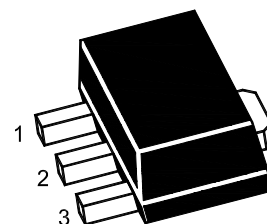


Features

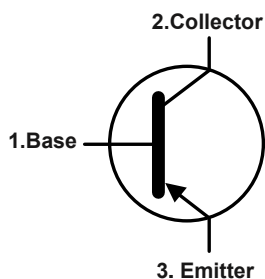
- High Current
- Low Saturation Voltage
- As Complementary Type of the NPN Transistor FCX493 is Recommended

SOT-89



1.Base 2.Collector 3. Emitter

Equivalent Circuit



Marking Code : P93

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	120	V
Collector Emitter Voltage	$-V_{CEO}$	100	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	1	A
Peak Collector Current	$-I_{CM}$	2	A
Maximum Power Dissipation	P_D	500	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

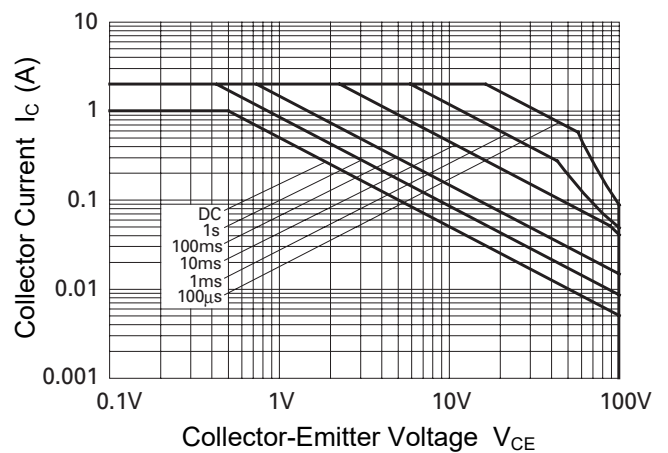
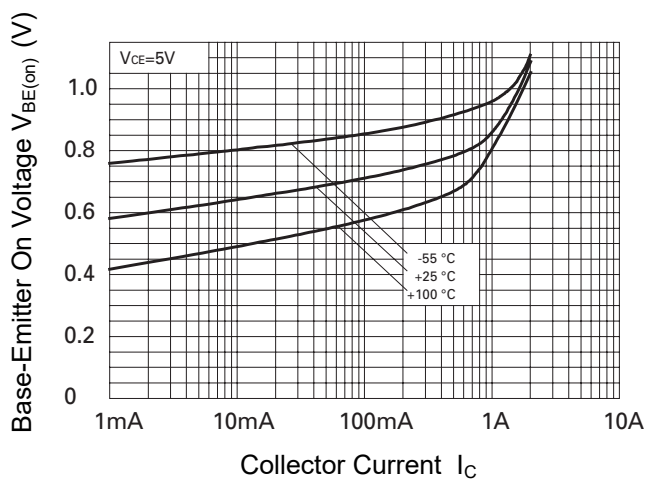
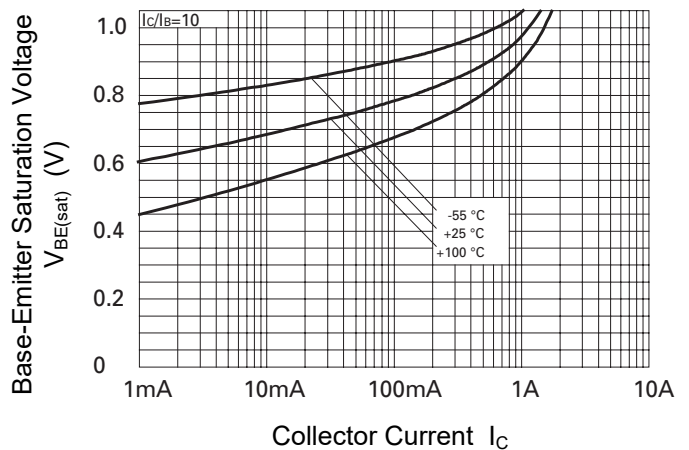
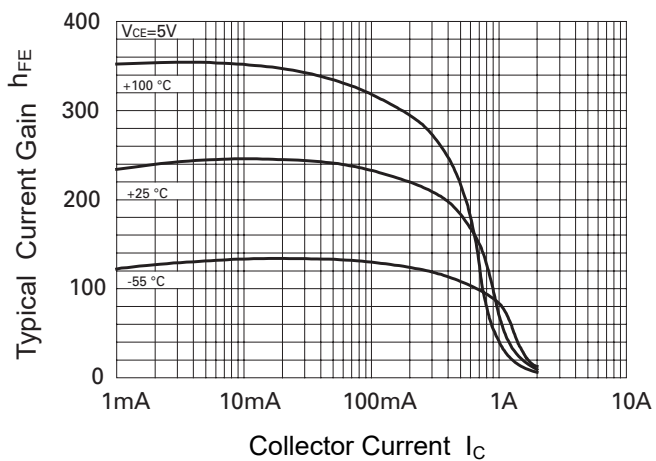
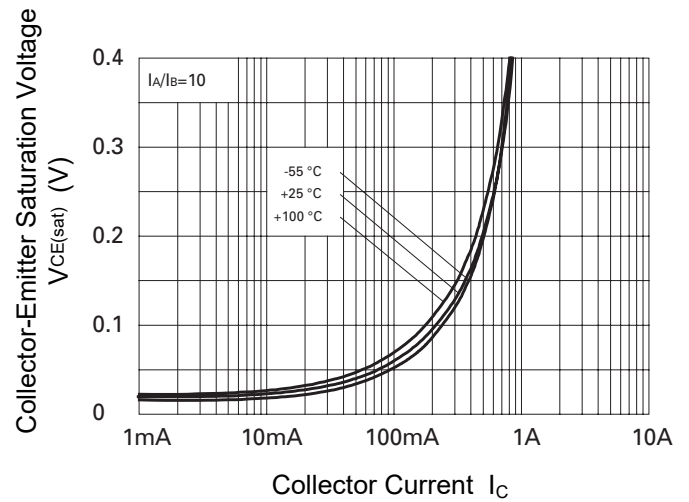
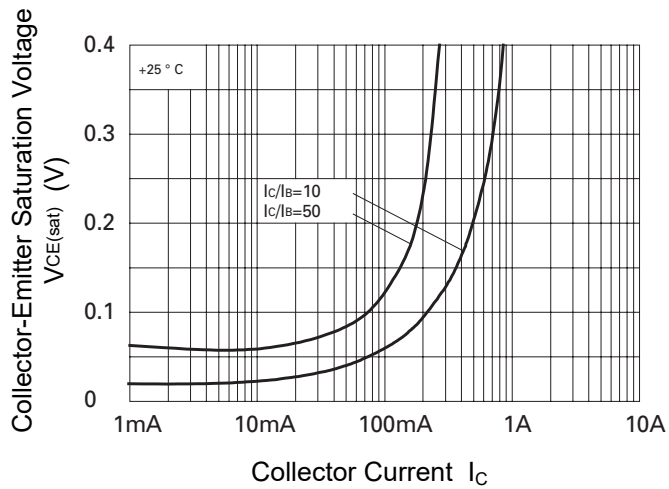
Parameter	Symbol	Value	Unit
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	250	°C/W



Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V _{CE} = -5 V, I _C = -1 mA at V _{CE} = -5 V, I _C = -250 mA at V _{CE} = -5 V, I _C = -500 mA at V _{CE} = -5 V, I _C = -1 A	H _{FE}	100 100 100 50	-- -- 300 --	--
Collector Base Cutoff Current at V _{CB} = -100 V	-I _{CBO}	--	100	nA
Emitter Base Cutoff Current at V _{EB} = -4 V	-I _{EBO}	--	100	nA
Collector Base Breakdown Voltage at I _C = -100 μA	-V _{(BR)CBO}	120	--	V
Collector Emitter Breakdown Voltage at I _C = -1 mA	-V _{(BR)CEO}	100	--	V
Emitter Base Breakdown Voltage at I _E = -100 μA	-V _{(BR)EBO}	5	--	V
Collector Emitter Saturation Voltage at I _C = -250 mA, I _B = -25 mA at I _C = -500 mA, I _B = -50 mA	-V _{CE(sat)}	-- --	0.2 0.3	V
Base Emitter Saturation Voltage at I _C = -500 mA, I _B = -50 mA	-V _{BE(sat)}	--	1.1	V
Base Emitter On Voltage at V _{CE} = -5 V, I _C = -1 mA	-V _{BE(on)}	--	1	V
Transition Frequency at V _{CE} = -10 V, I _C = -50 mA, f = 100 MHz	F _T	50	--	MHz
Output Capacitance at V _{CB} = -10 V, f = 1 MHz	C _{ob}	--	5	pF

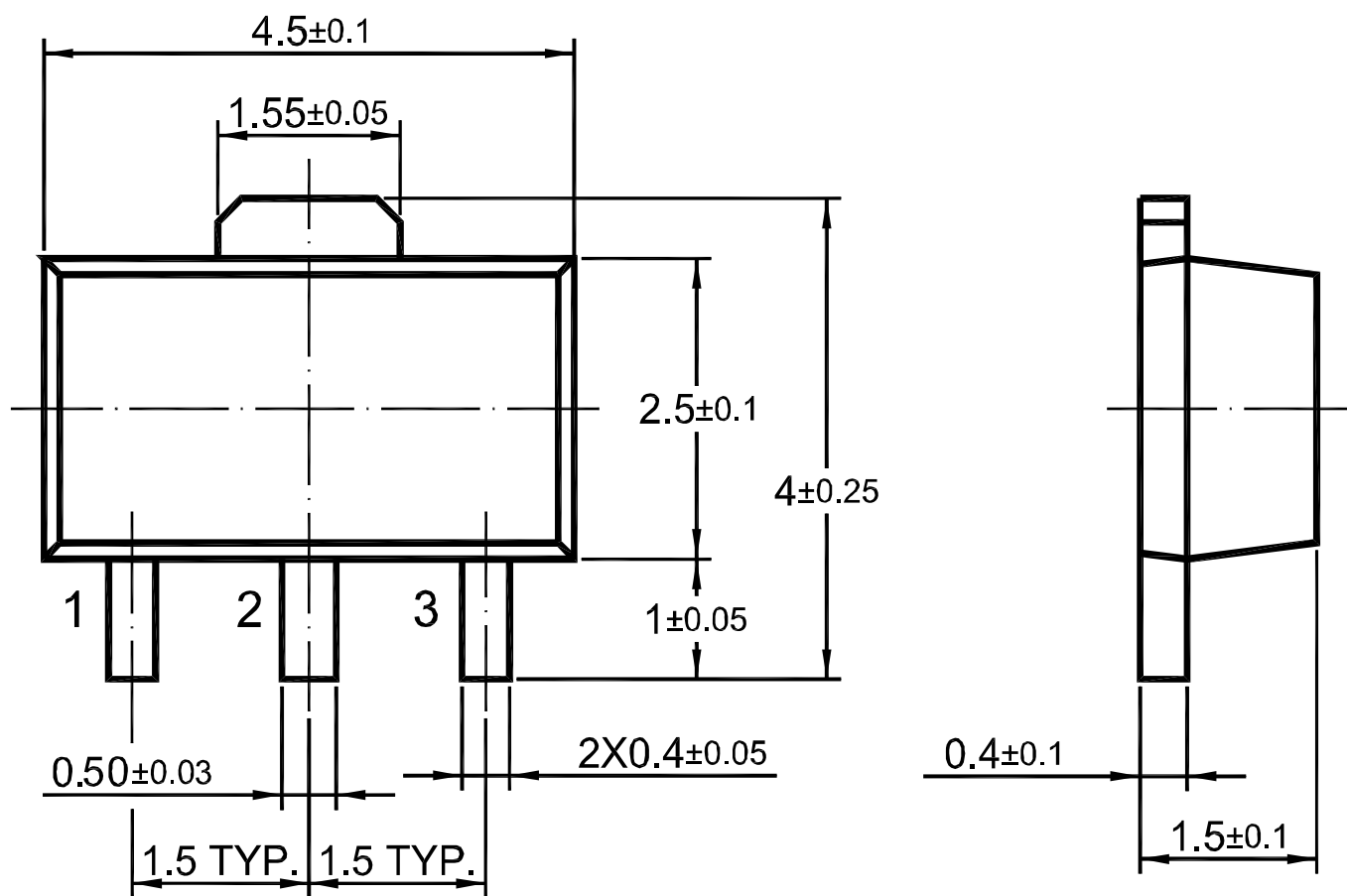
Typical Characteristic Curves



Package Outline

SOT-89

Dimensions in mm



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

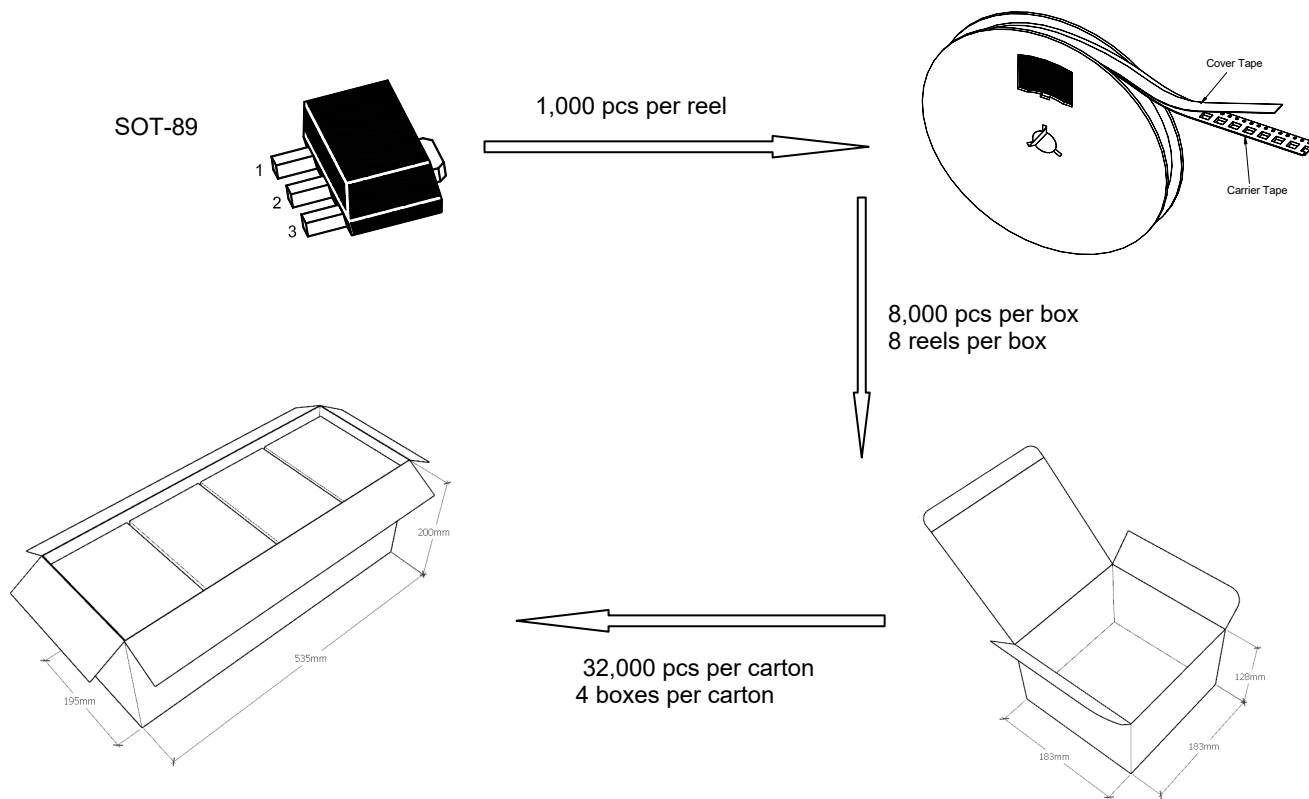
- Temperature: 370 °C
- Time: 3s max.
- Times: one time

◆ Storage conditions

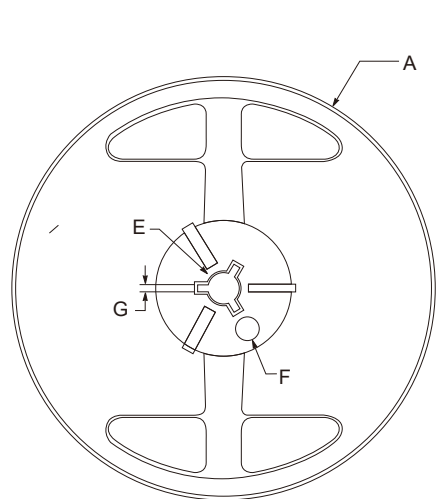
- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

Package Specifications

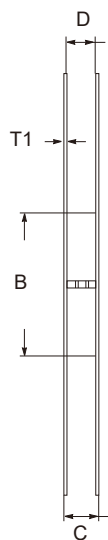
- The method of packaging (1,000PCS/Reel&7inches)



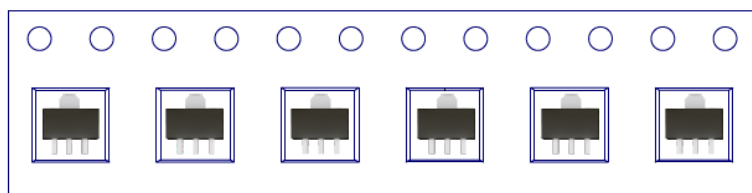
◆ Embossed tape and reel data



Reel (7")

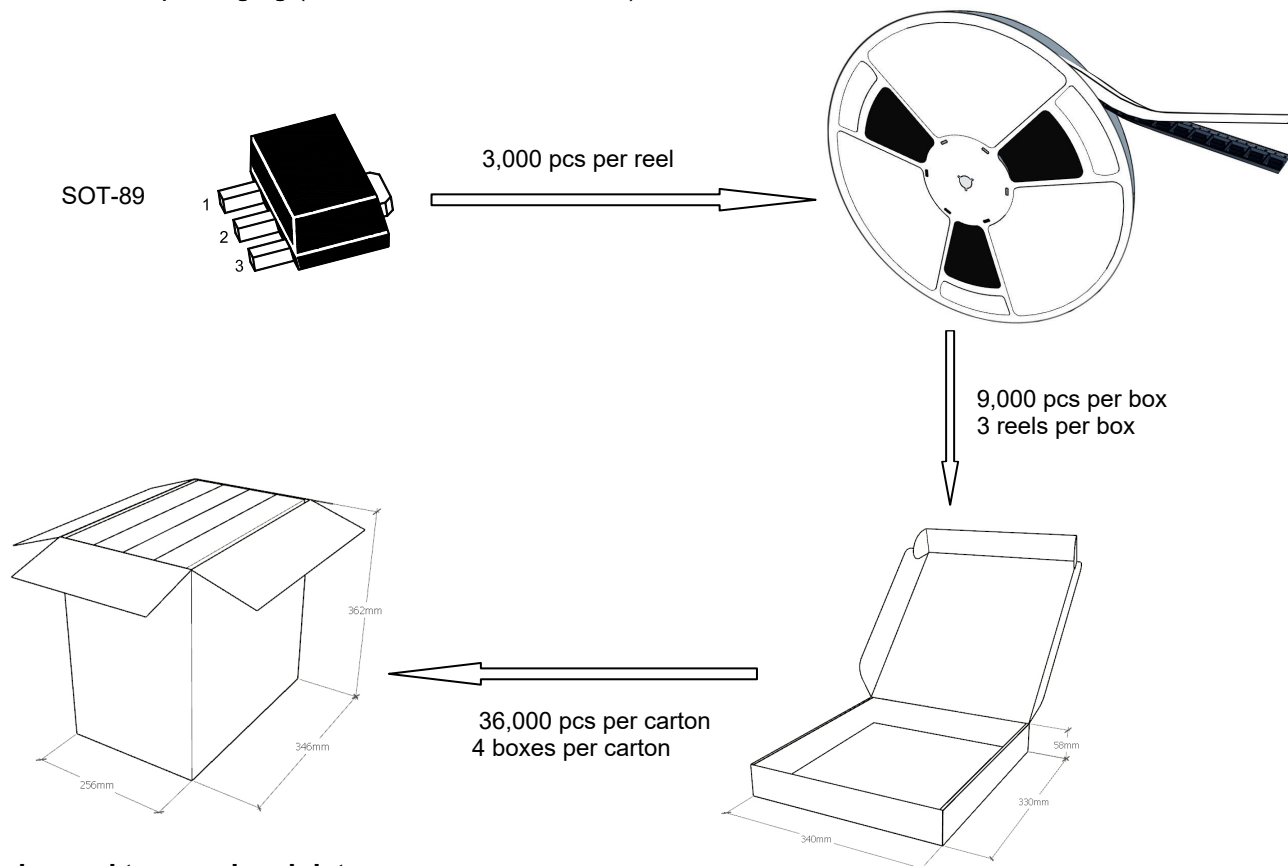


symbol	Value(unit:mm)
A	$\Phi 179 \pm 1$
B	60.5 ± 0.2
C	15.3 ± 0.3
D	$12.5 \sim 13.7$
E	$\Phi 13.5 \pm 0.2$
F	$\Phi 10.0 \pm 0.2$
G	2.7 ± 0.2
T1	1.0 ± 0.2



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 ± 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
T1	1.9 ± 0.2

