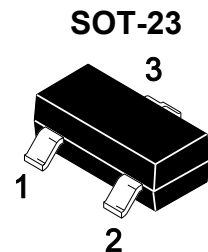




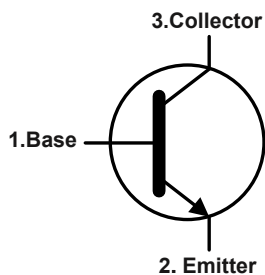
# BC846~BC850 NPN Transistor

## Features

- For Switching and AF Amplifier Applications.



## Equivalent Circuit



1.Base 2.Emitter 3.Collector

### Marking Code :

BC846A : 1A BC846B : 1B BC846C : 2C  
BC847A : 2E BC847B : 1F. BC847C : 1G  
BC848A : 1J BC848B : 1K BC848C : 1L  
BC849A : 1M BC849B : 1N BC849C : 1R  
BC850A : 1S BC850B : 1T BC850C : 2G

## Absolute Maximum Ratings

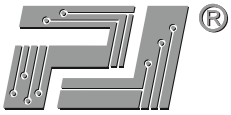
Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	BC846	80
		BC847 BC850	50
		BC848 BC849	30
Collector Emitter Voltage	$V_{CEO}$	BC846	65
		BC847 BC850	45
		BC848 BC849	30
Emitter Base Voltage	$V_{EBO}$	BC846 BC847	6
		BC848 BC849 BC850	5
		Collector Current	$I_C$
Peak Collector Current	$I_{CM}$	200	mA
Maximum Power Dissipation	$P_D$	300	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-65 to +150	°C

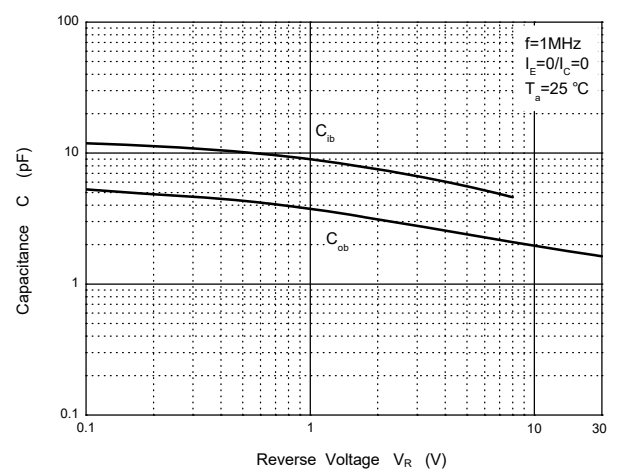
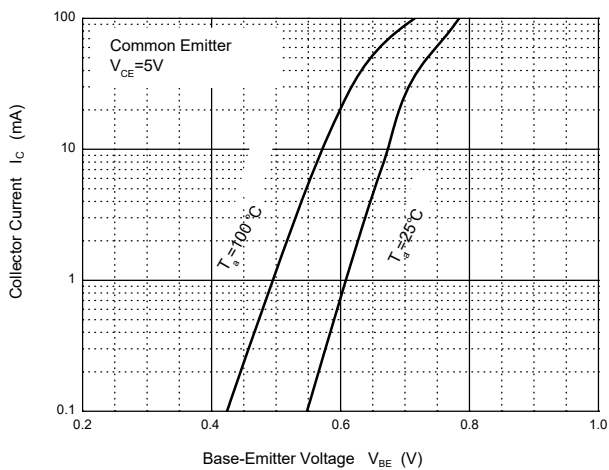
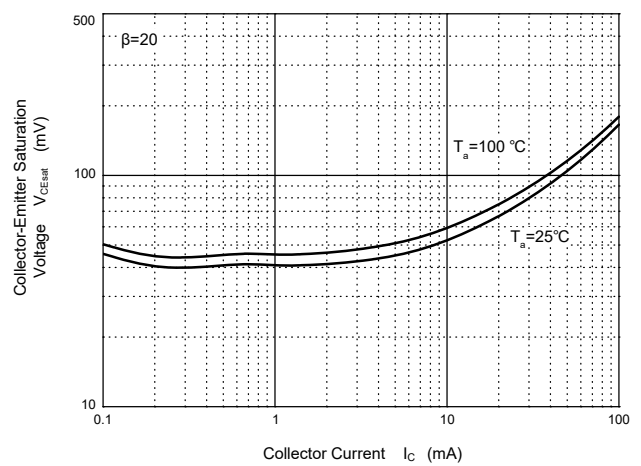
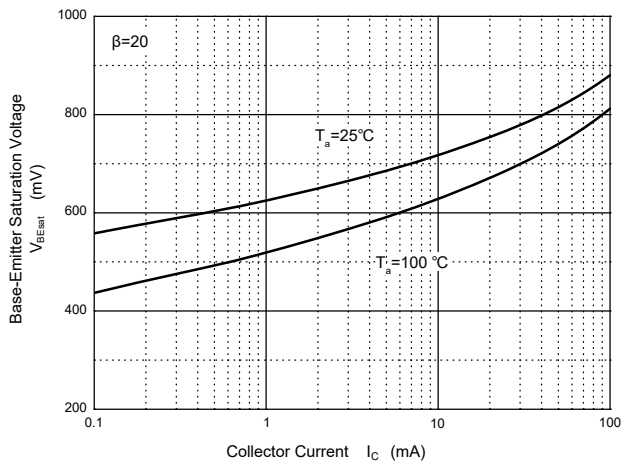
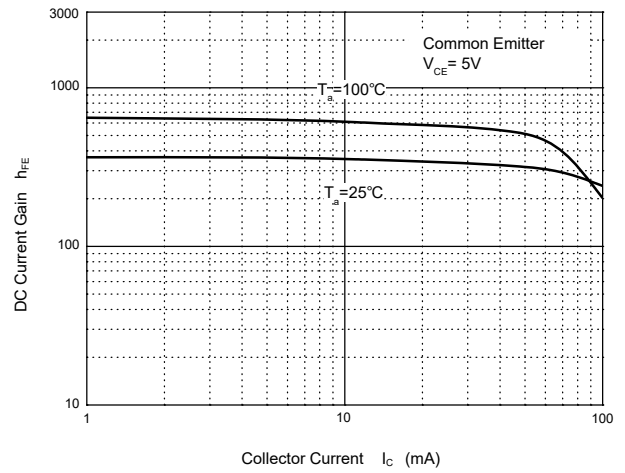
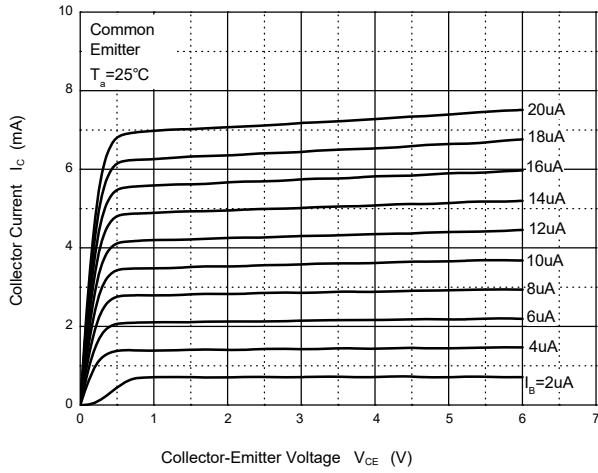


### Electrical Characteristics (T<sub>A</sub>=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA	Gain Group A B C	110 200 420	-- -- --	220 450 800	--
Collector Base Cutoff Current at V <sub>CB</sub> = 30V	I <sub>CBO</sub>	--	--	15	nA
Collector Base Breakdown Voltage at I <sub>C</sub> = 100 μA	BC846 BC847 BC850 BC848 BC849	80 50 30	-- -- --	-- -- --	V
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 2 mA	BC846 BC847 BC850 BC848 BC849	65 45 30	-- -- --	-- -- --	V
Emitter Base Breakdown Voltage at I <sub>E</sub> = 100 μA	BC846 BC847 BC848 BC849 BC850	6 5	-- --	-- --	V
Collector Emitter Saturation Voltage at I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA at I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA	V <sub>CE(sat)</sub>	-- --	-- --	250 600	mV
Base Emitter On Voltage at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA	V <sub>BE(on)</sub>	-- --	-- --	700 720	mV
Transition Frequency at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz	F <sub>T</sub>	--	300	--	MHz
Output Capacitance at V <sub>CB</sub> = 10 V, f = 1 MHz	C <sub>ob</sub>	--	--	6	pF
Input Capacitance at V <sub>EB</sub> = 0.5 V, f = 1 MHz	C <sub>ib</sub>	--	9	--	pF



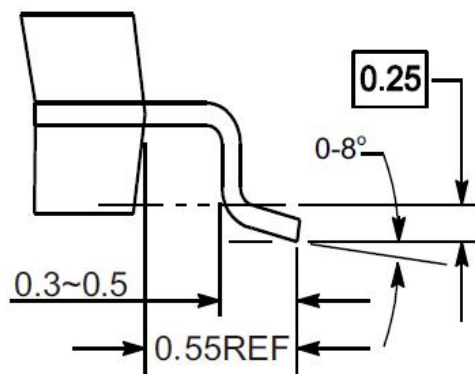
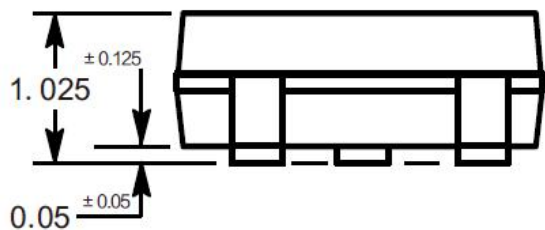
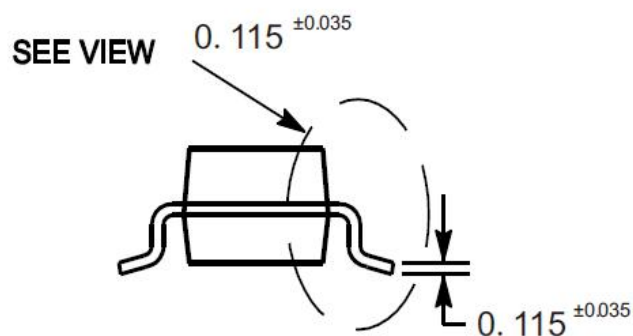
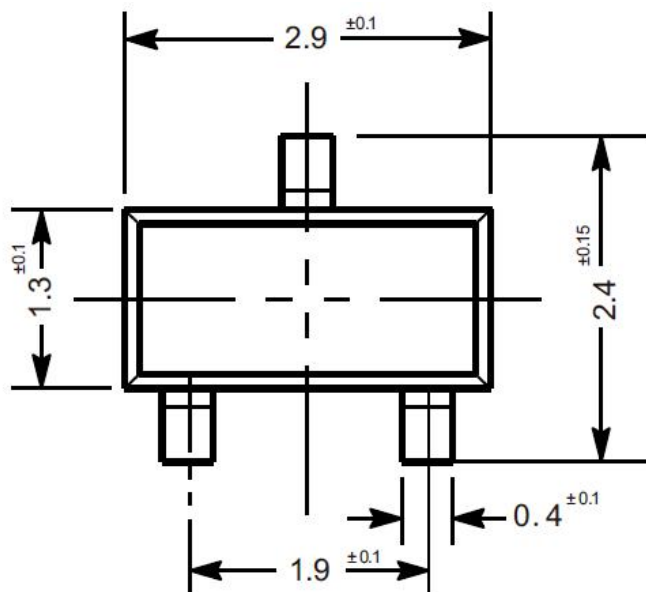
### Typical Characteristic Curves



### Package Outline

SOT-23

Dimensions in mm



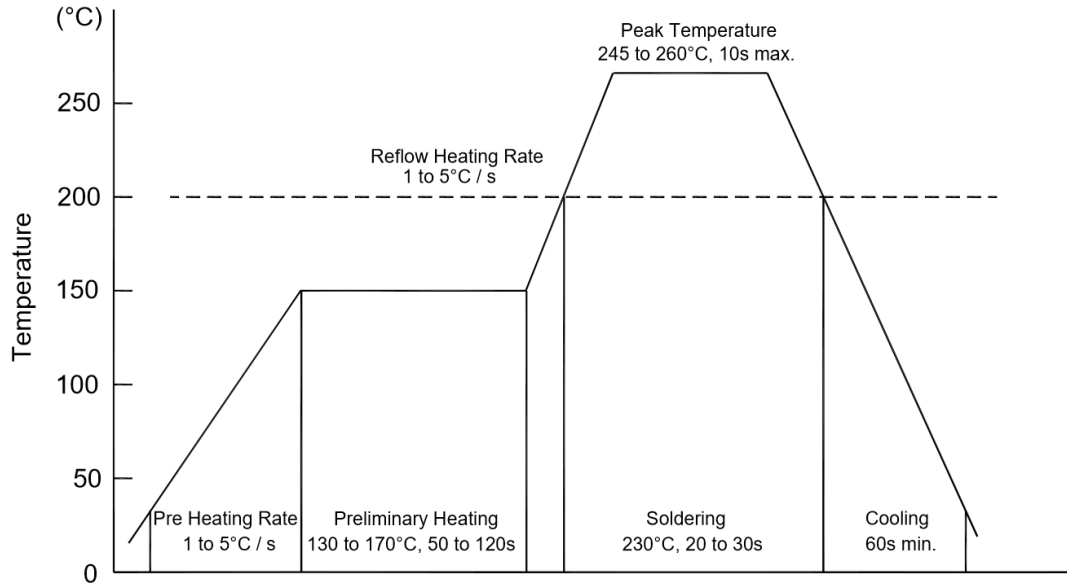
VIEW C

### Ordering Information

Device	Package	Shipping
BC846~BC850	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

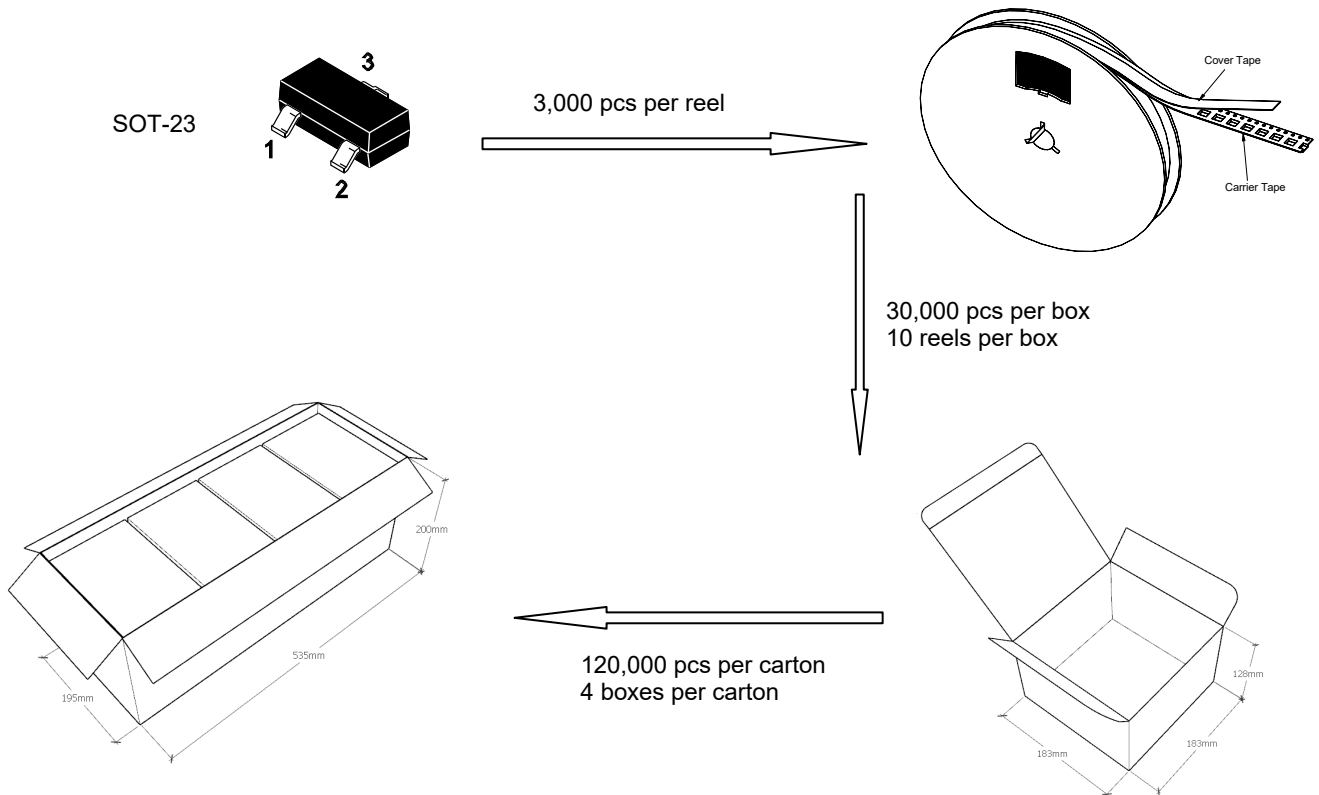
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

#### ◆ Storage conditions

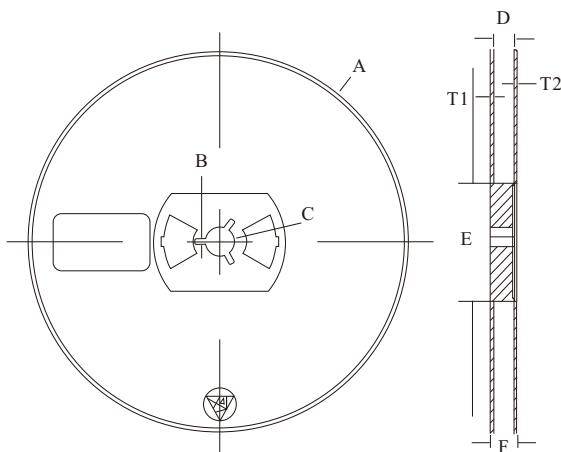
- **Temperature**  
5 to 40 °C
- **Humidity**  
30 to 80% RH
- **Recommended period**  
One year after manufacturing

### 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")

