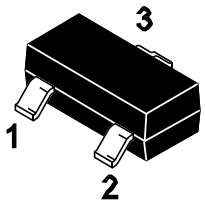
BCV27
BCV47
NPN Darlington Transistor

Features

- High Collector Current
- High Current Gain

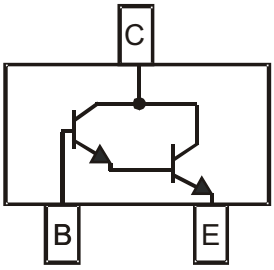
SOT-23



1.Base 2.Emitter 3.Collector

Marking Code:
BCV27 : FF
BCV47 : FH

Equivalent Circuit



Absolute Maximum Ratings

Ratings at 25℃ ambient temperature unless otherwise specified.

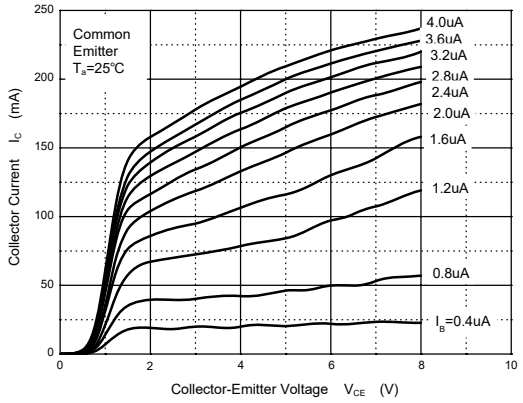
Parameter		Symbol	Value	Unit
Collector Base Voltage	BCV27	V_{CBO}	40	V
	BCV47		80	
Collector Emitter Voltage	BCV27	V_{CEO}	30	V
	BCV47		60	
Emitter Base Voltage		V_{EBO}	10	V
Collector Current		I_C	500	mA
Peak Collector Current		I_{CM}	800	mA
Base Current		I_B	100	mA
Maximum Power Dissipation		P_D	200	mW
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-65 to +150	℃

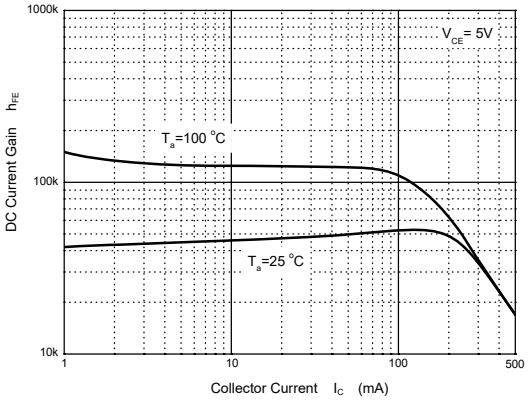
Electrical Characteristics

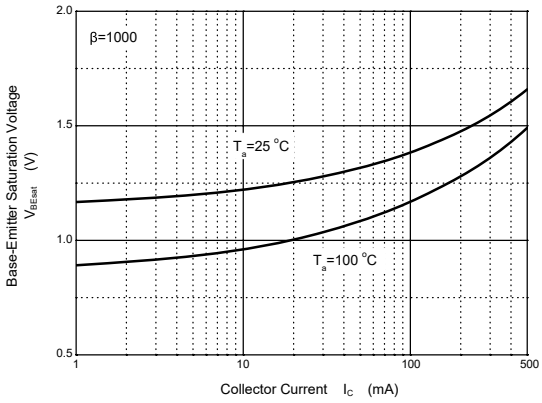
Ratings at 25℃ ambient temperature unless otherwise specified.

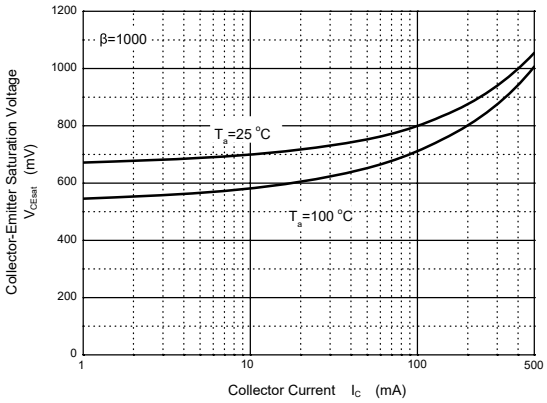
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain						
at V_{CE} = 5 V, I_C = 1 mA	BCV27		4000	--	--	
	BCV47		2000	--	--	
at V_{CE} = 5 V, I_C = 10 mA	BCV27	H_{FE}	10000	--	--	--
	BCV47		4000	--	--	
at V_{CE} = 5 V, I_C = 100 mA	BCV27		20000	--	--	
	BCV47		10000	--	--	
Collector Base Cutoff Current						
at V_{CB} = 30V	BCV27	I_{CBO}	--	--	100	nA
at V_{CB} = 60V	BCV47		--	--	100	
Emitter Base Cutoff Current at V_{EB} = 10 V		I_{EBO}	--	--	100	nA
Collector Base Breakdown Voltage						
at I_C = 100 μA	BCV27	$V_{(BR)CBO}$	40	--	--	V
	BCV47		80	--	--	
Collector Emitter Breakdown Voltage						
at I_C = 10 mA	BCV27	$V_{(BR)CEO}$	30	--	--	V
	BCV47		60	--	--	
Emitter Base Breakdown Voltage at I_E = 10 μA		$V_{(BR)EBO}$	10	--	--	V
Collector Emitter Saturation Voltage at I_C = 100 mA, I_B = 0.1 mA		$V_{CE(sat)}$	--	--	1	V
Base Emitter Saturation Voltage at I_C = 100 mA, I_B = 0.1 mA		$V_{BE(sat)}$	--	--	1.5	V
Base Emitter On Voltage at V_{CE} = 5 V, I_C = 10 mA		$V_{BE(on)}$	--	--	1.4	V
Transition Frequency at V_{CE} = 5 V, I_C = 30 mA, f = 100 MHz		F_T	--	220	--	MHz

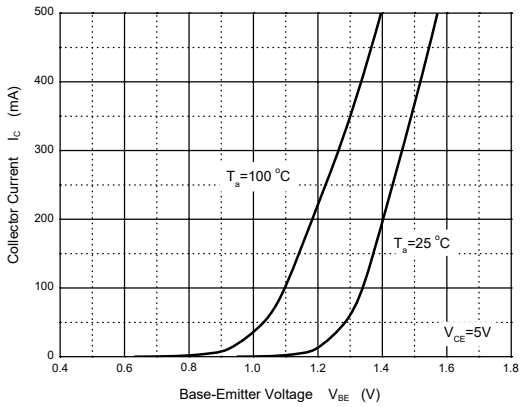
Typical Characteristic Curves

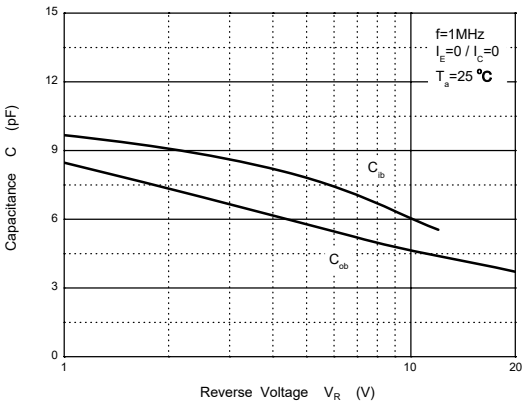


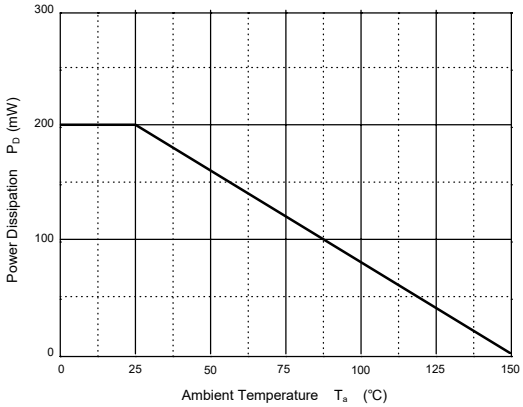






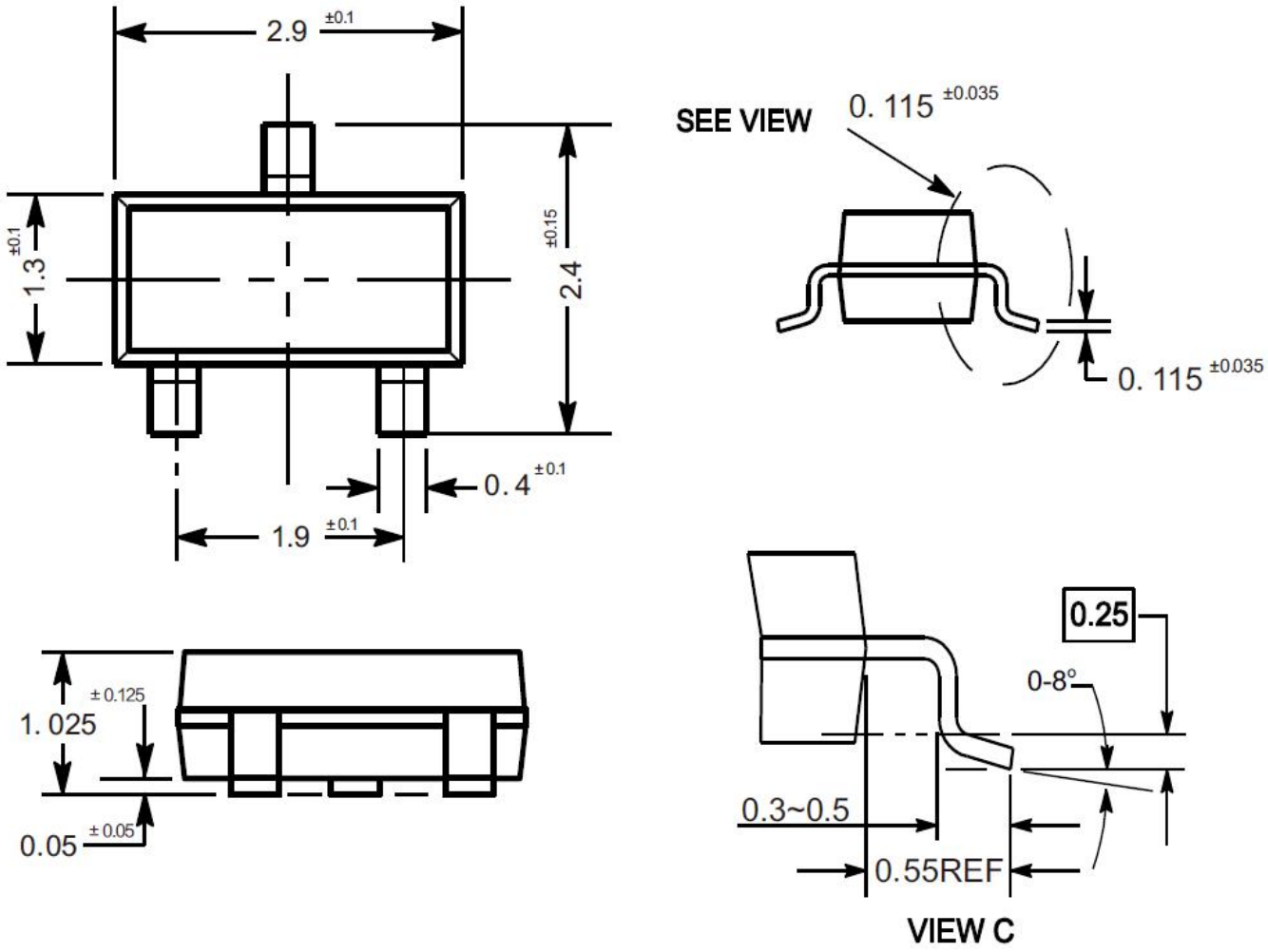






Package Outline

SOT-23
Dimensions in mm

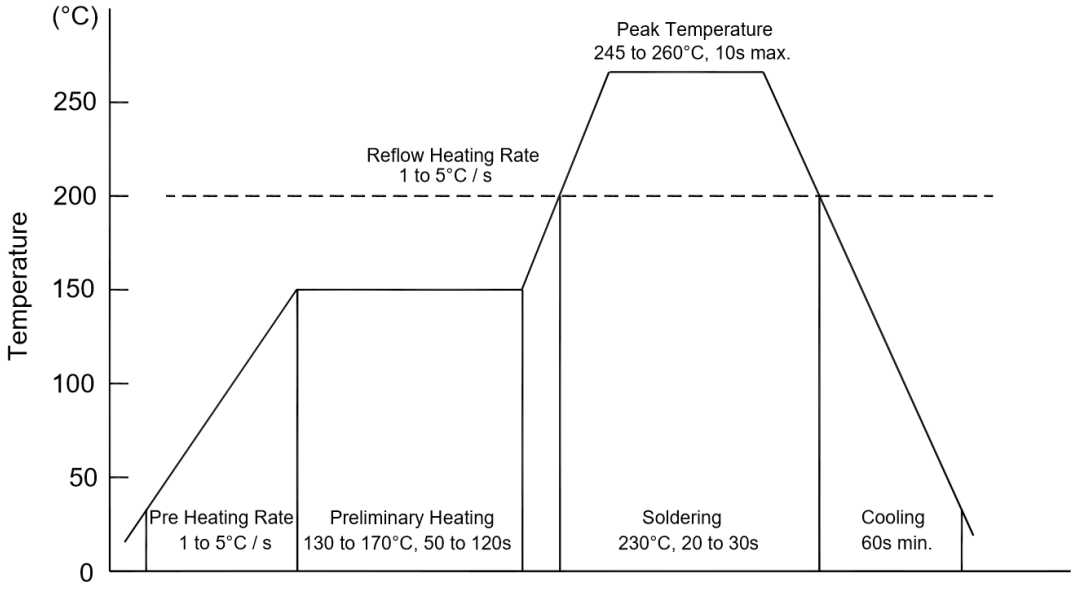


Ordering Information

Device	Package	Shipping
BCV27,BCV47	SOT-23	3,000PCS/Reel&7inches

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ^{O}C. If peak temperature is below 245 ^{O}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

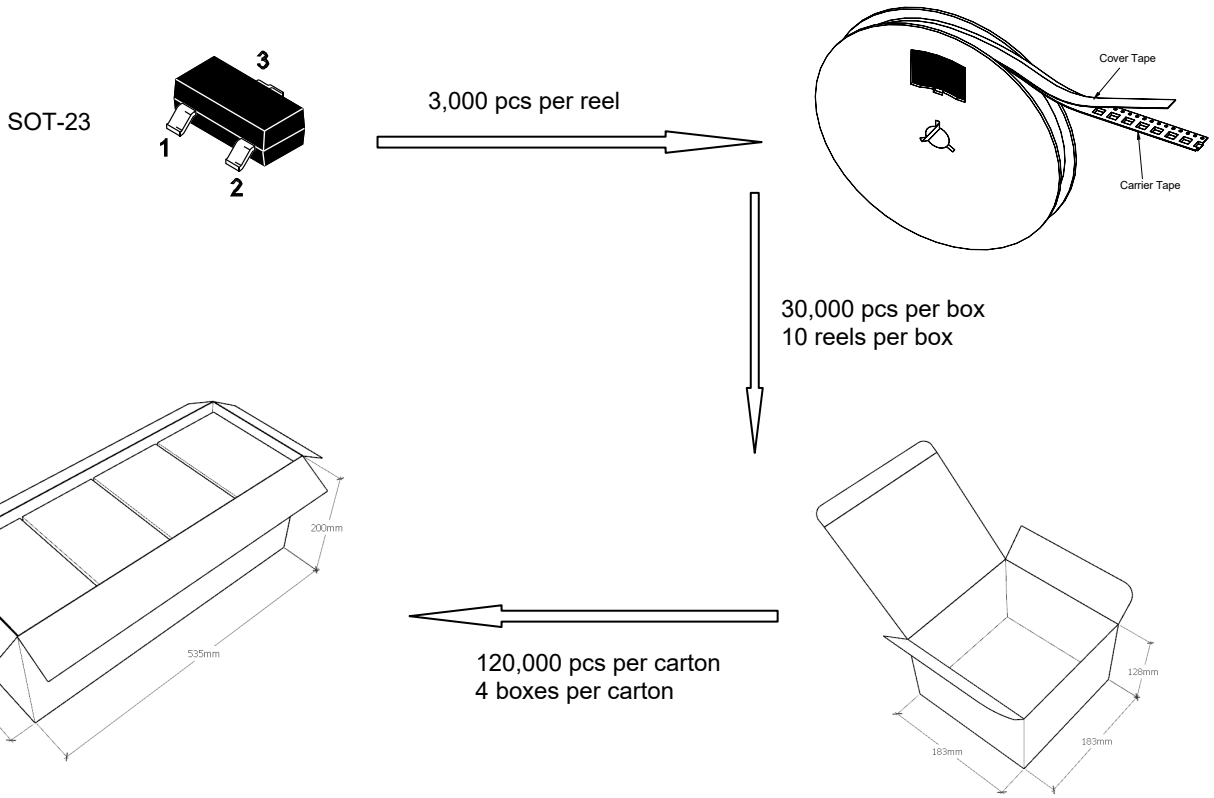
- Temperature: 370 ^{O}C
- Time: 3s max.
- Times: one time

◆ Storage conditions

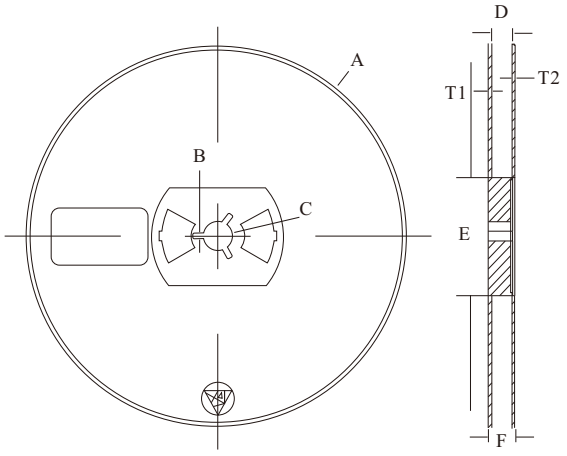
- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

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")