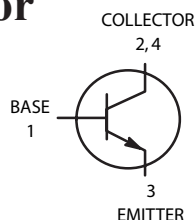
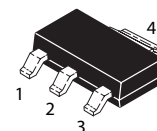


### NPN Silicon Planar Epitaxial Transistor

 Lead(Pb)-Free



1.BASE  
2.COLLECTOR  
3.EMITTER  
4.COLLECTOR



**SOT-223**

#### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	80	V
Collector-Base Voltage	V <sub>CB0</sub>	100	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current (DC)	I <sub>C(DC)</sub>	1	A
Total Device Dissipation T <sub>A</sub> =25°C	P <sub>D</sub>	2	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage, Temperature	T <sub>stg</sub>	-55 to +150	°C

#### Device Marking

BCP56=BCP56

#### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage (I <sub>C</sub> =1mA, I <sub>B</sub> =0)	V <sub>(BR)CEO</sub>	80	-	-	V
Collector-Base Breakdown Voltage (I <sub>C</sub> =100μA, I <sub>E</sub> =0)	V <sub>(BR)CBO</sub>	100	-	-	V
Emitter-Base Breakdown Voltage (I <sub>E</sub> =10 μA, I <sub>C</sub> =0)	V <sub>(BR)EBO</sub>	5	-	-	V
Collector-Emitter Cutoff Current (V <sub>CB</sub> =30V, I <sub>E</sub> =0) (V <sub>CB</sub> =30V, I <sub>E</sub> =0, T <sub>j</sub> =125°C)	I <sub>CBO</sub>	-	-	100 10	nA uA
Emitter-Base Cutoff Current (V <sub>EB</sub> =5V, I <sub>C</sub> =0)	I <sub>EBO</sub>	-	-	100	nA

## ON CHARACTERISTICS

DC Current Gain ( $V_{CE} = 2V, I_C = 5mA$ ) ( $V_{CE} = 2V, I_C = 150mA$ ) ( $V_{CE} = 2V, I_C = 500mA$ )	$h_{FE1}$ $h_{FE2}$ $h_{FE3}$	63 63 40	- - -	- 250 -	- - -
Collector-Emitter Saturation Voltages ( $I_C = 0.5mA, I_B = 50mA$ )	$V_{CE(sat)}$	-	-	500	mV
Base-Emitter ON Voltages ( $V_{CE} = 5V, I_C = 0.5A, f=100MHz$ )	$V_{BE(ON)}$	-	-	1	V

## DYNAMIC CHARACTERISTICS

Transition frequency ( $V_{CE} = 2V, I_C = 150mA$ )	ft	-	130	-	MHz
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## CLASSIFICATION OF $h_{FE2}$

Rank	10	16
Range	63-160	100-250

## CHARACTERISTICS CURVE

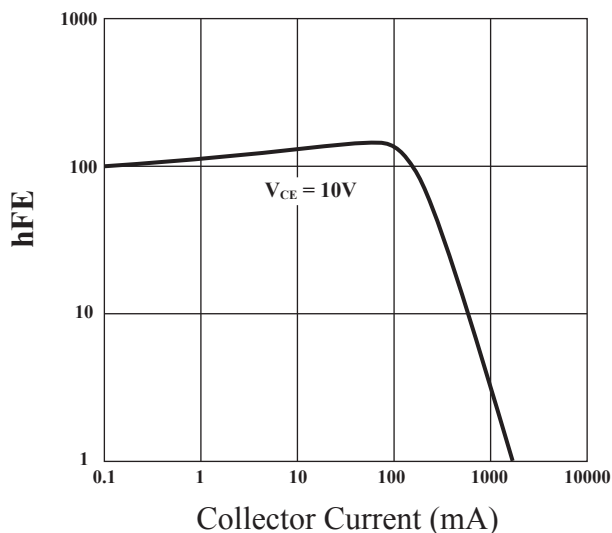


Fig.1 Current Gain & Collector Current

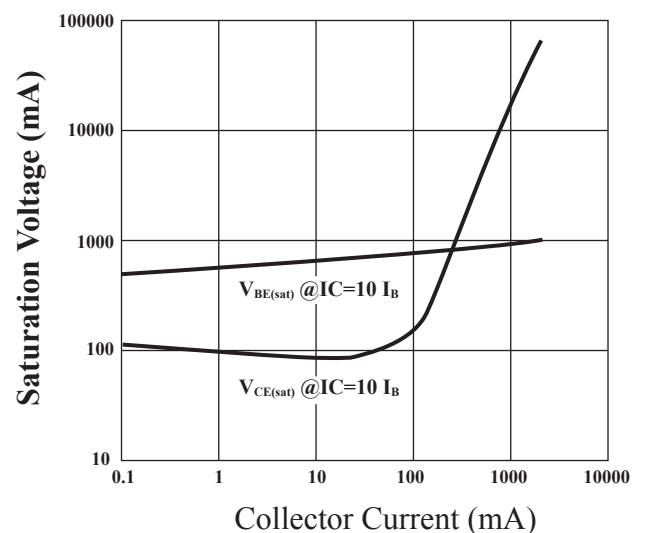


Fig.2 Saturation Voltage & Collector Current

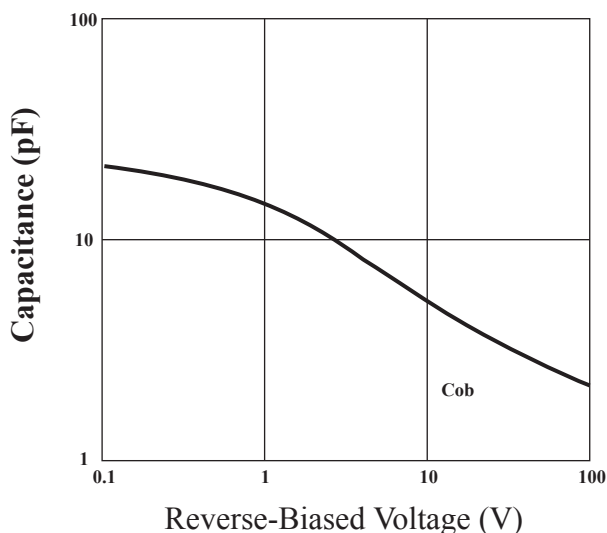


Fig.3 Capacitance & Reverse-Biased Voltage

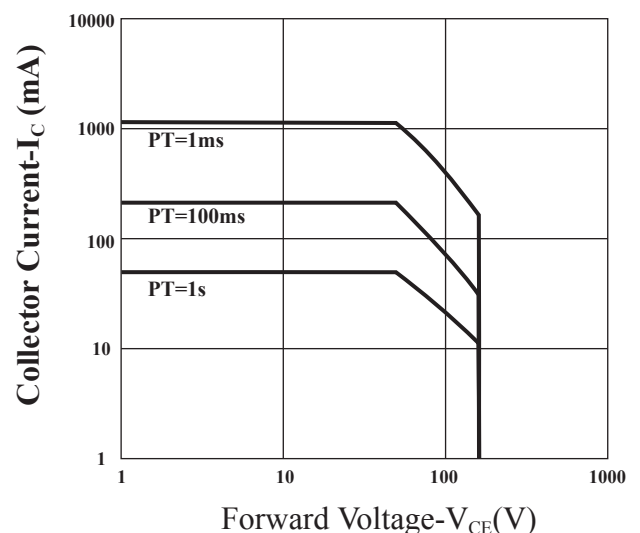
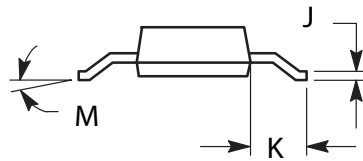
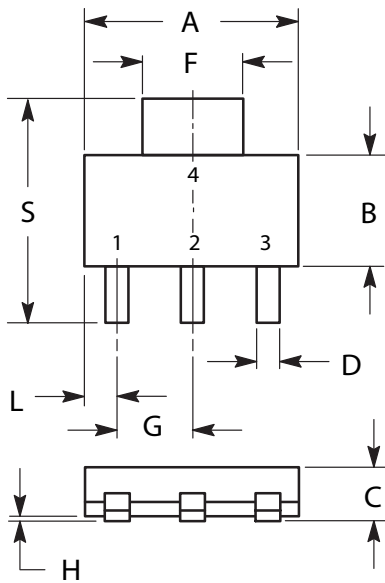


Fig.4 Safe Operation Area

## SOT-223 Outline Dimensions

unit:mm



DIM	MILLIMETERS	
	MIN	MAX
A	6.30	6.70
B	3.30	3.70
C	1.50	1.75
D	0.60	0.89
F	2.90	3.20
G	2.20	2.40
H	0.020	0.100
J	0.24	0.35
K	1.50	2.00
L	0.85	1.05
M	0°	10°
S	6.70	7.30