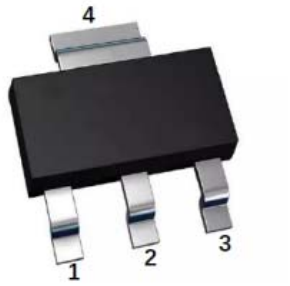
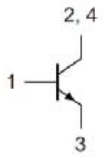
NPN Transistor





1-Base
2-Collector
3-Emitter
4-Collector

Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for auto matic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package**: SOT-223
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code			BCP56	BCP56-16
			BCP56-16	BCP56-16
Collector-base voltage	V_{CBO}	V	I_C=100uA, I_E=0	100
Collector-emitter voltage	V_{CEO}	V	I_C=10mA, I_B=0	80
Emitter-base voltage	V_{EBO}	V	I_E=10uA, I_C=0	5
Collector current	I_C	A		1
Power dissipation	P_D	W		1.5
Operation junction temperature	T_J	℃		-55 to +150
Storage temperature	T_{STG}	℃		-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

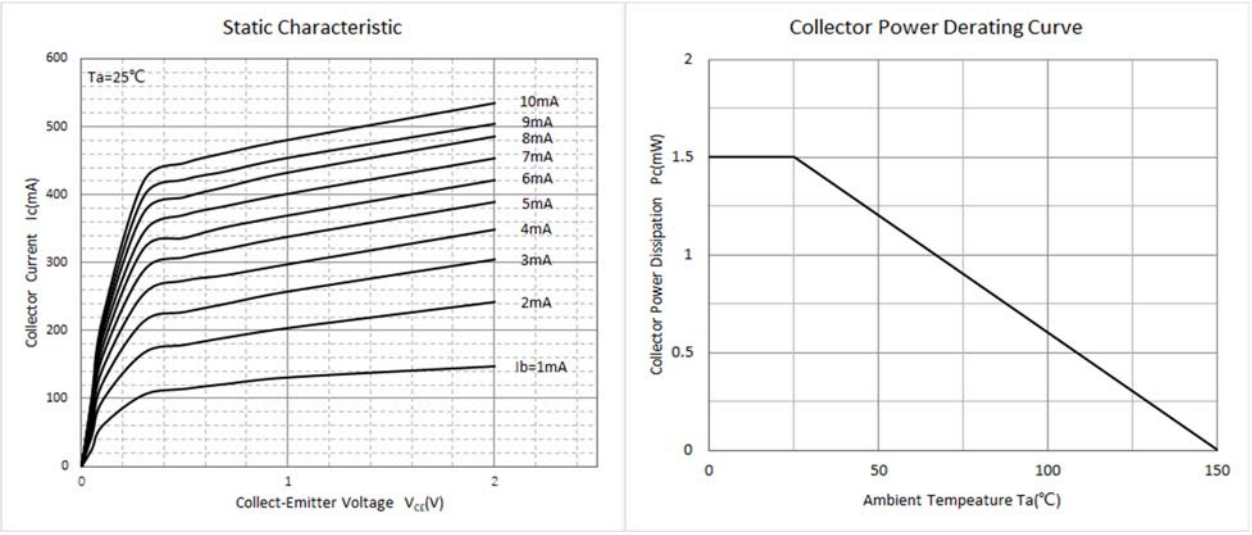
Item	Symbol	Unit	Conditions		Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=100μA,I_E=0		100		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C =10mA,I_B=0		80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=10μA,I_C=0		5		
Collector-base cut-off current	I_{CBO}	nA	V_{CB}=30V				100
DC current gain	h_{FE1}		V_{CE}=2V,I_C=5mA		25		
	h_{FE2}		BCP56	V_{CE}=2V,I_C=150mA	63		250
			BCP56-16		100		250
	h_{FE3}		V_{CE}=2V,I_C=500mA		25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=500mA,I_B=50mA				0.5
Base-emitter voltage	V_{BE}	V	I_C=500mA,V_{CE}=2V				1
Transition frequency	f_T	MHz	I_C=10mA,V_{CE}=5V,f=30MHz		100		

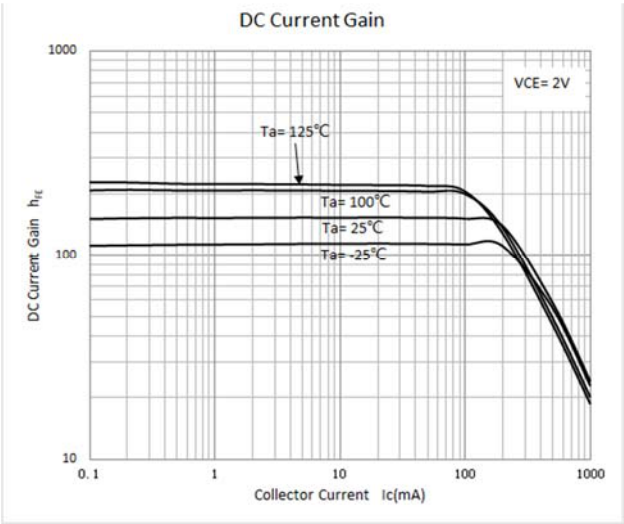
■ Thermal Characteristics

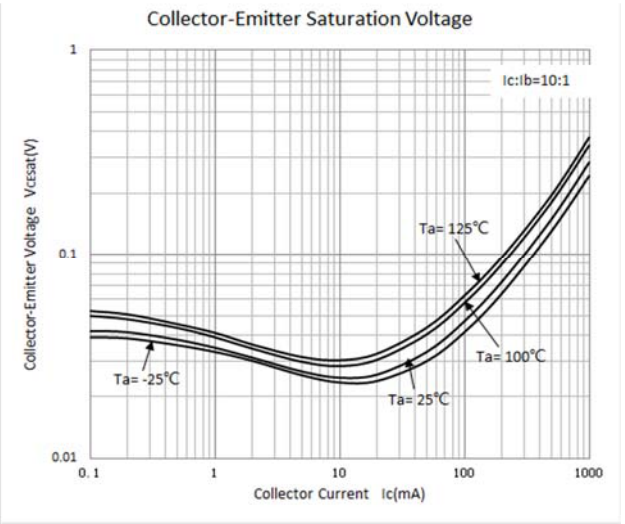
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	83.3
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	66.6

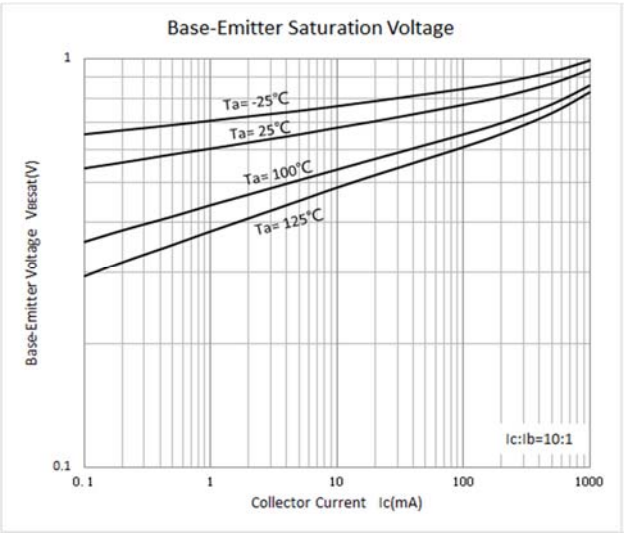
Note1: Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

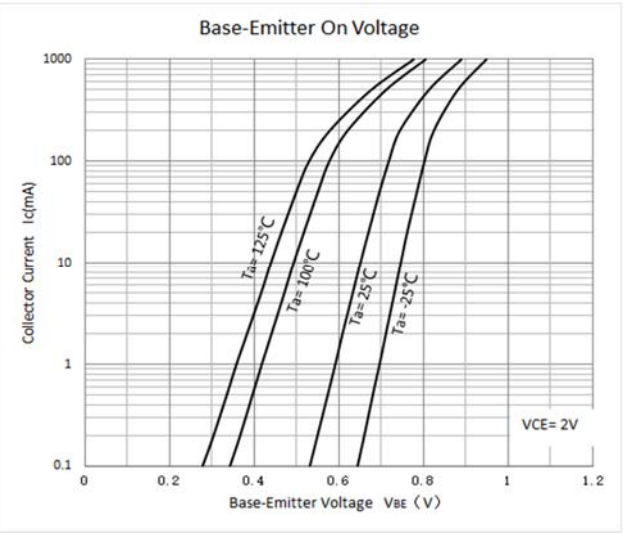
■Characteristics(Typical)

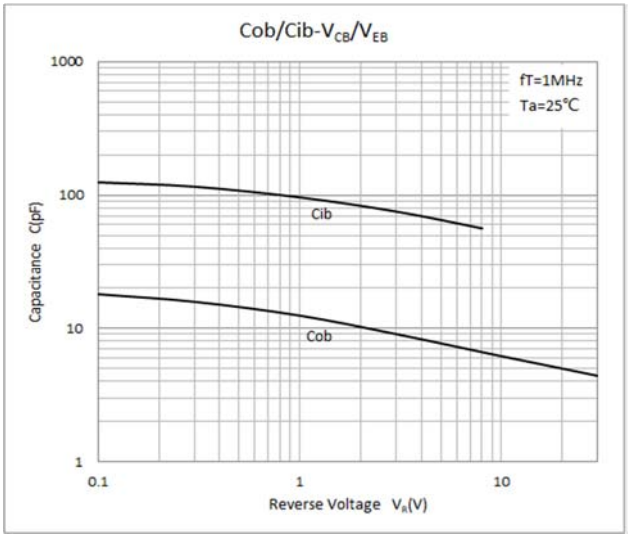


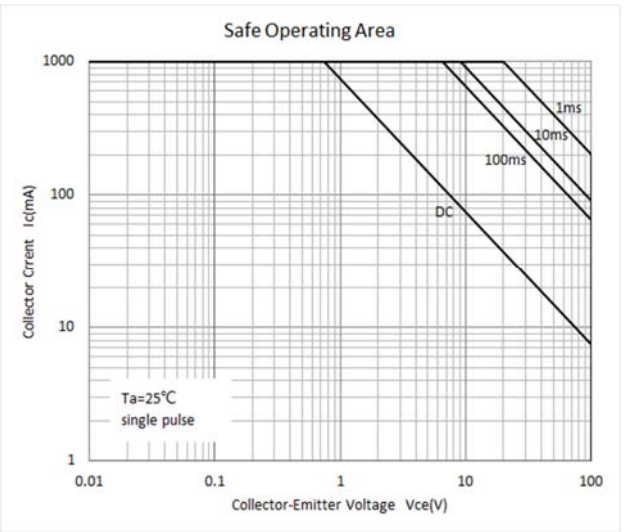

DC Current Gain
VCE= 2V
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
DC Current Gain hFE
Collector Current Ic(mA)


Collector-Emitter Saturation Voltage
Ic:Ib=10:1
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
Collector-Emitter Voltage Vcesat(V)
Collector Current Ic(mA)


Base-Emitter Saturation Voltage
Ta= -25℃
Ta= 25℃
Ta= 100℃
Ta= 125℃
Ic:Ib=10:1
Base-Emitter Voltage Vbesat(V)
Collector Current Ic(mA)


Base-Emitter On Voltage
Ta= 125℃
Ta= 100℃
Ta= 25℃
Ta= -25℃
VCE= 2V
Collector Current Ic(mA)
Base-Emitter Voltage VBE（V）

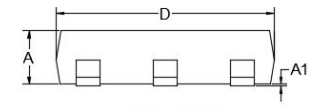

Cob/Cib-VCB/VEB
fT=1MHz
Ta=25℃
Cib
Cob
Capacitance C(pF)
Reverse Voltage VR(V)


Safe Operating Area
1ms
10ms
100ms
DC
Ta=25℃
single pulse
Collector Crrent Ic(mA)
Collector-Emitter Voltage Vce(V)

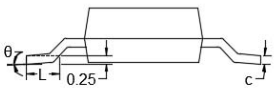
■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BCP56	F2	Approximate 0.11	2500	5000	25000	13” reel

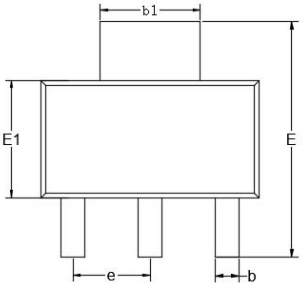
■ Outline Dimensions



SIDE VIEW



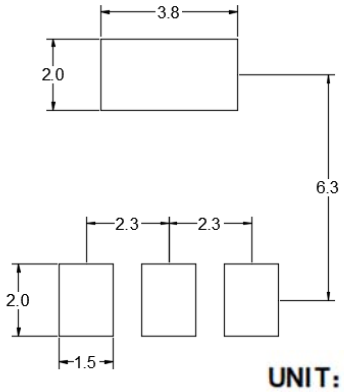
SIDE VIEW



TOP VIEW

DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MN	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

■ Suggested Pad Layout



UNIT: mm

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