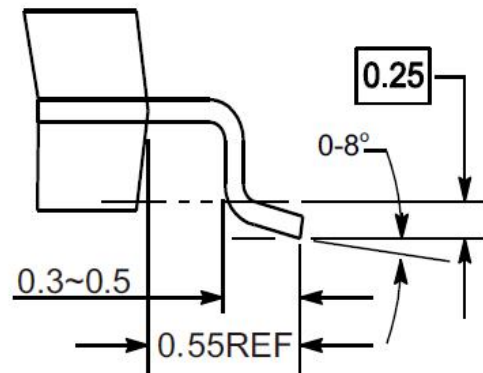
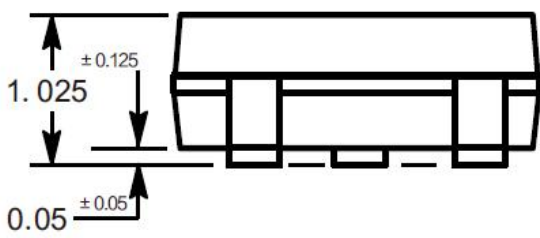
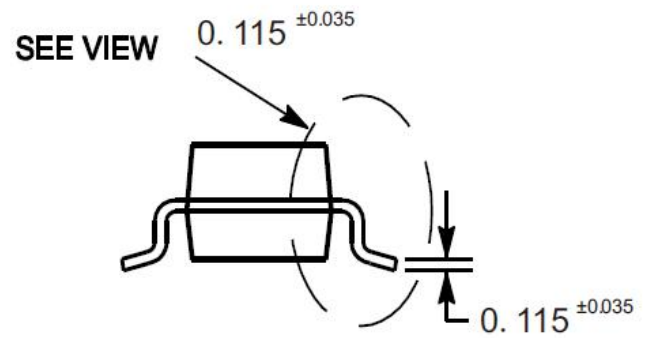
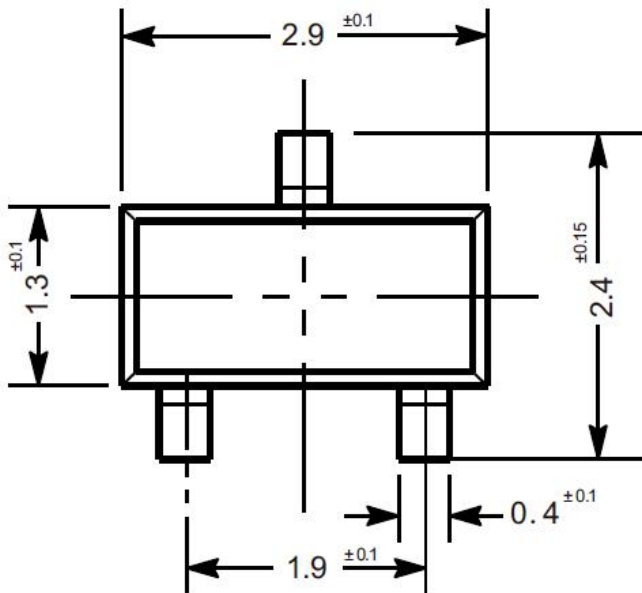
Typical Characteristic Curves



Package Outline

SOT-23

Dimensions in mm



VIEW C

Ordering Information

| Device | Package | Shipping |
|----------|---------|-----------------------|
| MMBT8050 | SOT-23 | 3,000PCS/Reel&7inches |

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

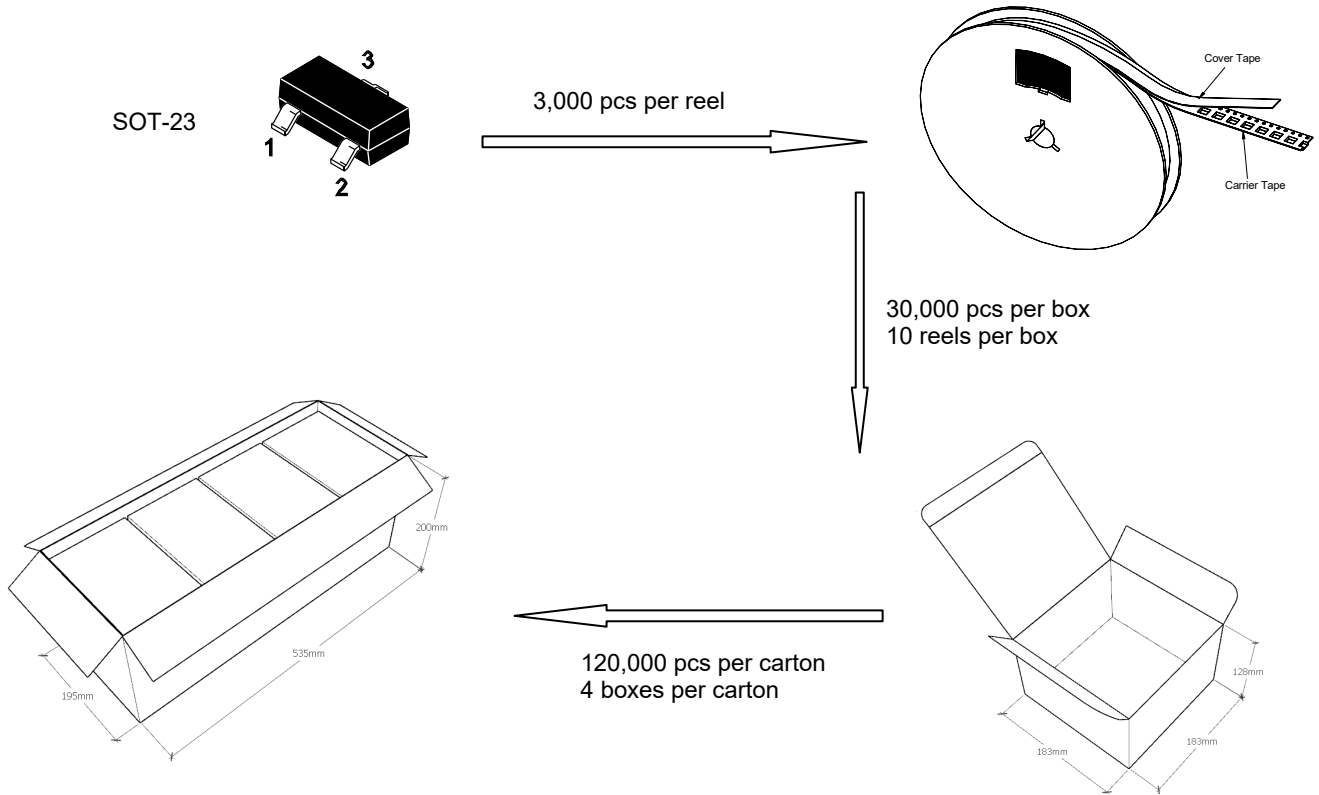
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

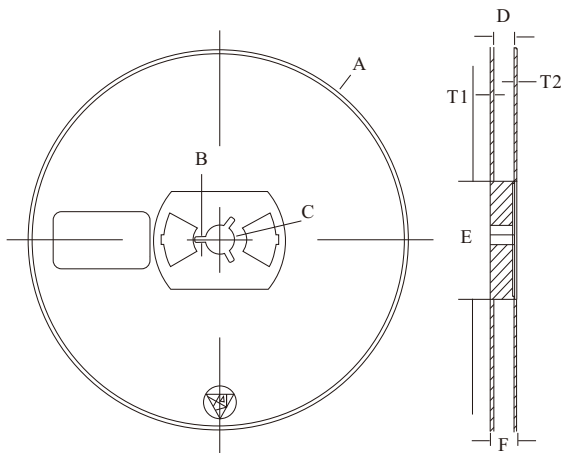
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

Package Specifications

- The method of packaging



◆ Embossed tape and reel data



| Symbol | Value (unit: mm) |
|--------|------------------|
| A | Ø 177.8±1 |
| B | 2.7±0.2 |
| C | Ø 13.5±0.2 |
| E | Ø 54.5±0.2 |
| F | 12.3±0.3 |
| D | 9.6+2/-0.3 |
| T1 | 1.0±0.2 |
| T2 | 1.2±0.2 |

Reel (7")

