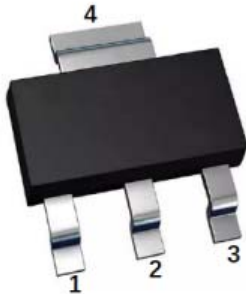
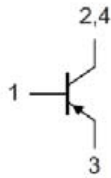


PNP Transistor



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



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic 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 ($T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code			BCP53-10	BCP53-10
			BCP53-16	BCP53-16
Collector-base voltage	V_{CBO}	V	$I_C=-100\mu\text{A}$, $I_E=0$	-100
Collector-emitter voltage	V_{CEO}	V	$I_C=-10\text{mA}$, $I_B=0$	-80
Emitter-base voltage	V_{EBO}	V	$I_E=-100\mu\text{A}$, $I_C=0$	-5
Collector current	I_C	A		-1
Power dissipation	P_D	W		1
Operation junction temperature	T_J	$^\circ\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^\circ\text{C}$		-55 to +150



BCP53

RoHS
COMPLIANT

■ Electrical Characteristics (T_a=25°C 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 =-100μA, I _C =0	-5			
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =-30V	-		-100	
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =-5V	-		-100	
DC current gain	h _{FE1}		V _{CE} =-2V, I _C =-5mA	63			
	h _{FE2}		BCP53-10	V _{CE} =-2V, I _C =-150mA	63		160
			BCP53-16		100		250
	h _{FE3}		V _{CE} =-2V, I _C =-500mA	40			
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 =-50mA, V _{CE} =-10V, f=30MHz	100			
Collector-base output capacitance	C _{ob}	pF	V _{CB} =-10V, I _E =0, f=1MHz		15		

■ Thermal Characteristics

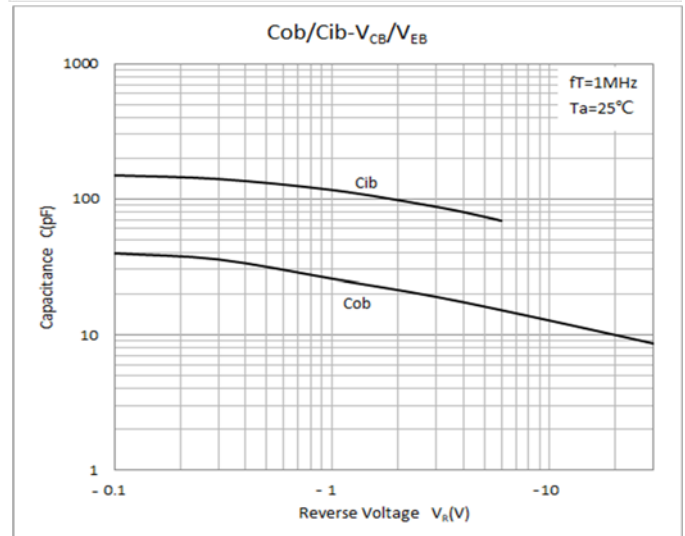
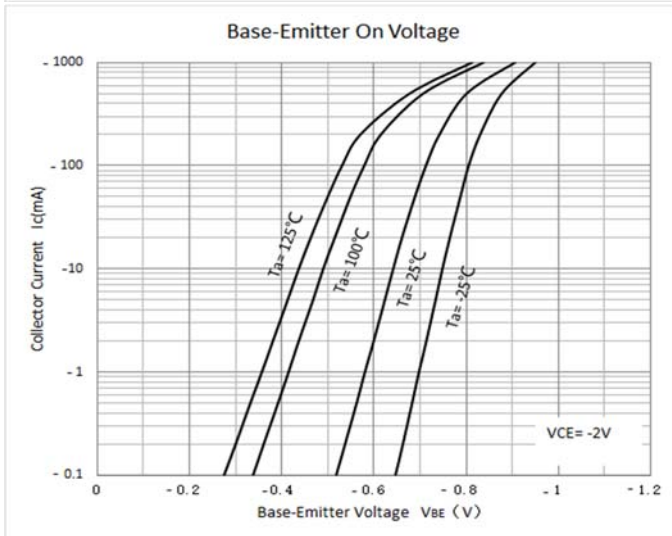
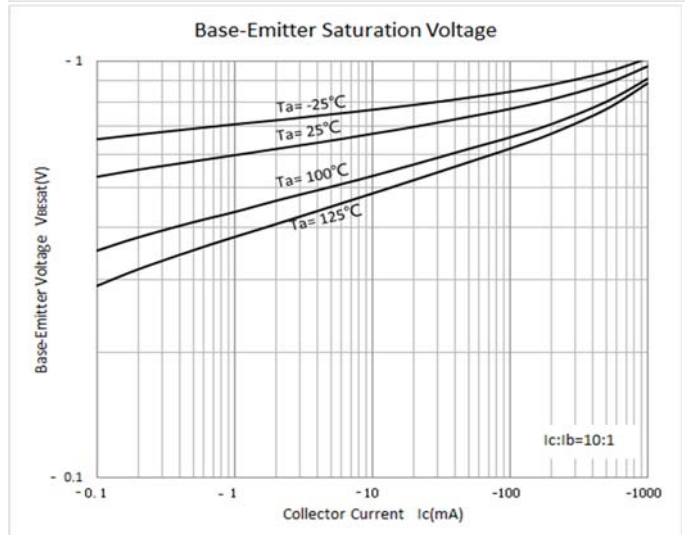
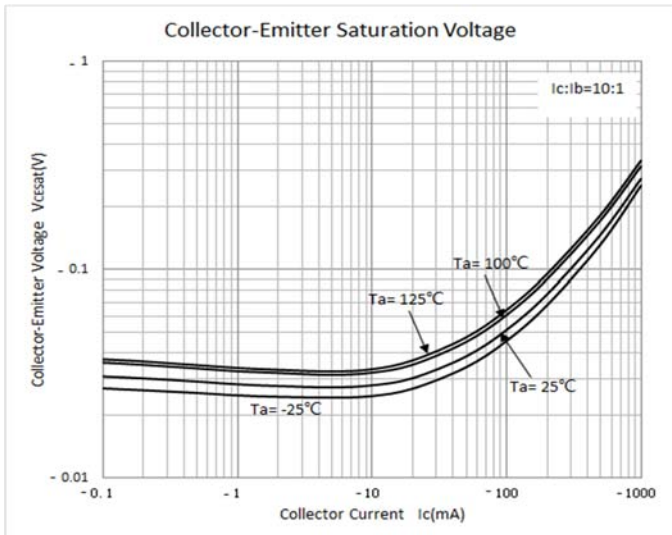
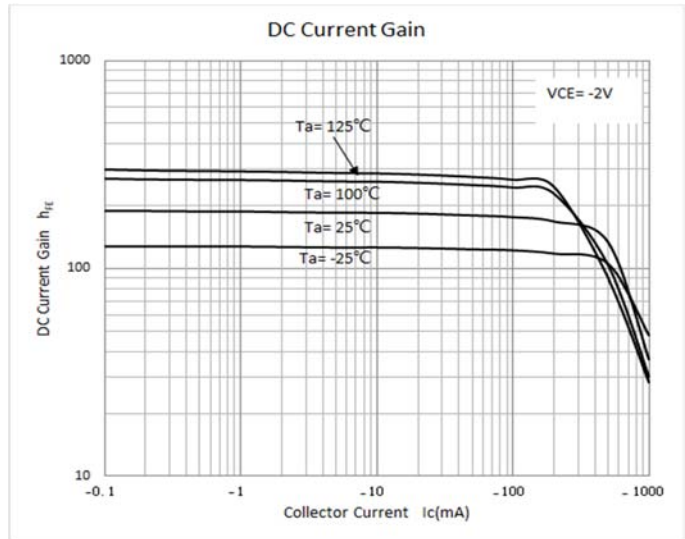
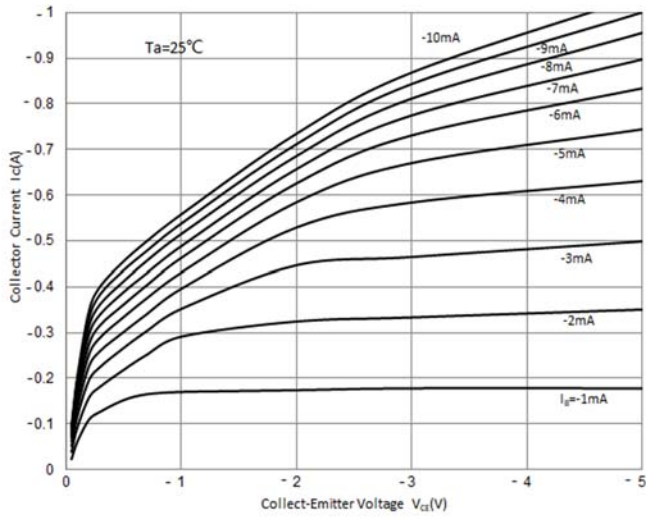
Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	125
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	100

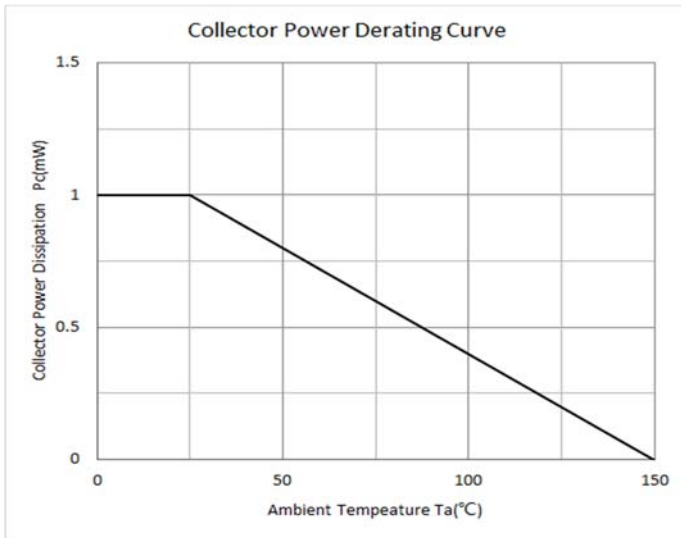
Note:

(1) 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

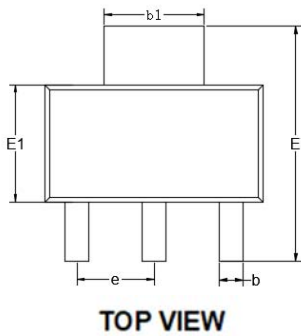
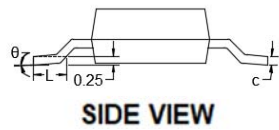
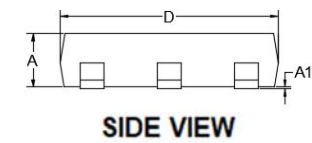




■ Ordering Information

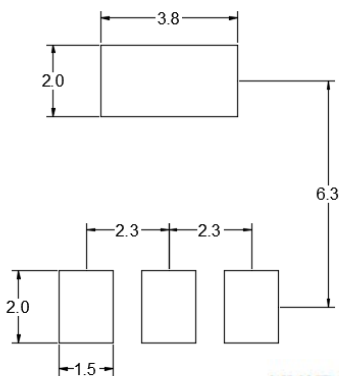
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
BCP53	F2	Approximate 0.11	2500	5000	25000	13" reel

■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	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





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