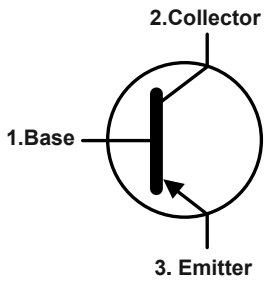


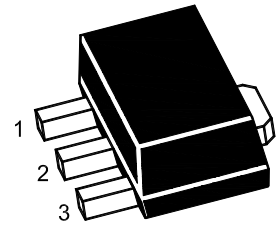
### Features

- Low saturation voltage
- Large power dissipation

### Equivalent Circuit



### SOT-89



1.Base 2.Collector 3. Emitter

### Marking Code :

2SB766ASQ-Q : BQ

2SB766ASQ-R : BR

2SB766ASQ-S : BS

### 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      | $-V_{EBO}$ | 5           | 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   |

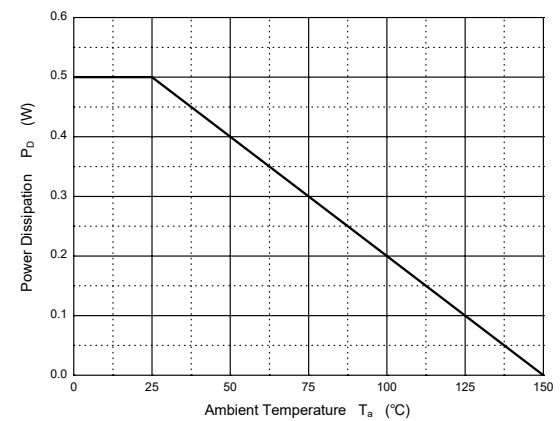
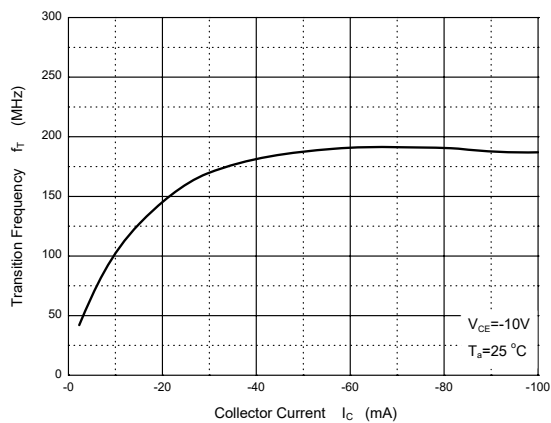
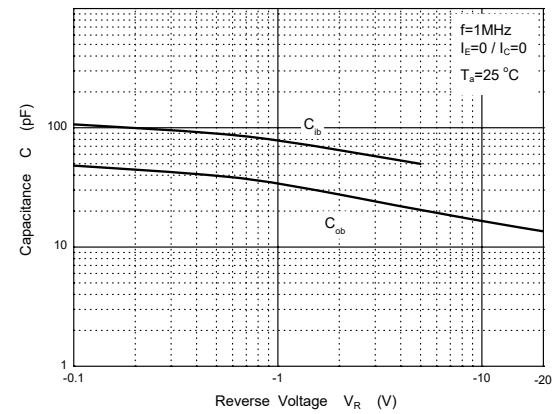
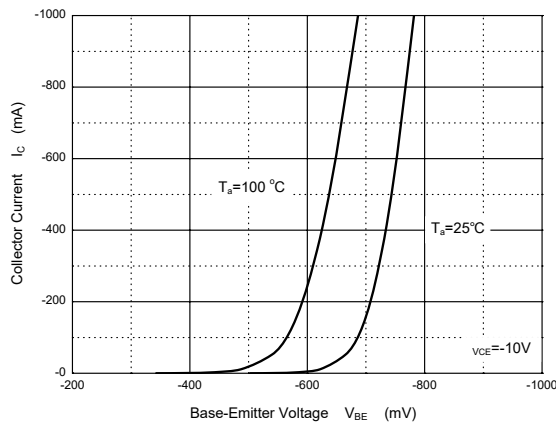
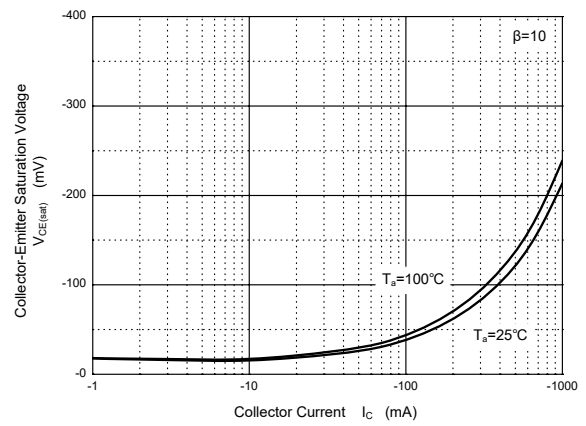
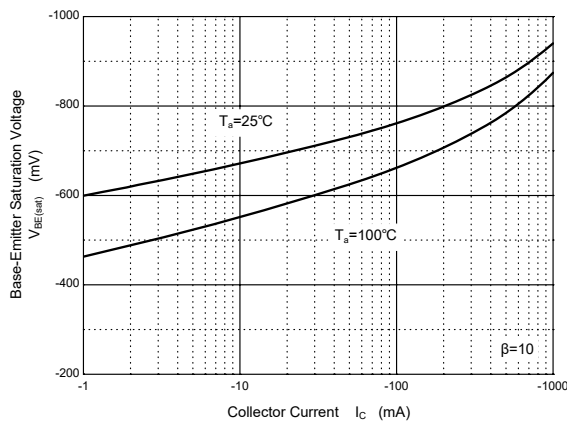
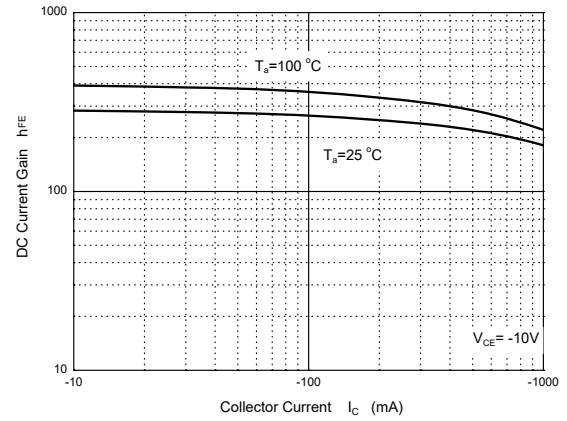
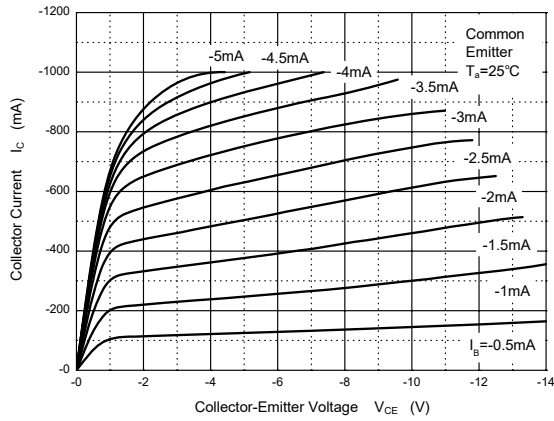


### Electrical Characteristics (T<sub>A</sub>=25°C)

| Parameter   | Symbol                | Min. | Typ. | Max. | Unit |
|---|-----------------------|------|------|------|------|
| DC Current Gain<br>at V <sub>CE</sub> = -10 V, I <sub>C</sub> = -500 mA    Current Gain Group | Q                     | 85   | --   | 170  | --   |
|   | R                     | 120  | --   | 240  |      |
|   | S                     | 170  | --   | 340  |      |
|   |                       | 50   | --   | --   |      |
| at V <sub>CE</sub> = -5 V, I <sub>C</sub> = -1 A  |                       |      |      |      |      |
| Collector Base Cutoff Current<br>at V <sub>CB</sub> = -20V                                    | -I <sub>CBO</sub>     | --   | --   | 0.1  | μA   |
| Emitter Base Cutoff Current<br>at V <sub>EB</sub> = -4 V                                      | -I <sub>EBO</sub>     | --   | --   | 0.1  | μA   |
| Collector Base Breakdown Voltage<br>at I <sub>C</sub> = -10 μA                                | -V <sub>(BR)CBO</sub> | 60   | --   | --   | V    |
| Collector Emitter Breakdown Voltage<br>at I <sub>C</sub> = -2 mA                              | -V <sub>(BR)CEO</sub> | 50   | --   | --   | V    |
| Emitter Base Breakdown Voltage<br>at I <sub>E</sub> = -10 μA                                  | -V <sub>(BR)EBO</sub> | 5    | --   | --   | V    |
| Collector Emitter Saturation Voltage<br>at I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA  | -V <sub>CE(sat)</sub> | --   | --   | 0.4  | V    |
| Base Emitter Saturation Voltage<br>at I <sub>C</sub> = -500 mA, I <sub>B</sub> = -50 mA       | -V <sub>BE(sat)</sub> | --   | --   | 1.2  | V    |
| Transition Frequency<br>at V <sub>CE</sub> = -10 V, I <sub>C</sub> = -50 mA, f = 200 MHz      | F <sub>T</sub>        | --   | 200  | --   | MHz  |
| Output Capacitance<br>at V <sub>CB</sub> = -10 V, I <sub>E</sub> =0, f = 1 MHz                | C <sub>ob</sub>       | --   | --   | 30   | pF   |



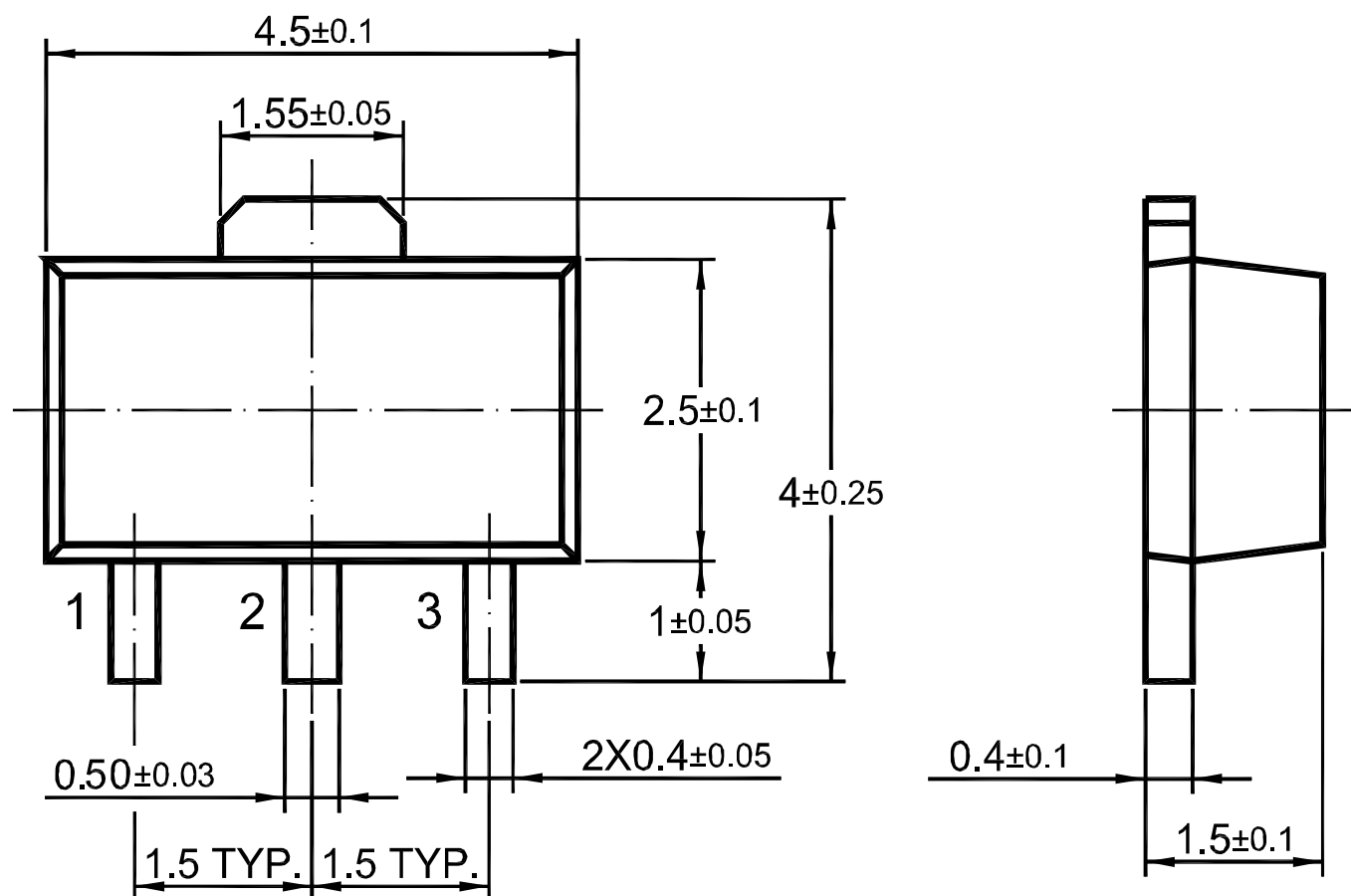
### Typical Characteristic Curves



### Package Outline

SOT-89

Dimensions in mm



### Ordering Information

| Device    | Package | Shipping               |
|-----------|---------|------------------------|
| 2SB766ASQ | 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

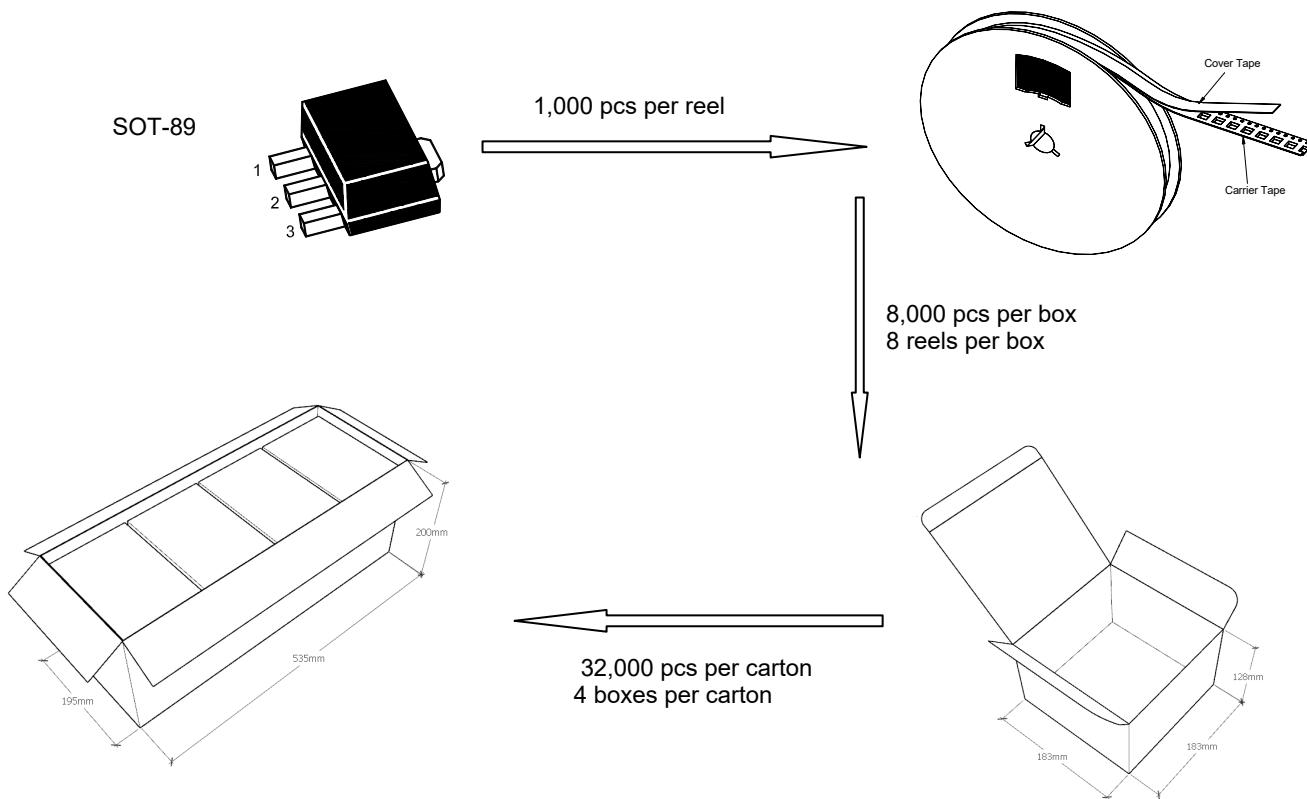
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

#### ◆ Storage conditions

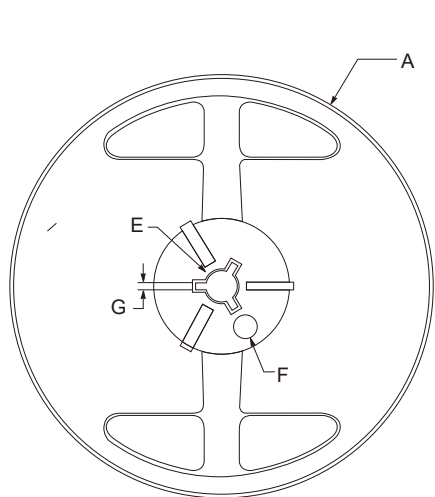
- **Temperature**  
5 to 40 °C
- **Humidity**  
30 to 80% RH
- **Recommended period**  
One year after manufacturing

### Package Specifications

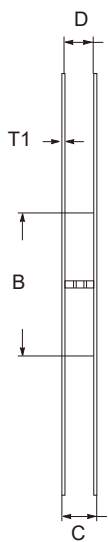
- The method of packaging (1,000PCS/Reel&7inches)



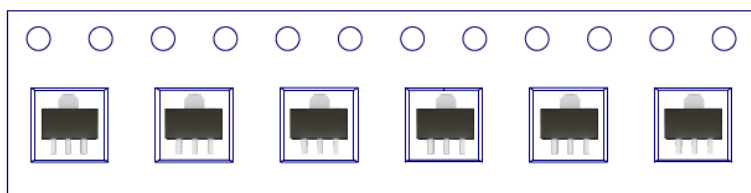
### ◆ Embossed tape and reel data



Reel (7")

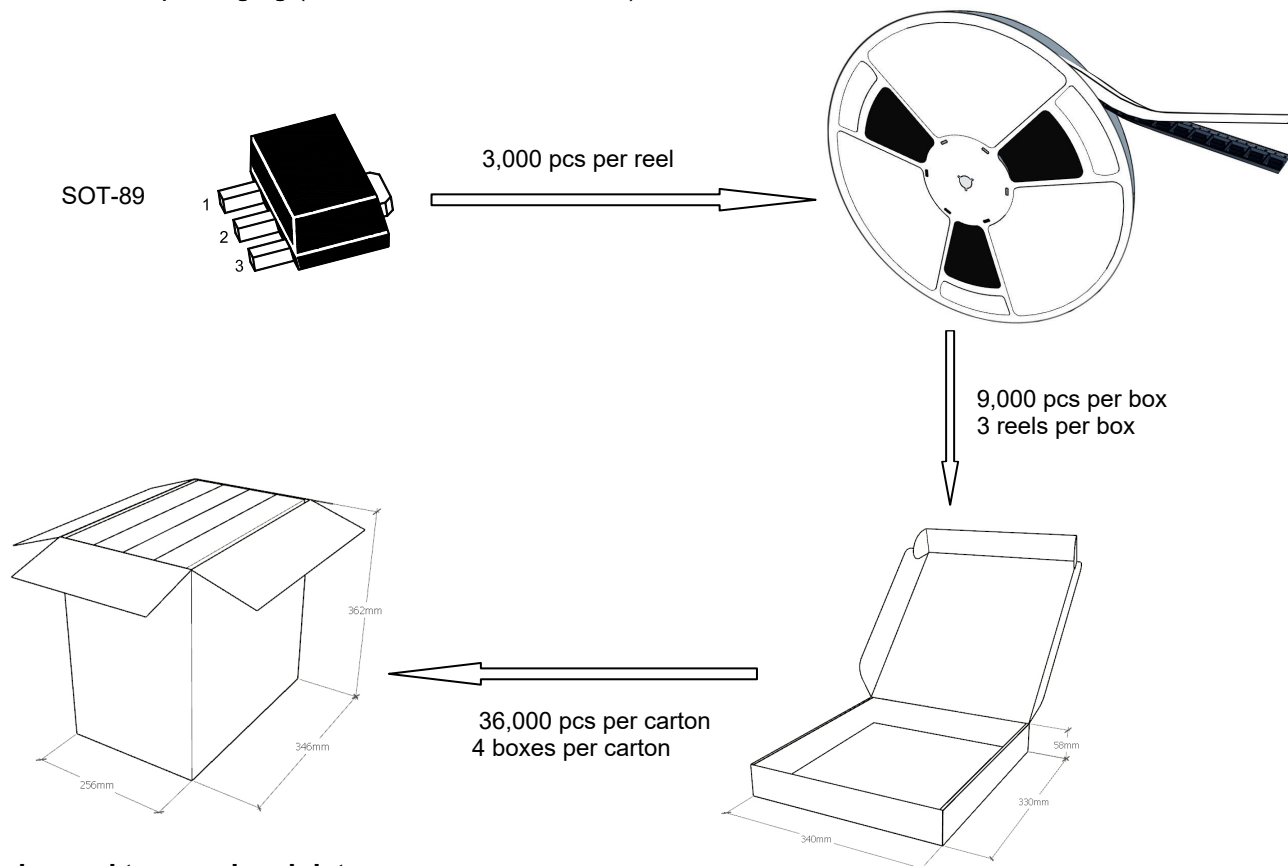


| symbol | Value(unit:mm)      |
|--------|---------------------|
| A      | $\Phi 179 \pm 1$    |
| B      | $60.5 \pm 0.2$      |
| C      | $15.3 \pm 0.3$      |
| D      | 12.5~13.7           |
| E      | $\Phi 13.5 \pm 0.2$ |
| F      | $\Phi 10.0 \pm 0.2$ |
| G      | $2.7 \pm 0.2$       |
| T1     | $1.0 \pm 0.2$       |



### Package Specifications

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



### ◆ Embossed tape and reel data



| symbol | Value(unit:mm)      |
|--------|---------------------|
| A      | $\Phi 330 \pm 1$    |
| B      | $12.7 \pm 0.5$      |
| C      | $16.5 \pm 0.3$      |
| D      | $\Phi 99.5 \pm 0.5$ |
| E      | $\Phi 13.6 \pm 0.3$ |
| F      | $2.8 \pm 0.3$       |
| T1     | $1.9 \pm 0.2$       |

