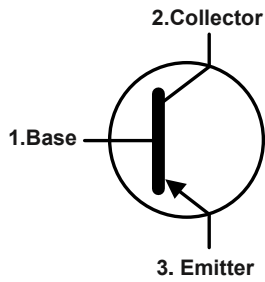


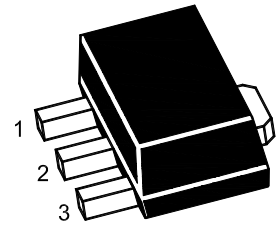
Features

- High voltage
- Large continuous collector current capability

Equivalent Circuit



SOT-89



1.Base 2.Collector 3. Emitter

Marking Code :

2SA1013SQ-R : 1013R

2SA1013SQ-O : 1013O

2SA1013SQ-Y : 1013Y

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	160	V
Collector Emitter Voltage	$-V_{CEO}$	160	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	1	A
Maximum Power Dissipation	P_D	0.5	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

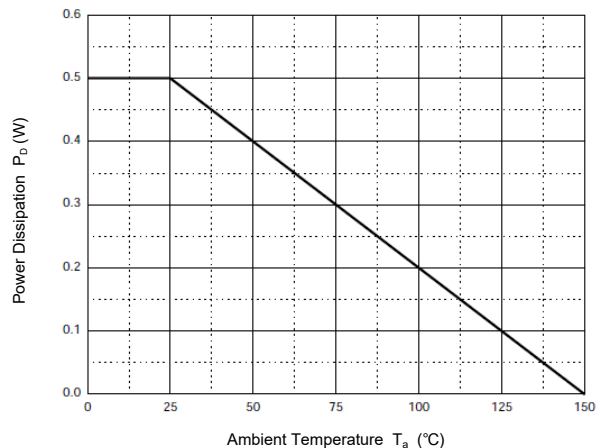
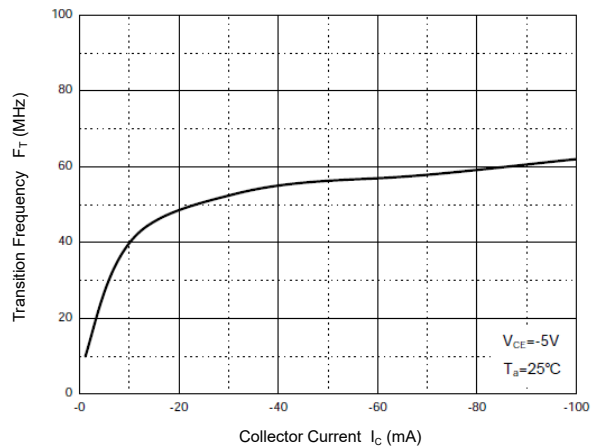
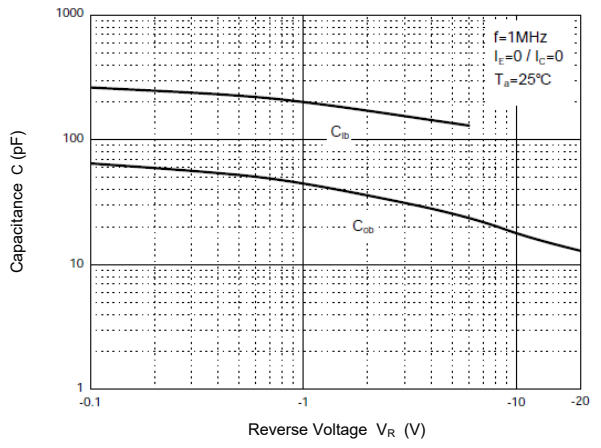
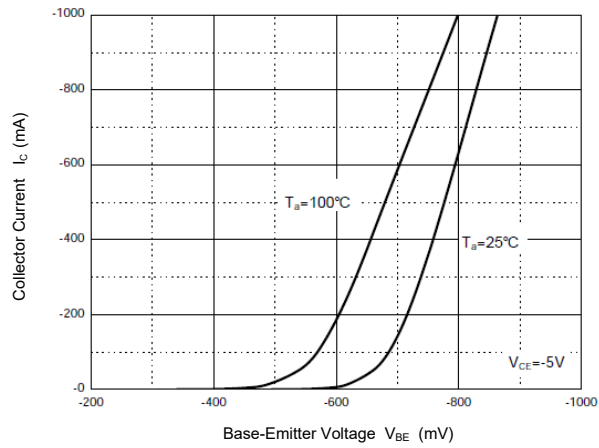
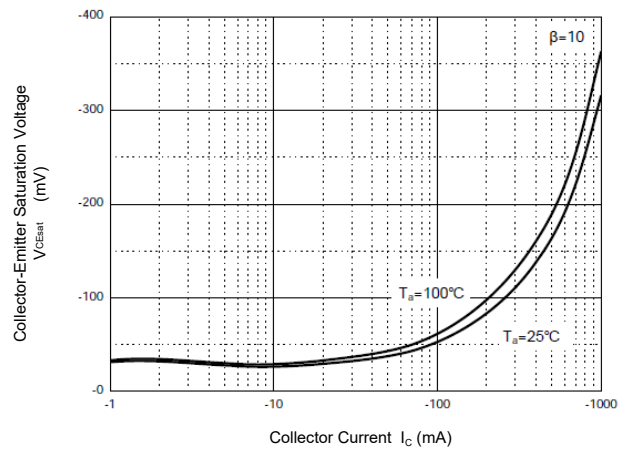
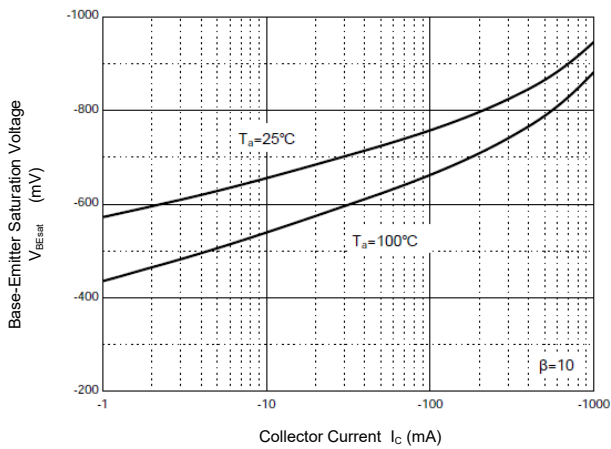
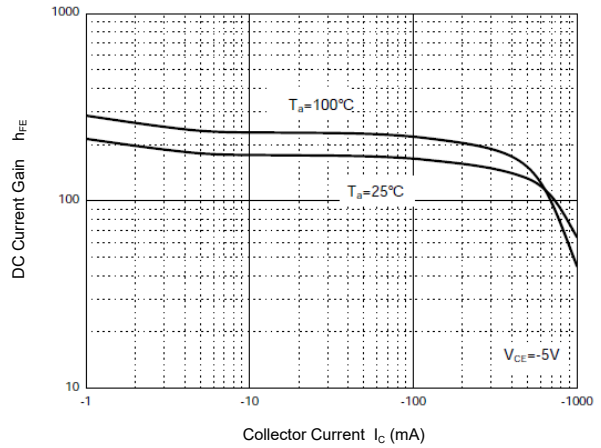
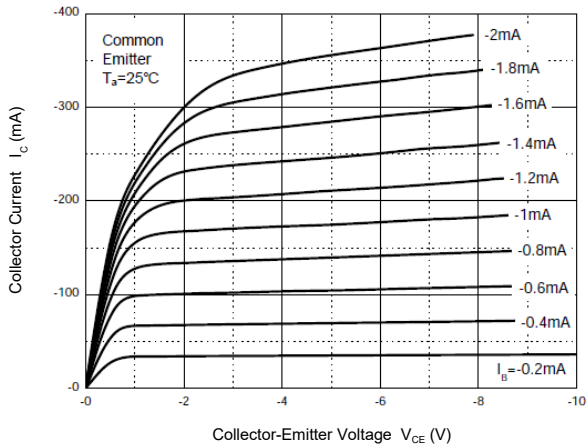


Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V _{CE} = -5 V, I _C = -200 mA Current Gain Group	R O Y H _{FE}	60 100 160	120 200 320	--
Collector Base Cutoff Current at V _{CB} = -150 V	-I _{CBO}	--	1	μA
Emitter Base Cutoff Current at V _{EB} = -6 V	-I _{EBO}	--	1	μA
Collector Base Breakdown Voltage at I _C = -100 μA	-V _{(BR)CBO}	160	--	V
Collector Emitter Breakdown Voltage at I _C = -1 mA	-V _{(BR)CEO}	160	--	V
Emitter Base Breakdown Voltage at I _E = -10 μA	-V _{(BR)EBO}	6	--	V
Collector Emitter Saturation Voltage at I _C = -500 mA, I _B = -50 mA	-V _{CE(sat)}	--	1.5	V
Base Emitter On Voltage at V _{CE} = -5 V, I _C = -5 mA	-V _{BE(on)}	--	0.75	V
Transition Frequency at V _{CE} = -5 V, I _C = -200 mA	F _T	15	--	MHz



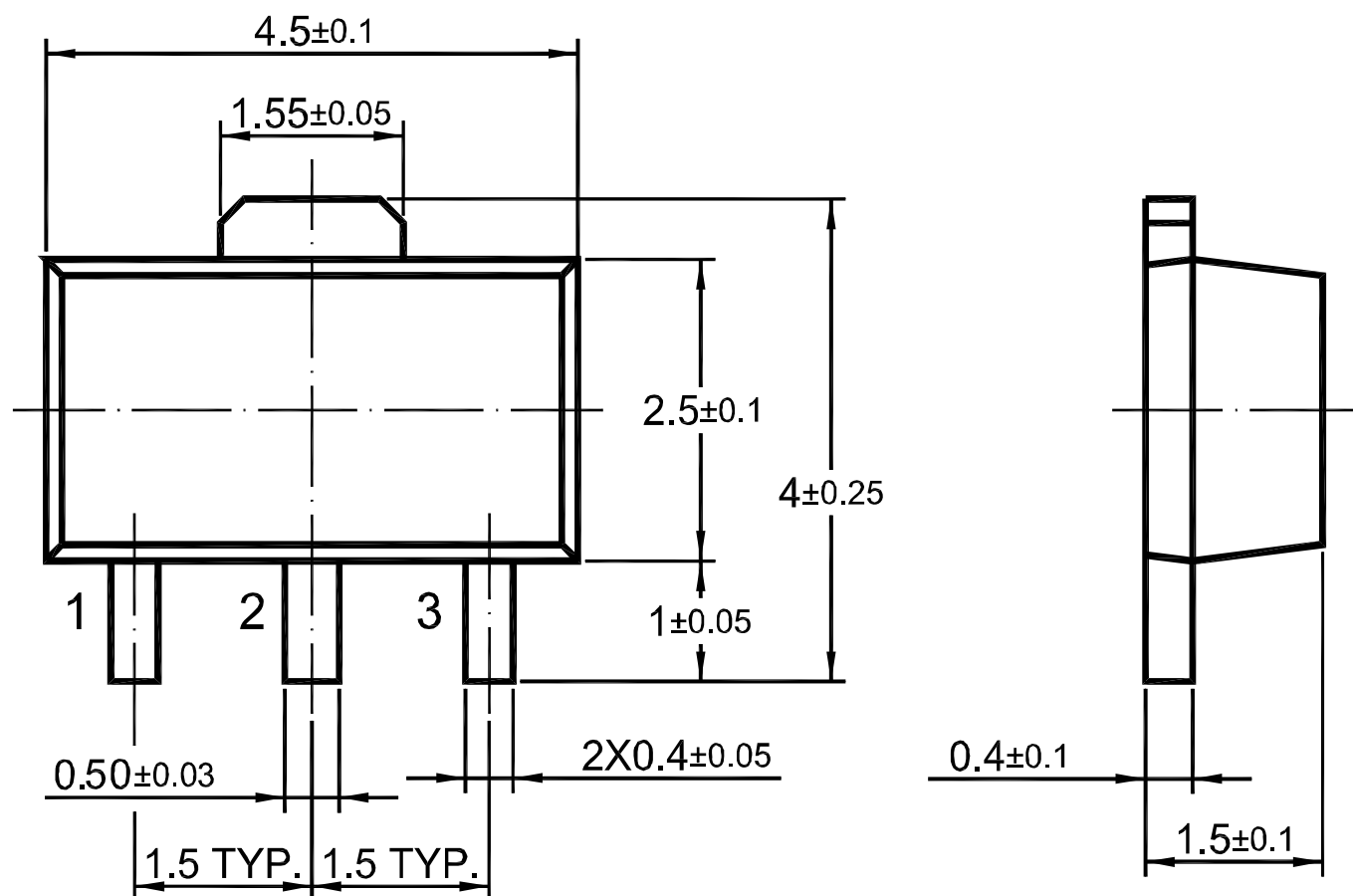
Typical Characteristic Curves



Package Outline

SOT-89

Dimensions in mm



Ordering Information

Device	Package	Shipping
2SA1013SQ	SOT-89	3,000PCS/Reel&13inches

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

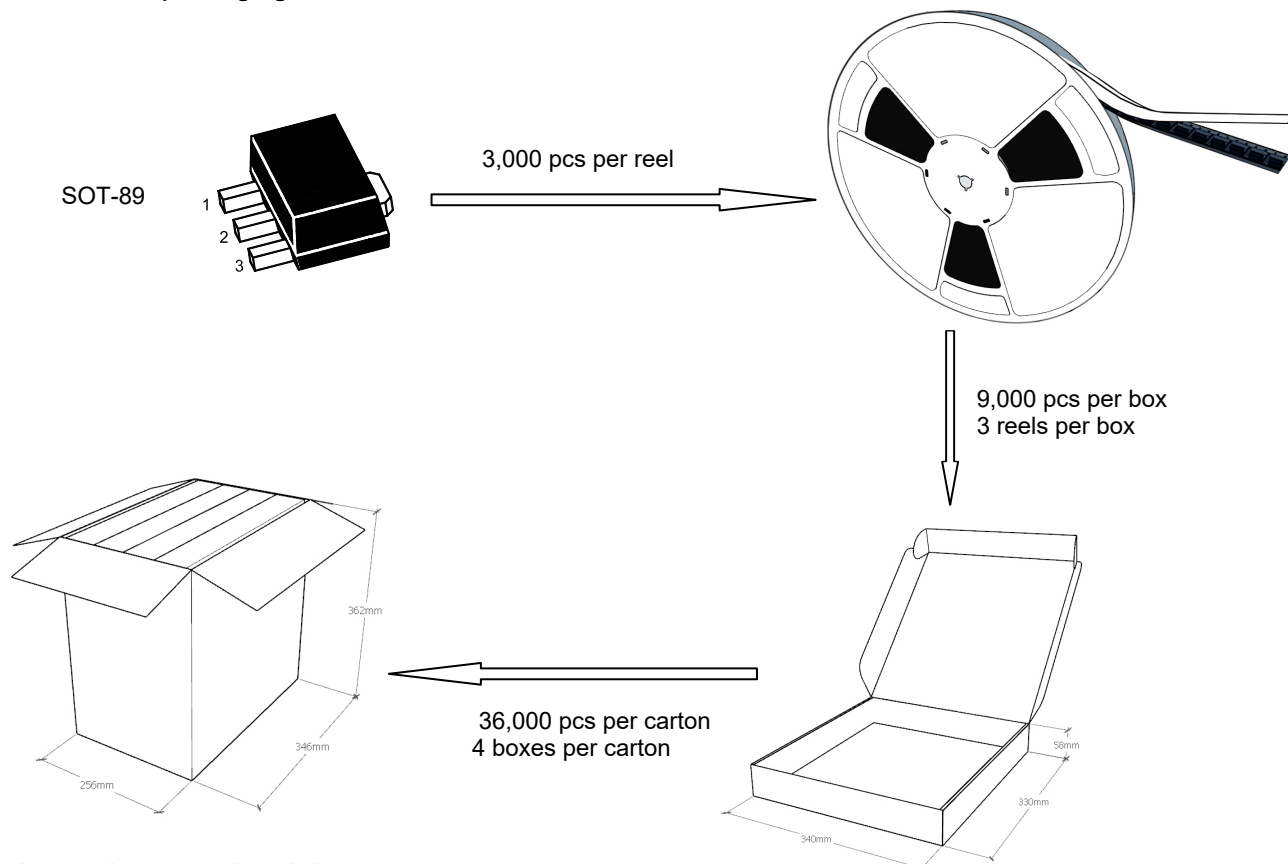
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

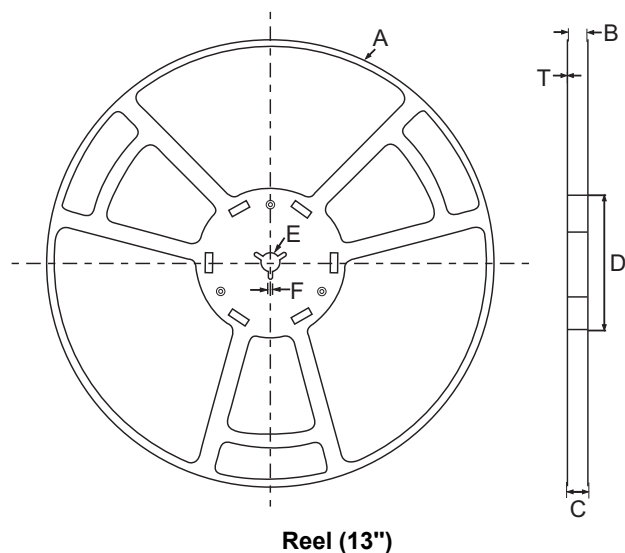
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

Package Specifications

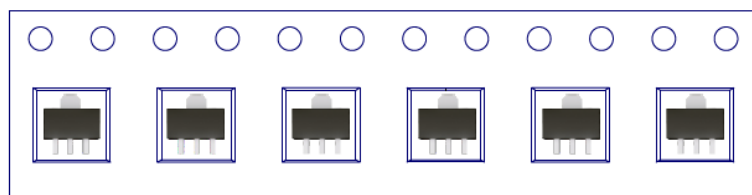
- The method of packaging



◆ Embossed tape and reel data



symbol	Value(unit:mm)
A	$\phi 330\pm 1$
B	12.7 ± 0.5
C	16.5 ± 0.3
D	$\phi 99.5\pm 0.5$
E	$\phi 13.6\pm 0.3$
F	2.8 ± 0.3
T	1.9 ± 0.2



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