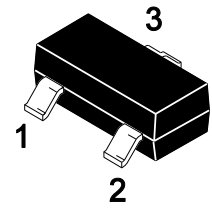


Features

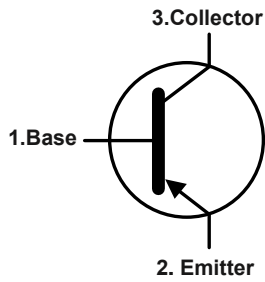
- For Switching and AF Amplifier Applications.

SOT-23



1.Base 2.Emitter 3.Collector

Equivalent Circuit



Marking Code :

MMBTSA1037Q : FQ

MMBTSA1037R : FR

MMBTSA1037S : FS

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	60	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	150	mA
Maximum Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

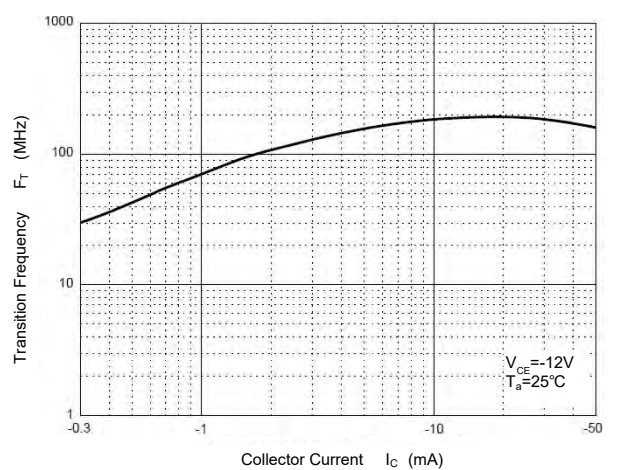
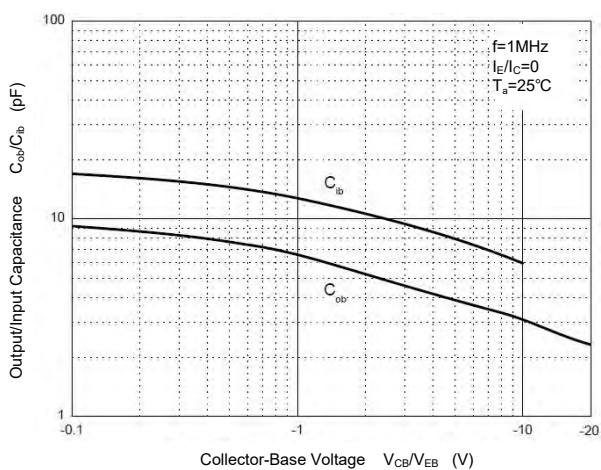
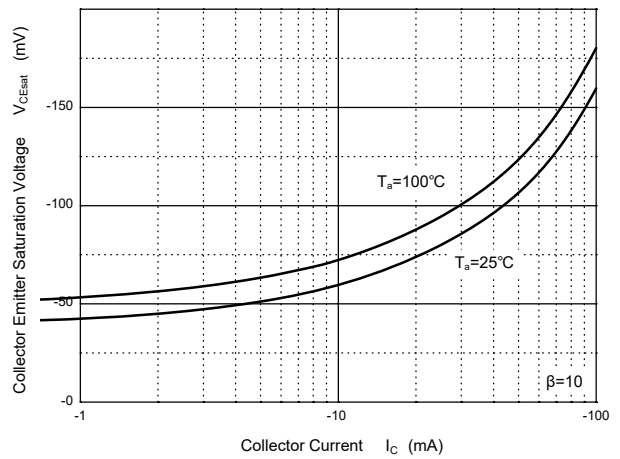
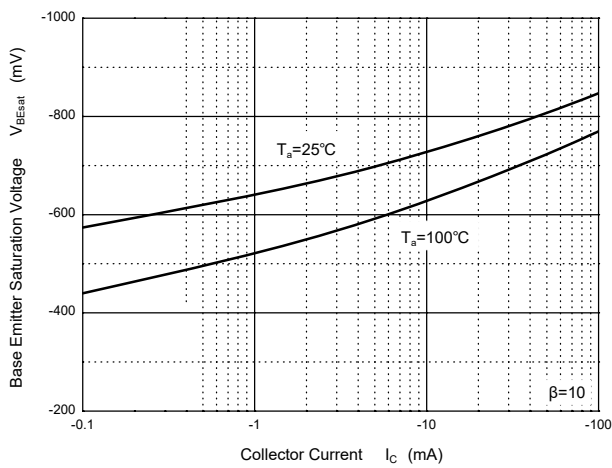
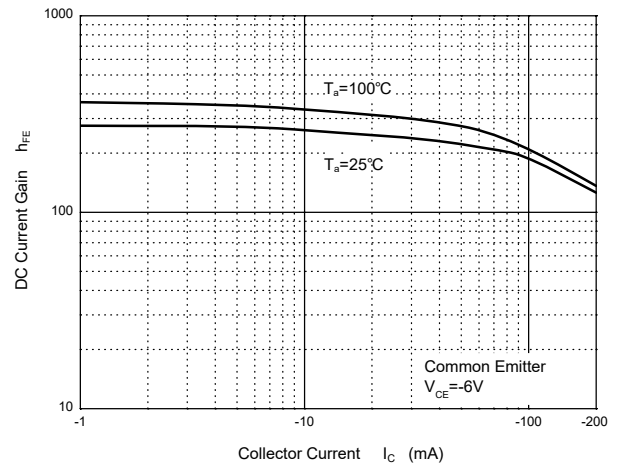
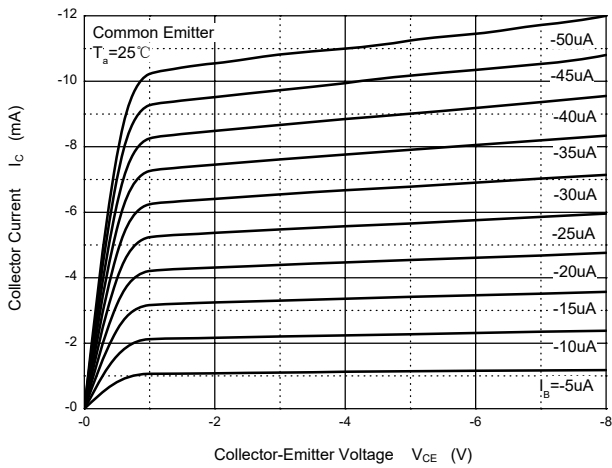


Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V _{CE} = -6 V, I _C = -1 mA	Gain Group				
	Q	120	--	270	--
	R	180	--	390	--
	S	270	--	560	--
Collector Base Cutoff Current at V _{CB} = -60 V	-I _{CB0}	--	--	100	nA
Emitter Base Cutoff Current at V _{EB} = -6 V	-I _{EBO}	--	--	100	nA
Collector Base Breakdown Voltage at I _C = -50 μA	-V _{(BR)CBO}	60	--	--	V
Collector Emitter Breakdown Voltage at I _C = -1 mA	-V _{(BR)CEO}	50	--	--	V
Emitter Base Breakdown Voltage at I _E = -50 μA	-V _{(BR)EBO}	6	--	--	V
Collector Emitter Saturation Voltage at I _C = -50 mA, I _B = -5 mA	-V _{CE(sat)}	--	--	0.5	V
Base Emitter Saturation Voltage at I _C = -50 mA, I _B = -5 mA	-V _{BE(sat)}	--	--	1	V
Transition Frequency at V _{CE} = -12 V, I _C = -2 mA, f = 30 MHz	F _T	--	140	--	MHz
Output Capacitance at V _{CB} = -12 V, f = 1 MHz	C _{ob}	--	4	5	pF



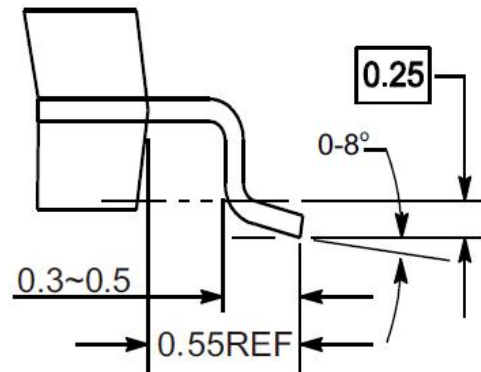
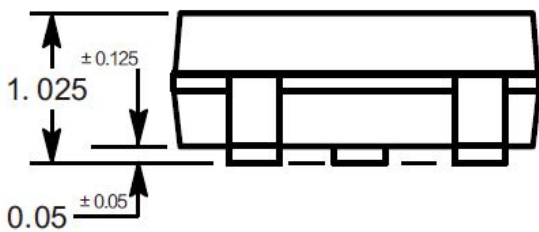
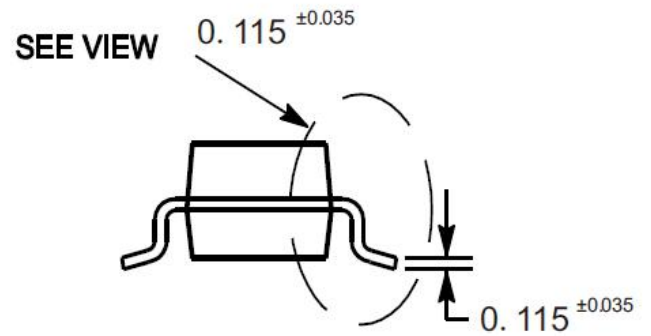
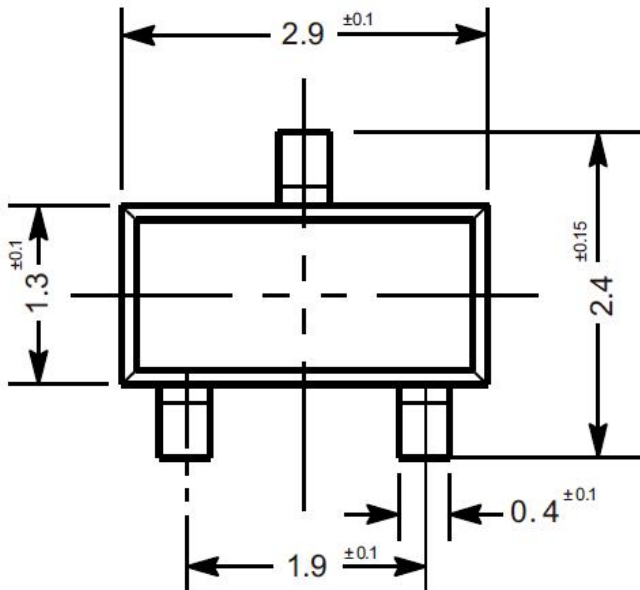
Typical Characteristic Curves



Package Outline

SOT-23

Dimensions in mm



VIEW C

Ordering Information

Device	Package	Shipping
MMBTSA1037	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

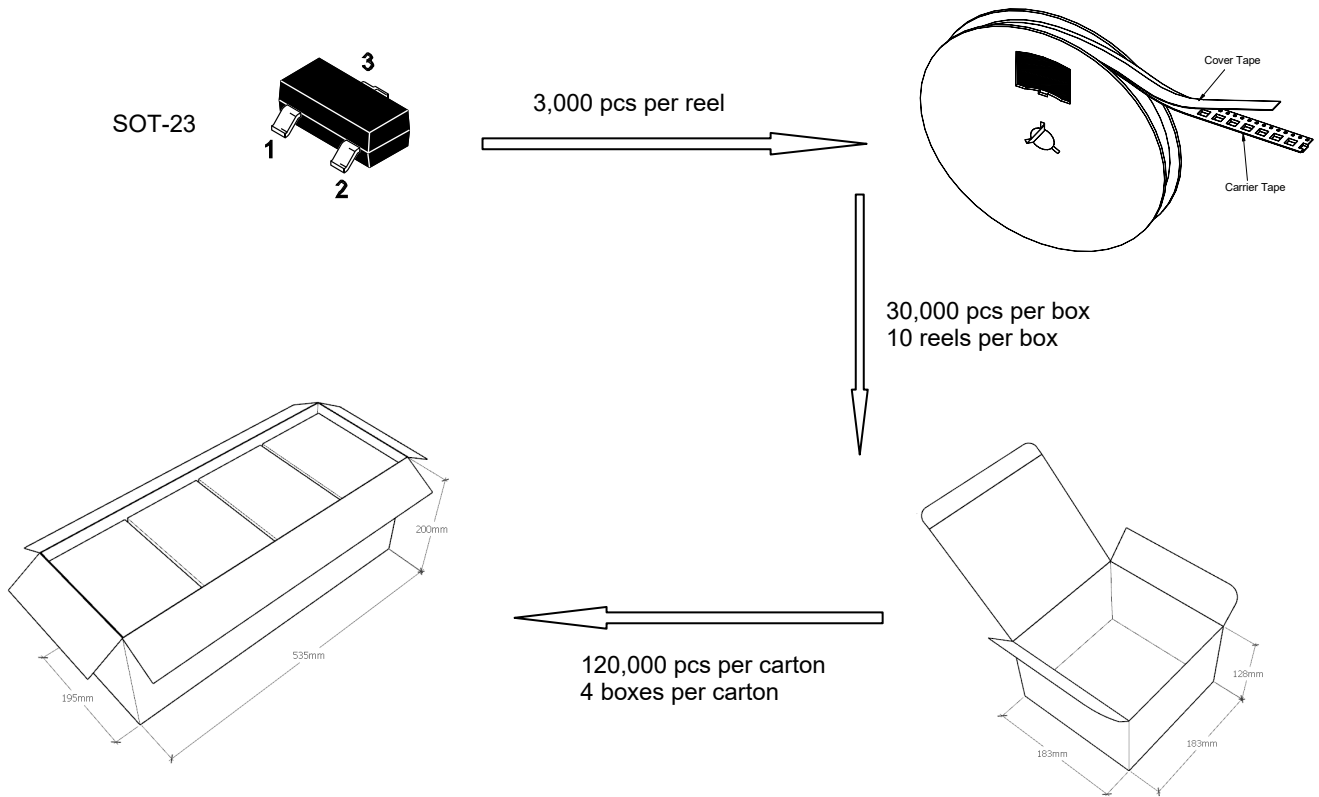
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

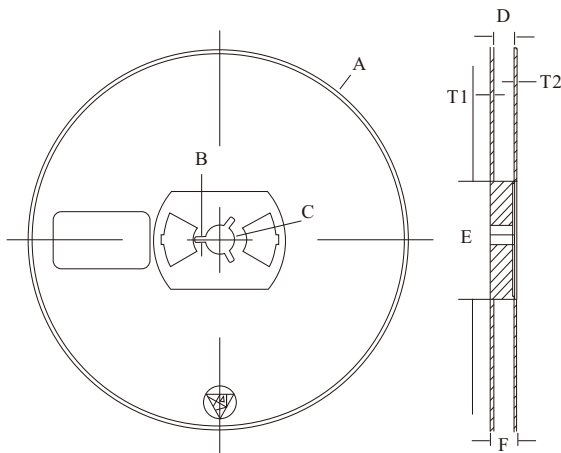
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

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")

