2SA1213SQ
PNP Transistor

## Features

- Low Saturation Voltage
- High Speed Switching Time
- As Complementary Type of the NPN Transistor 2SC2873SQ is Recommended.

Equivalent Circuit

2.Collector

1.Base

3. Emitter

SOT-89
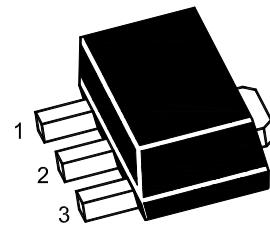
1. Base 2.Collector 3. Emitter
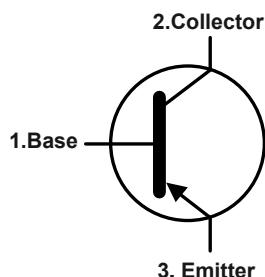
Marking Code :
2SA1213SQ-O : NX
2SA1213SQ-Y : NY

Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	50	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	2	A
Maximum Power Dissipation	P_D	0.5	W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	250	℃/W
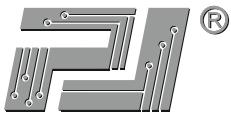
Electrical Characteristics (T$_A$=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V$_{CE}$ = -2 V, I$_C$ = -500 mA Current Gain Group O Y at V$_{CE}$ = -2 V, I$_C$ = -2 A	H$_{FE}$	70 120 20	-- -- --	140 240 --	--
Collector Base Cutoff Current at V$_{CB}$ = -50 V	-I$_{CBO}$	--	--	100	nA
Emitter Base Cutoff Current at V$_{EB}$ = -5 V	-I$_{EBO}$	--	--	100	nA
Collector Base Breakdown Voltage at I$_C$ = -100 μA	-V$_{(BR)CBO}$	50	--	--	V
Collector Emitter Breakdown Voltage at I$_C$ = -1 mA	-V$_{(BR)CEO}$	50	--	--	V
Emitter Base Breakdown Voltage at I$_E$ = -100 μA	-V$_{(BR)EBO}$	5	--	--	V
Collector Emitter Saturation Voltage at I$_C$ = -1 A, I$_B$ = -50 mA	-V$_{CE(sat)}$	--	--	0.5	V
Base Emitter Saturation Voltage at I$_C$ = -1 A, I$_B$ = -50 mA	-V$_{BE(sat)}$	--	--	1.2	V
Transition Frequency at V$_{CE}$ = -2 V, I$_C$ = -500 mA	F$_T$	100	--	--	MHz
Output Capacitance at V$_{CB}$ = -10 V, I$_E$ = 0, f = 1MHz	C$_{ob}$	--	40	--	pF

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Typical Characteristic Curves

Revison：4.0 Feb-2022
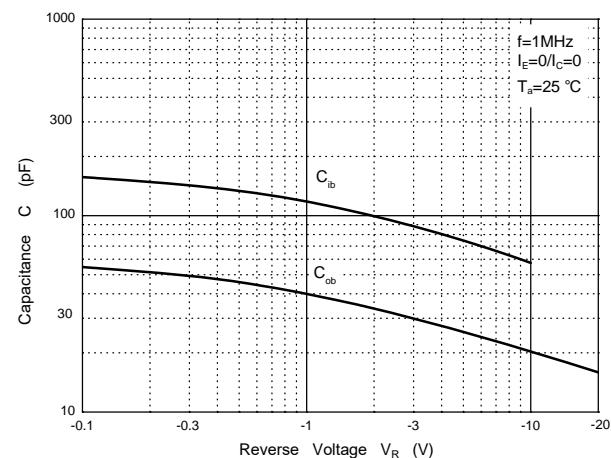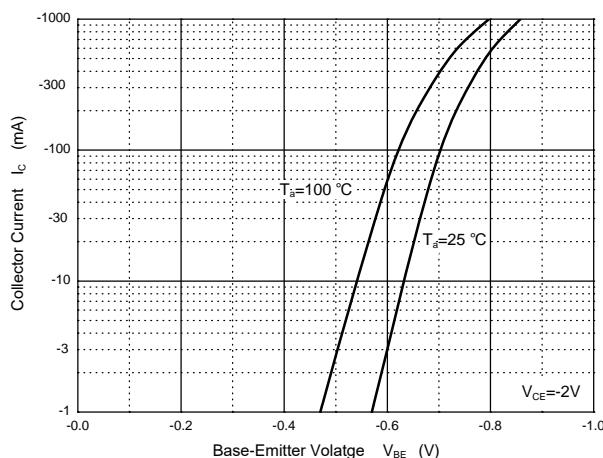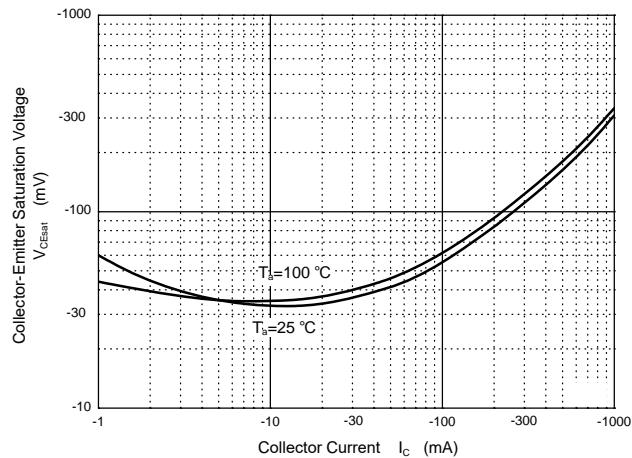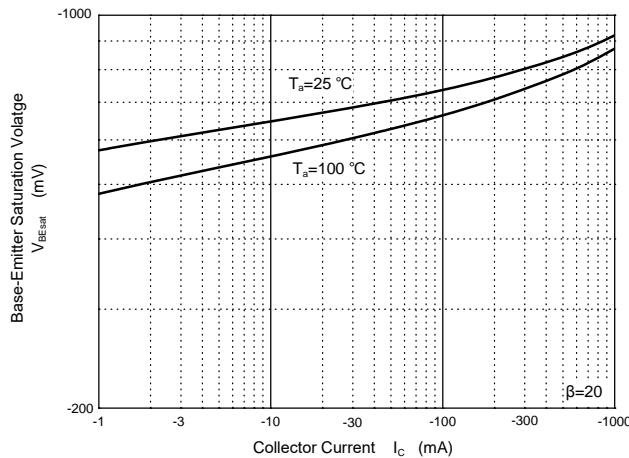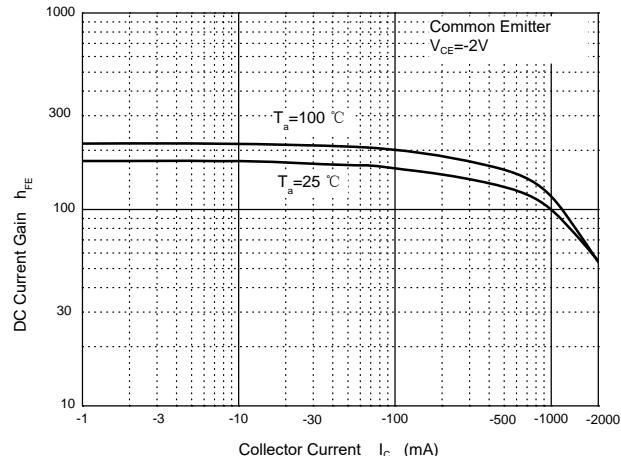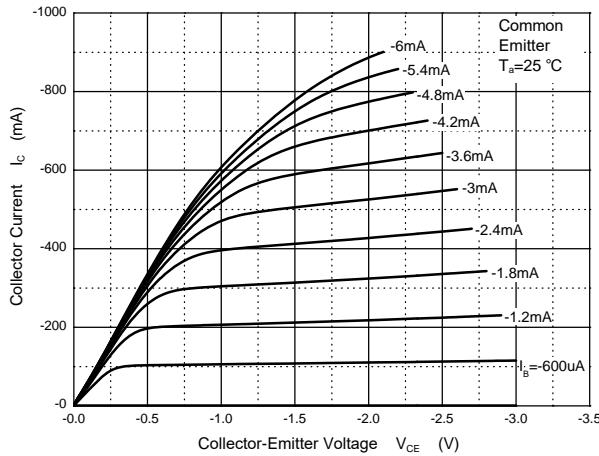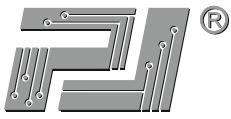
Package Outline

SOT-89

Dimensions in mm
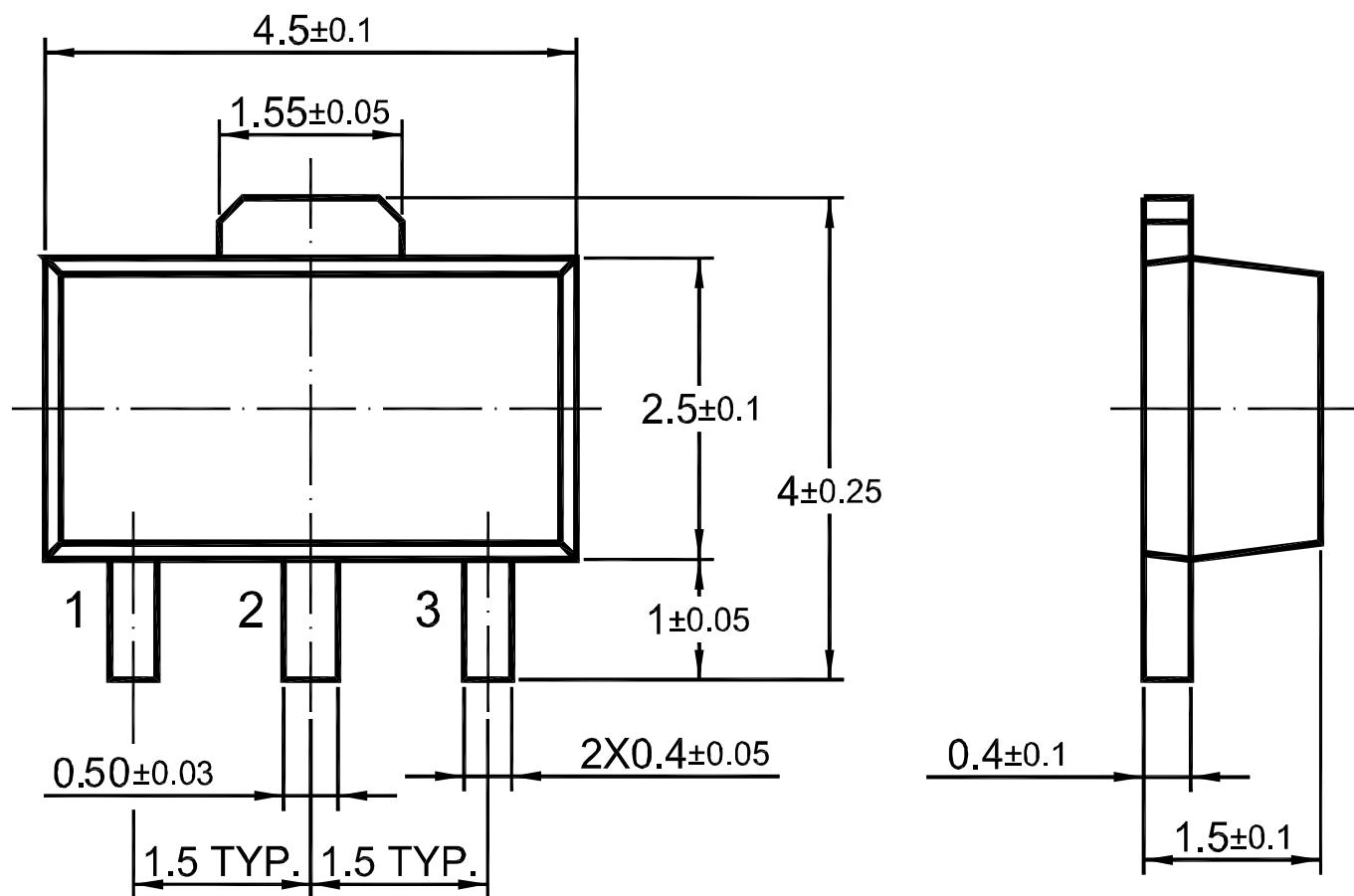
Ordering Information

Device	Package	Shipping
2SA1213SQ	SOT-89	1,000PCS/Reel&7inches
		3,000PCS/Reel&13inches

Conditions of Soldering and Storage

◆ **Recommended condition of reflow soldering**
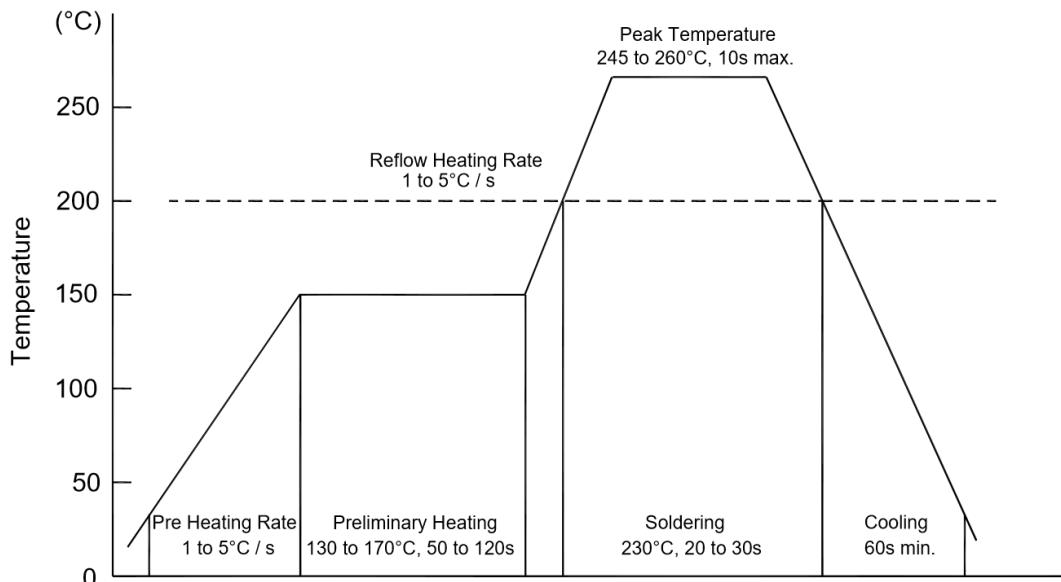
Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

- 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
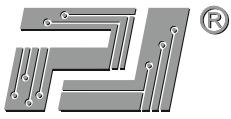
Package Specifications

● The method of packaging (1,000PCS/Reel&7inches)

SOT-89

1,000 pcs per reel

Cover Tape

Carrier Tape

8,000 pcs per box
8 reels per box

200mm

535mm

195mm

32,000 pcs per carton
4 boxes per carton

128mm

183mm

183mm

◆ **Embossed tape and reel data**

Reel (7")
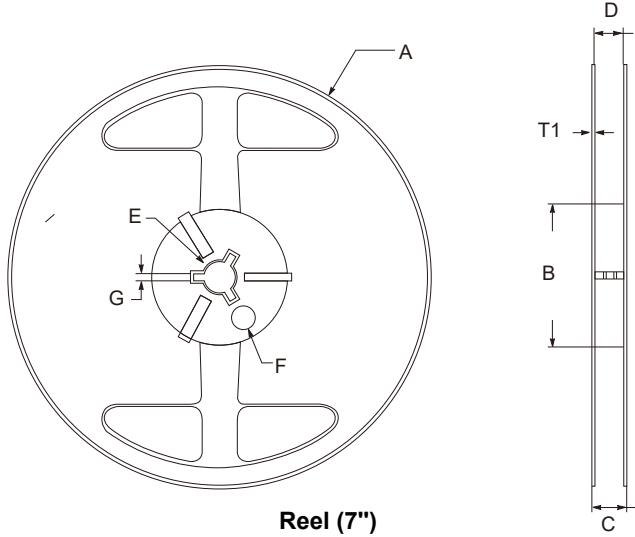
symbol	Value(unit:mm)
A	Φ179±1
B	60.5±0.2
C	15.3±0.3
D	12.5~13.7
E	Φ13.5±0.2
F	Φ10.0±0.2
G	2.7±0.2
T1	1.0±0.2
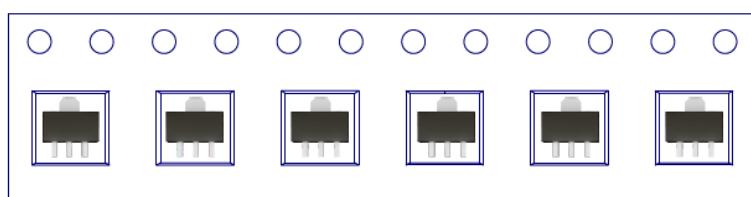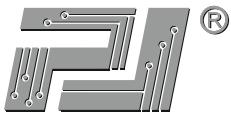
Package Specifications

● The method of packaging (3,000PCS/Reel&13inches)

SOT-89

3,000 pcs per reel

9,000 pcs per box
3 reels per box

36,000 pcs per carton
4 boxes per carton

362mm

346mm

256mm

58mm

330mm

340mm
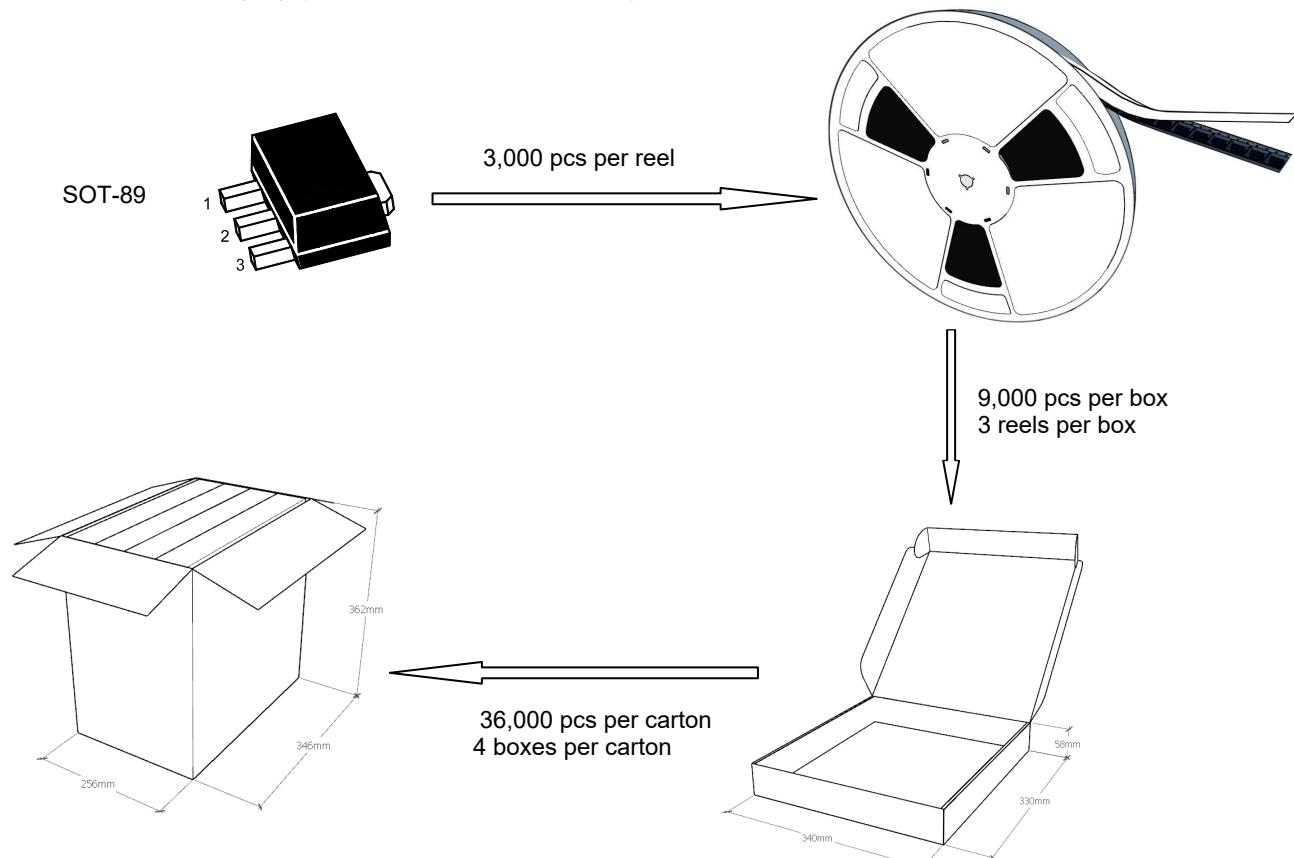
◆ **Embossed tape and reel data**
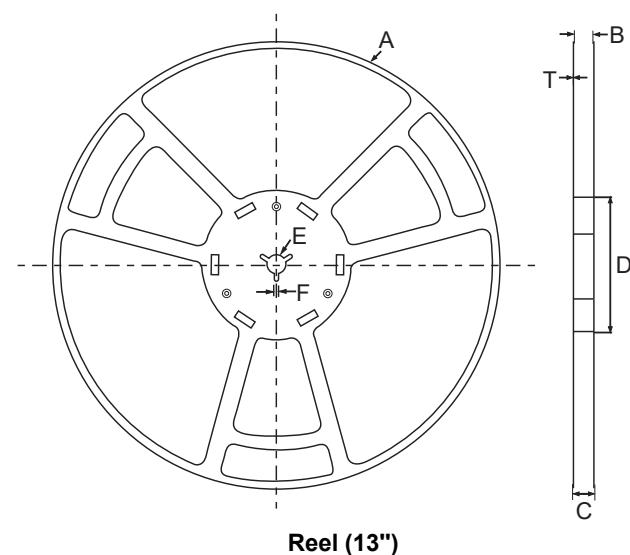
symbol	Value(unit:mm)
A	Φ330±1
B	12.7±0.5
C	16.5±0.3
D	Φ99.5±0.5
E	Φ13.6±0.3
F	2.8±0.3
T1	1.9±0.2

Reel (13")
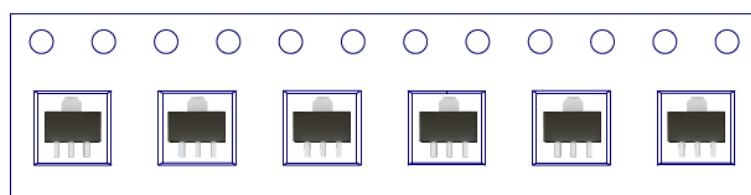
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