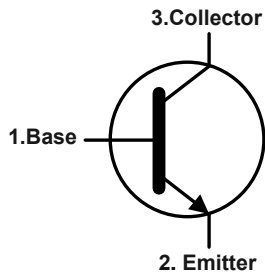


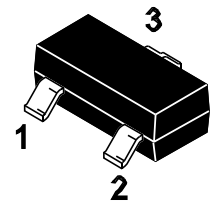
Features

- For Switching and AF Amplifier Applications.

Equivalent Circuit



SOT-23



1.Base 2.Emitter 3.Collector

Marking Code : 3DS

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|-------------|------|
| Collector Base Voltage | V_{CB0} | 500 | V |
| Collector Emitter Voltage | V_{CEO} | 400 | V |
| Emitter Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_c | 200 | mA |
| Maximum Power Dissipation | P_D | 300 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

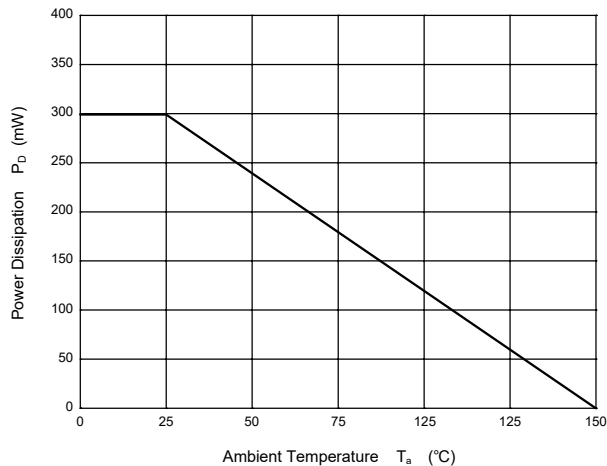
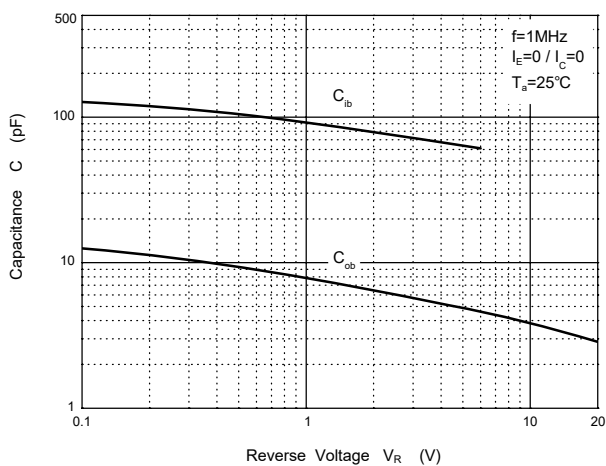
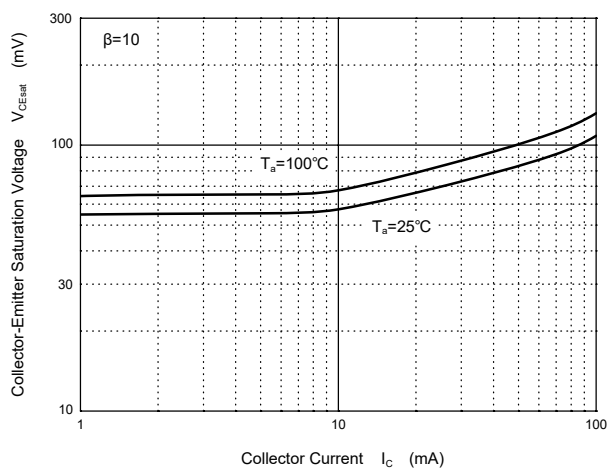
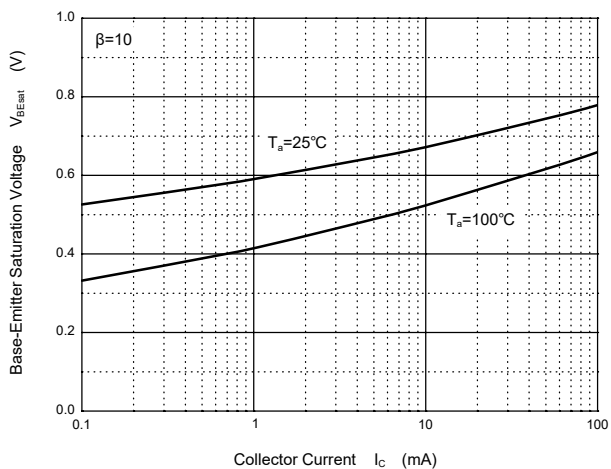
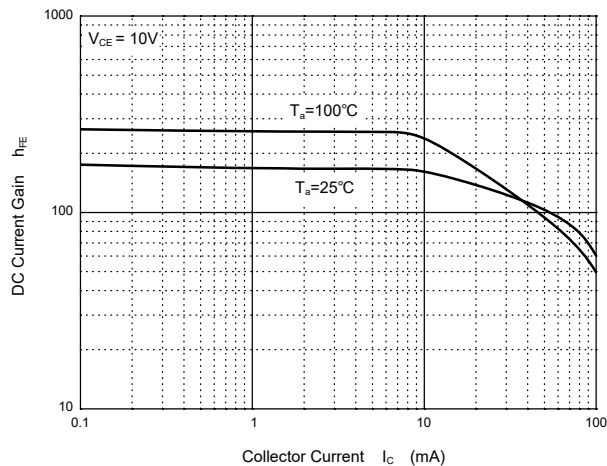
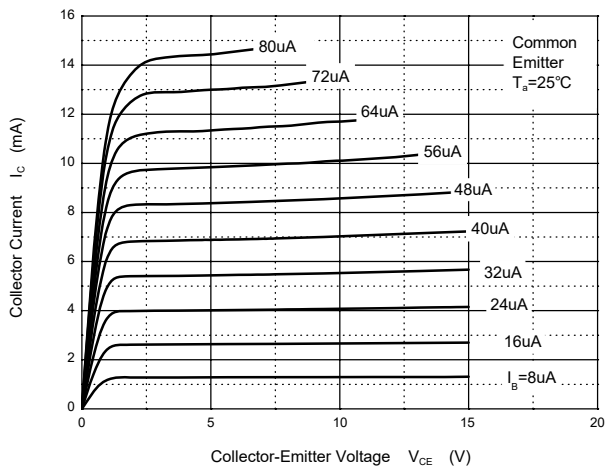


Electrical Characteristics (T_A=25°C)

| Parameter | Symbol | Min. | Max. | Unit |
|---|----------------------|----------------------|-----------------------|------|
| DC Current Gain at V _{CE} = 10 V, I _C = 1 mA at V _{CE} = 10 V, I _C = 10 mA at V _{CE} = 10 V, I _C = 50 mA at V _{CE} = 10 V, I _C = 100 mA | H _{FE} | 40 50 45 40 | -- 200 -- -- | -- |
| Collector Base Cutoff Current at V _{CB} = 400 V | I _{CBO} | -- | 0.1 | μA |
| Collector Emitter Cutoff Current at V _{CE} = 400 V | I _{CEO} | -- | 1 | μA |
| Emitter Base Cutoff Current at V _{EB} = 4 V | I _{EBO} | -- | 0.1 | μA |
| Collector Base Breakdown Voltage at I _C = 100 μA | V _{(BR)CBO} | 500 | -- | V |
| Collector Emitter Breakdown Voltage at I _C = 1 mA | V _{(BR)CEO} | 400 | -- | V |
| Emitter Base Breakdown Voltage at I _E = 100 μA | V _{(BR)EBO} | 6 | -- | V |
| Collector Emitter Saturation Voltage at I _C = 1 mA, I _B = 0.1 mA at I _C = 10 mA, I _B = 1 mA at I _C = 50 mA, I _B = 5 mA | V _{CE(sat)} | -- -- -- | 0.4 0.5 0.75 | V |
| Base Emitter Saturation Voltage at I _C = 10 mA, I _B = 1 mA | V _{BE(sat)} | -- | 0.75 | V |
| Output Capacitance at V _{CB} = 20 V, f = 1 MHz | C _{ob} | -- | 7 | pF |



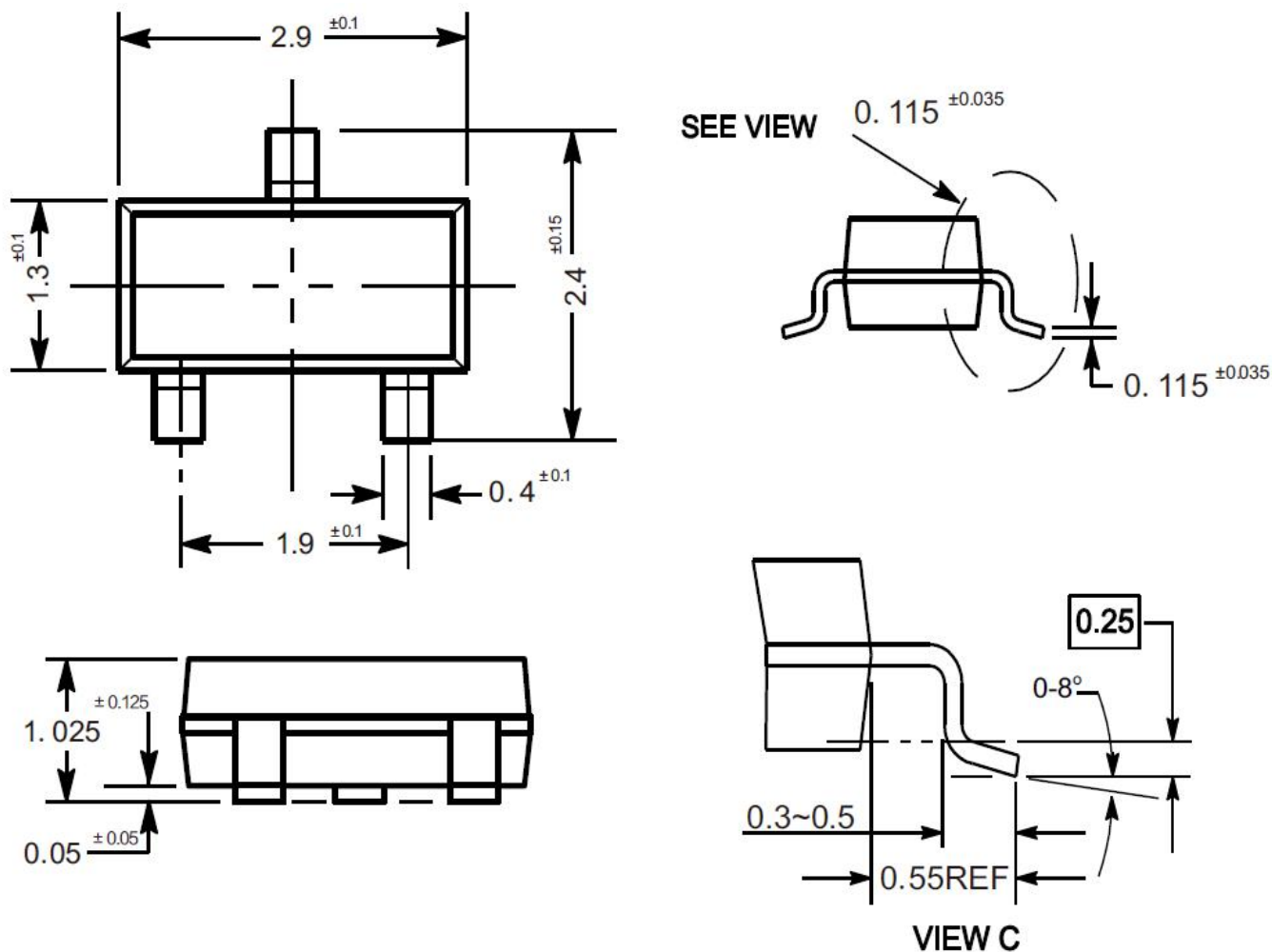
Typical Characteristic Curves



Package Outline

SOT-23

Dimensions in mm

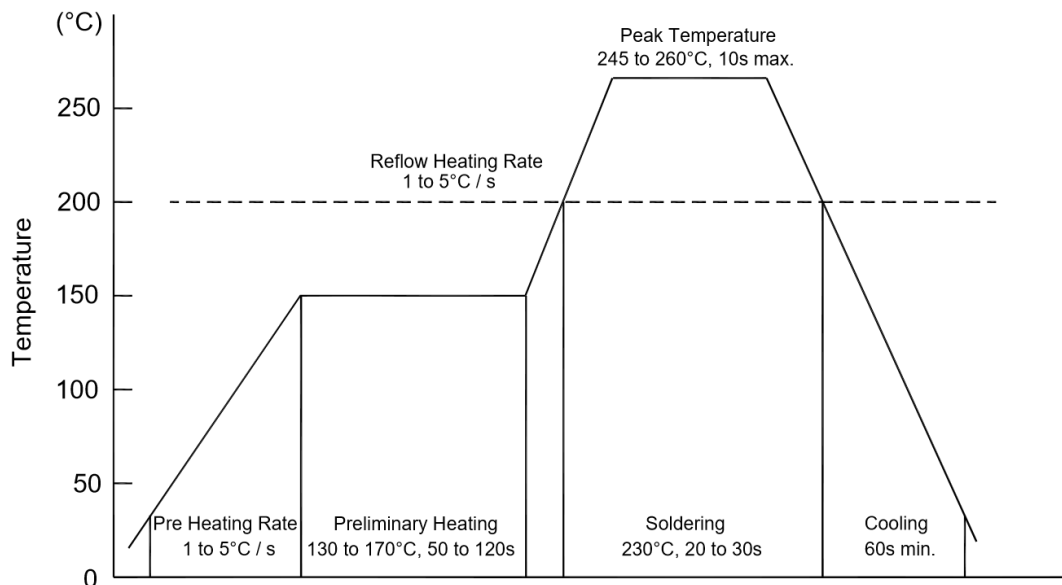


Ordering Information

| Device | Package | Shipping |
|-----------|---------|-----------------------|
| MMBTA44-S | 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

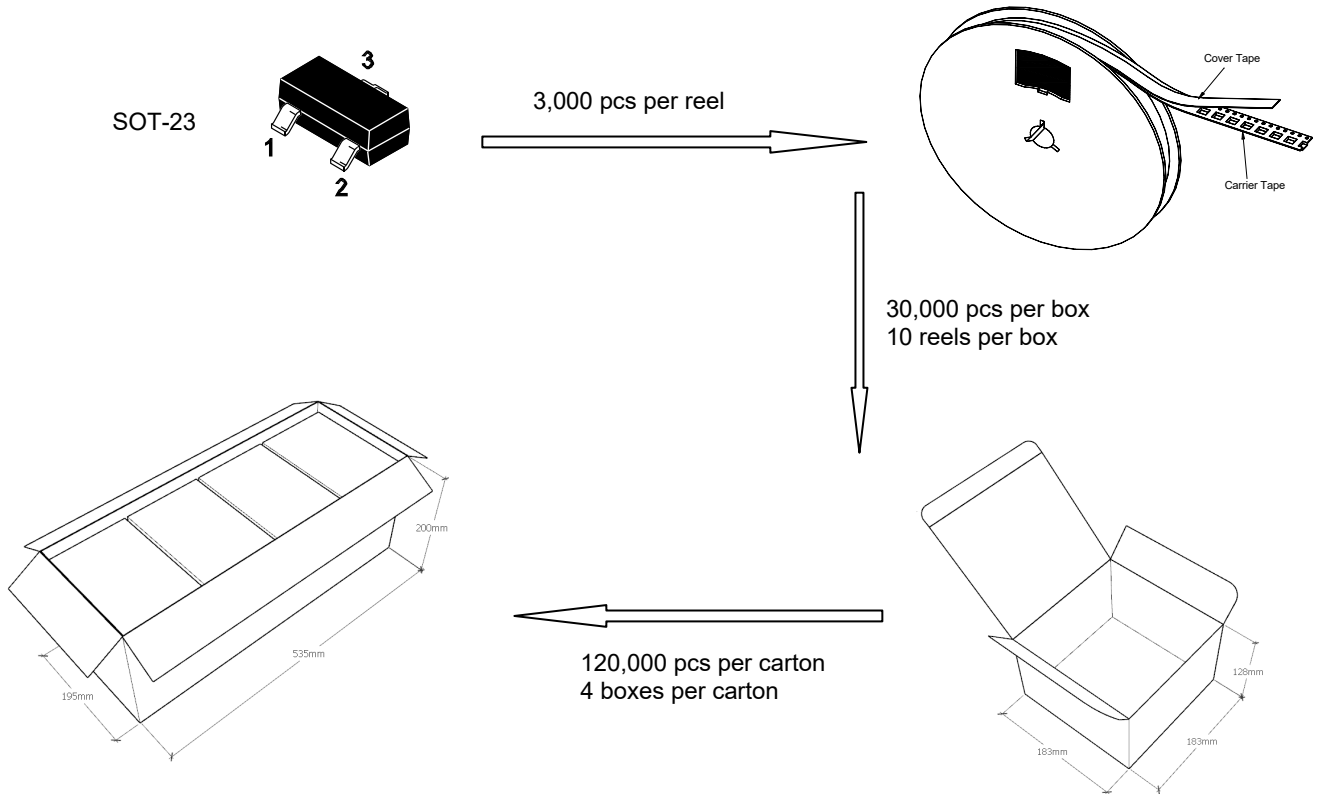
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

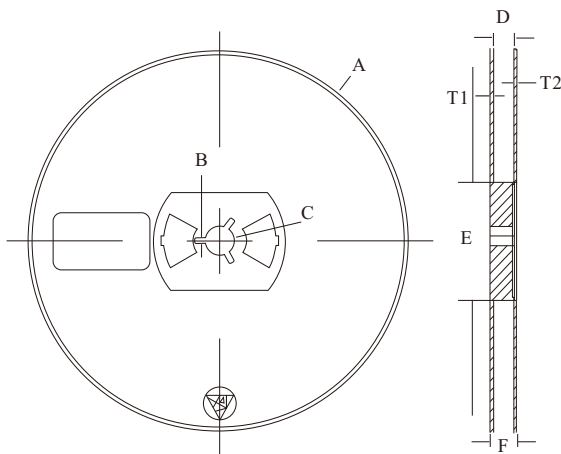
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

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")

