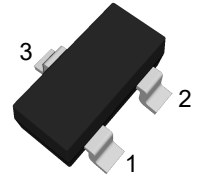


Features

- For Switching and AF Amplifier Applications.

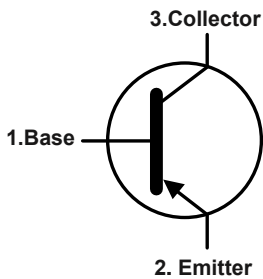
SOT-23



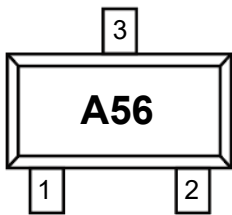
(Top View)

1.Base 2.Emitter 3.Collector

Equivalent Circuit



Marking Code



Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter | Symbol | Value | Unit |
|---------------------------|------------|-------------|------|
| Collector Base Voltage | $-V_{CBO}$ | 80 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 80 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 4 | V |
| Collector Current | $-I_C$ | 500 | mA |
| Maximum Power Dissipation | P_D | 350 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to +150 | °C |

Thermal Characteristics

| Parameter | Symbol | Value | Unit |
|--|-----------------|-------|------|
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 357 | °C/W |

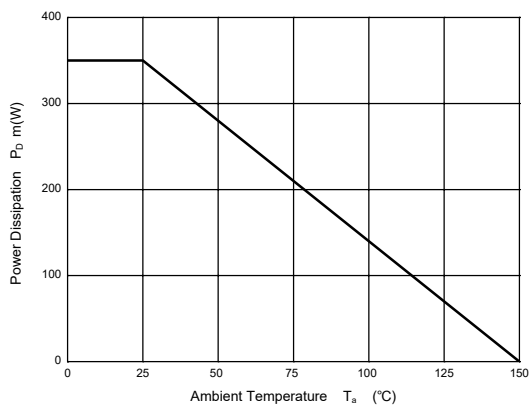
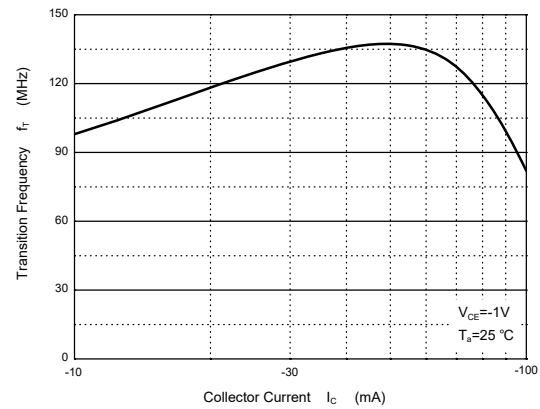
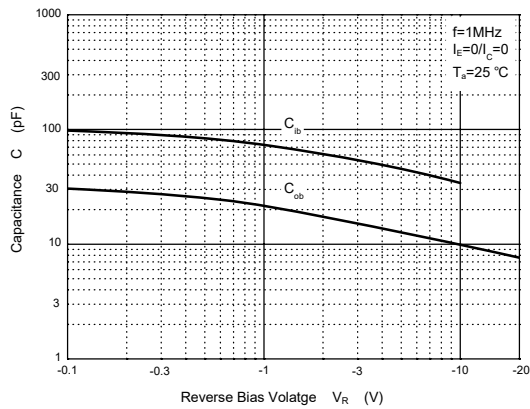
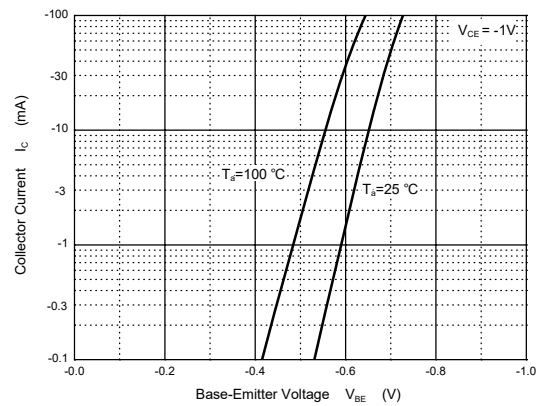
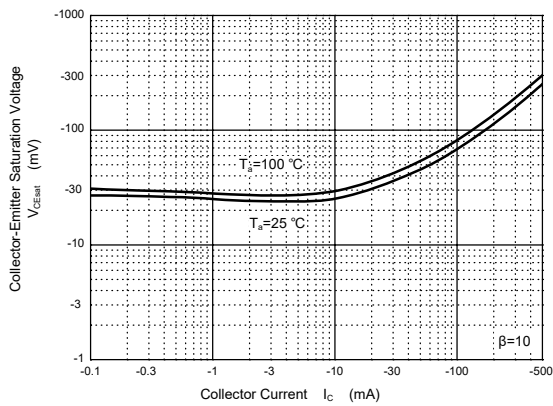
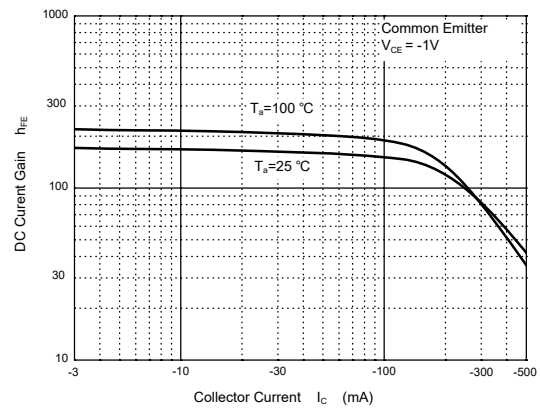
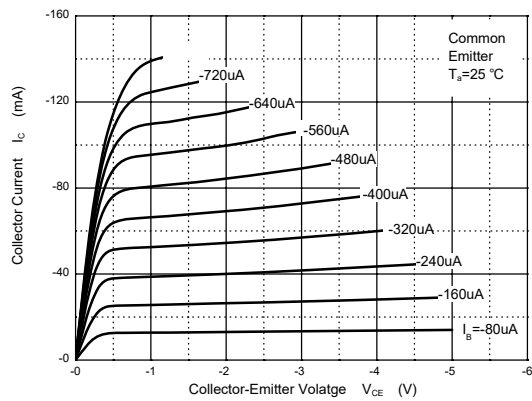


Electrical Characteristics ($T_A=25^\circ\text{C}$)

| Parameter | Symbol | Min. | Max. | Unit |
|--|----------------|------------|-----------|------|
| DC Current Gain at $V_{CE} = -1\text{ V}$, $I_C = -10\text{ mA}$ at $V_{CE} = -1\text{ V}$, $I_C = -100\text{ mA}$ | H_{FE} | 100 100 | 400 -- | -- |
| Collector Base Cutoff Current at $V_{CB} = -80\text{ V}$ | $-I_{CBO}$ | -- | 100 | nA |
| Collector Emitter Cutoff Current at $V_{CES} = -60\text{ V}$ | $-I_{CES}$ | -- | 100 | nA |
| Collector Base Breakdown Voltage at $I_C = -100\text{ }\mu\text{A}$ | $-V_{(BR)CBO}$ | 80 | -- | V |
| Collector Emitter Breakdown Voltage at $I_C = -1\text{ mA}$ | $-V_{(BR)CEO}$ | 80 | -- | V |
| Emitter Base Breakdown Voltage at $I_E = -100\text{ }\mu\text{A}$ | $-V_{(BR)EBO}$ | 4 | -- | V |
| Collector Emitter Saturation Voltage at $I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$ | $-V_{CE(sat)}$ | -- | 0.25 | V |
| Base Emitter On Voltage at $V_{CE} = -1\text{ V}$, $I_C = -100\text{ mA}$ | $-V_{BE(on)}$ | -- | 1.2 | V |
| Transition Frequency at $V_{CE} = -1\text{ V}$, $I_C = -100\text{ mA}$, $f = 100\text{ MHz}$ | F_T | 50 | -- | MHz |



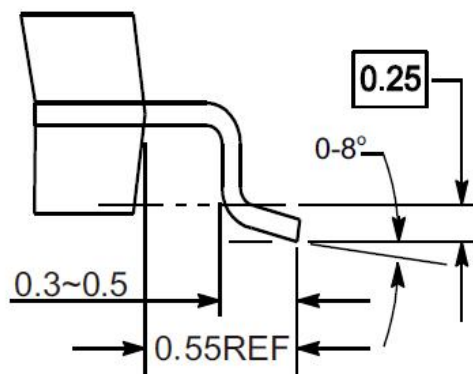
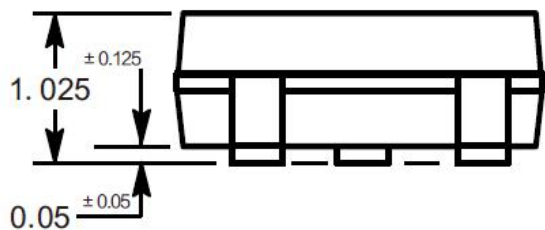
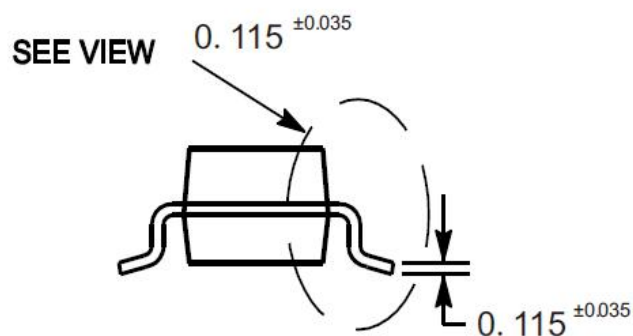
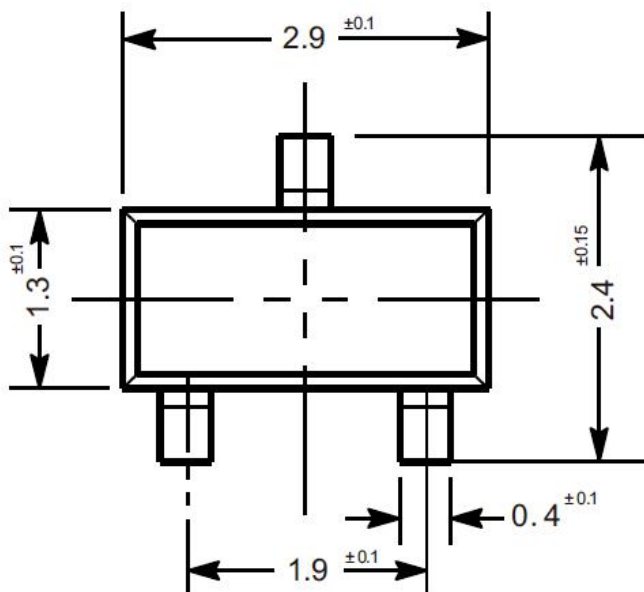
Typical Characteristic Curves



Package Outline

SOT-23

Dimensions in mm



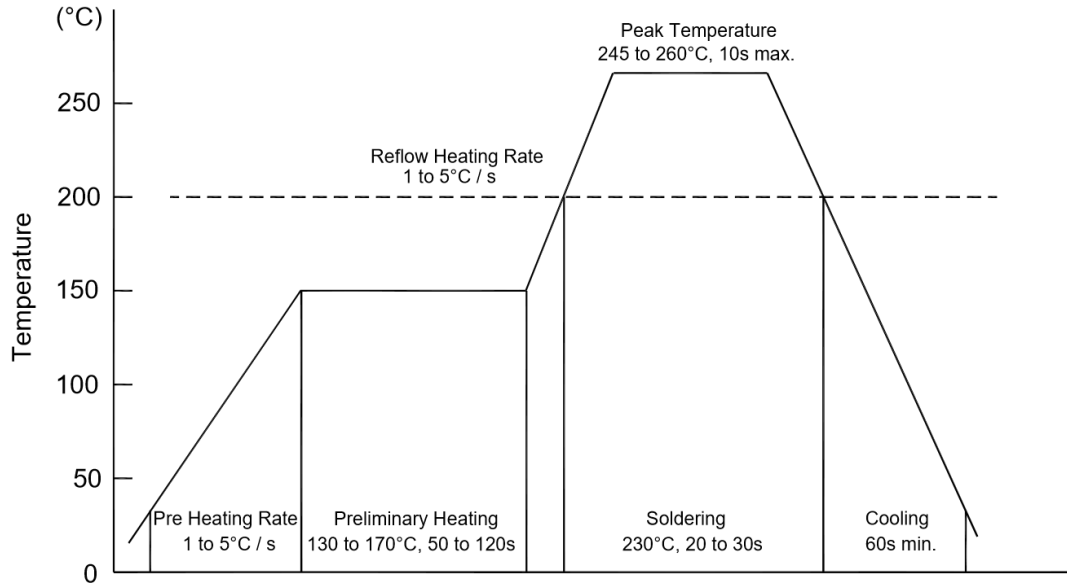
VIEW C

Ordering Information

| Device | Package | Shipping |
|---------|---------|-----------------------|
| MMBTA56 | 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

