

SOT-223 Plastic-Encapsulate Transistors

Features

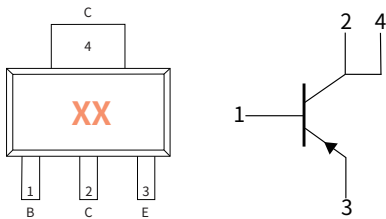
- Complementary to BCP54,BCP55,BCP56
- Power dissipation of 1.5W
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Mechanical Data

- Case: SOT-223
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

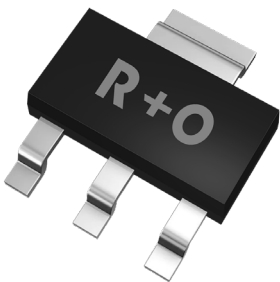
Function Diagram

XX = Device Code
BCP51-10=BCP51-10,BCP51-16=BCP51-16
BCP52-10=BCP52-10,BCP52-16=BCP52-16
BCP53-10=BCP53-10,BCP53-16=BCP53-16



Collector-Base Voltage
VCBO 45/60/100V
Collector Current
1 Ampere

SOT-223



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	CONDLITIONS	VALUE
Collector-Base Voltage	V _{CBO}	V	BCP51	-45
			BCP52	-60
			BCP53	-100
Collector-Emitter Voltage	V _{CEO}		BCP51	-45
			BCP52	-60
			BCP53	-80
Emitter-Base Voltage	V _{EBO}		—	-5.0
Collector Current	I _C	A	—	-1.0
Collector Power Dissipation	P _C	W	—	1.5
Storage temperature	T _{stg}	°C	—	-65 ~+150
Junction temperature	T _j	°C	—	150
Typical Thermal Resistance	R _{θJ-A}	°C /W	—	94

Ordering Information

PACKAGE	PACKAGE CODE	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-223	R1	2500	10000	40000	7"

BCP51 THRU BCP53

PNP TRANSISTORS

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition		Min	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=-100\mu A, I_E=0$	BCP51	-45	—
				BCP52	-60	—
				BCP53	-100	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=-10mA, I_B=0$	BCP51	-45	—
				BCP52	-60	—
				BCP53	-80	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=-100\mu A, I_C=0$		-5.0	—
Collector-Base cut-off current	I_{CBO}	μA	$V_{CB}=-45V, I_E=0$	BCP51	—	-0.1
			$V_{CB}=-60V, I_E=0$	BCP52	—	-0.1
			$V_{CB}=-100V, I_E=0$	BCP53	—	-0.1
Emitter-Base cut-off current	I_{EBO}		$V_{EB}=-5.0V, I_C=0$		—	-0.1
DC Current Gain	$h_{FE(1)}$	—	$I_C=-5.0mA \quad V_{CE}=2.0V$		25	—
	$h_{FE(2)}$		$I_C=-150mA \quad V_{CE}=2.0V$		63	250
	$h_{FE(3)}$		$I_C=-500mA \quad V_{CE}=2.0V$		25	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=-500mA \quad I_B=-50mA$		—	-0.5
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		$I_C=-500mA \quad I_B=-50mA$		—	-1.2
Base-Emitter Voltage	V_{BE}	V	$I_C=500mA \quad V_{CE}=2.0V$		—	1.0

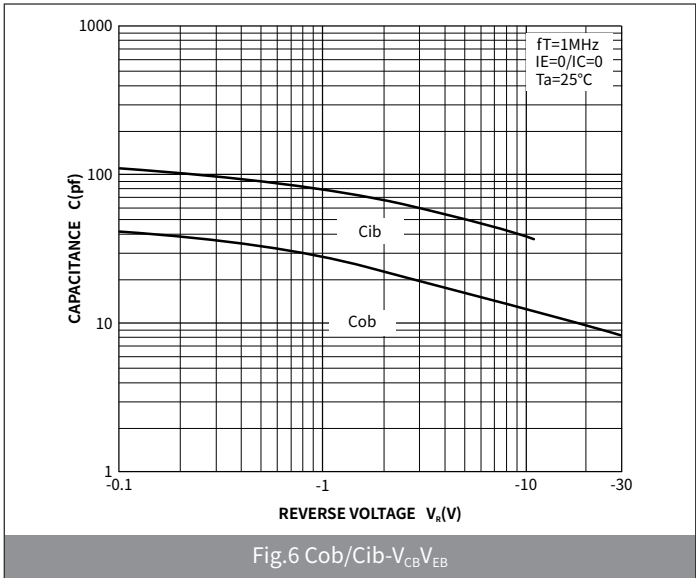
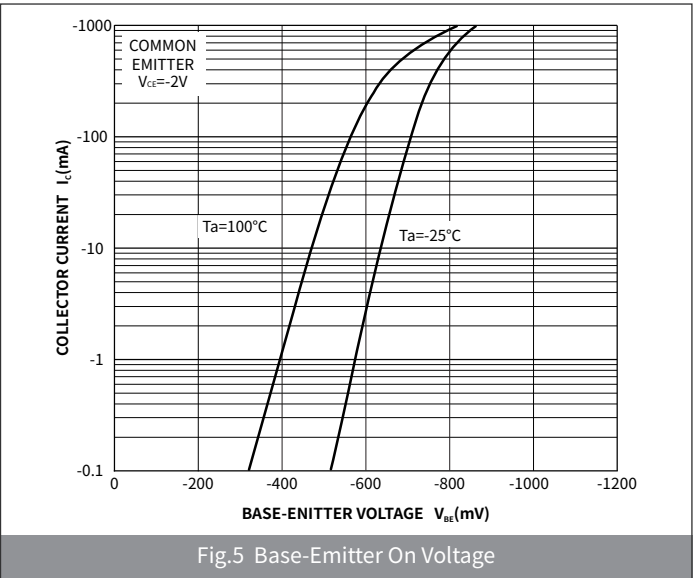
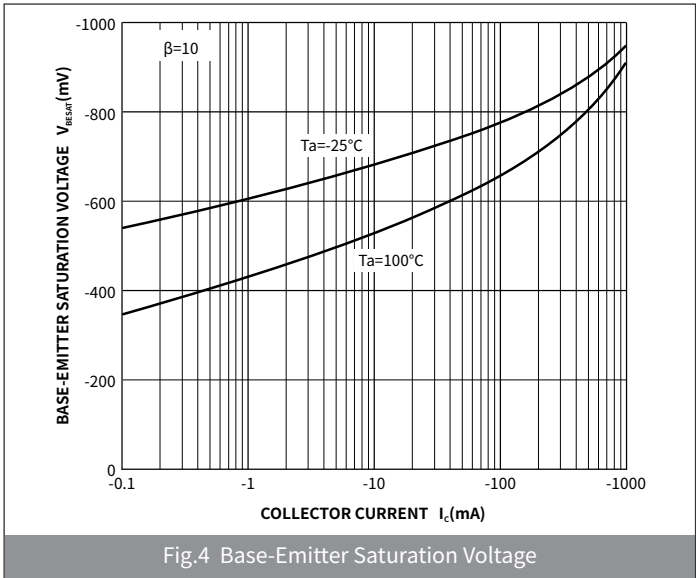
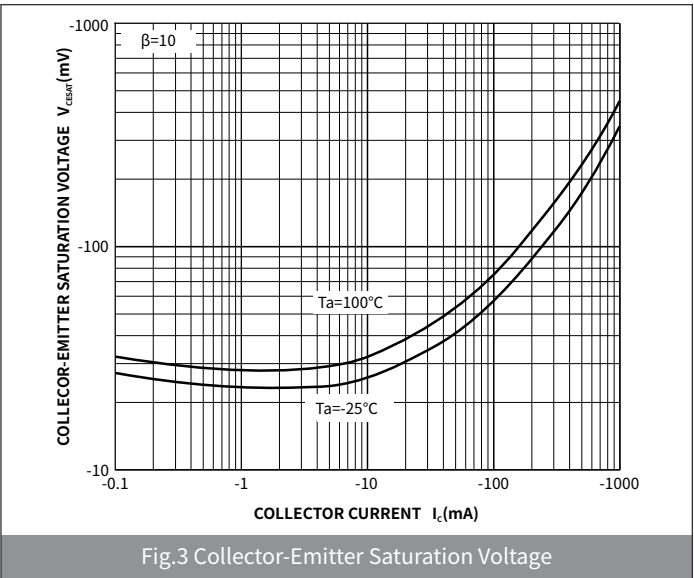
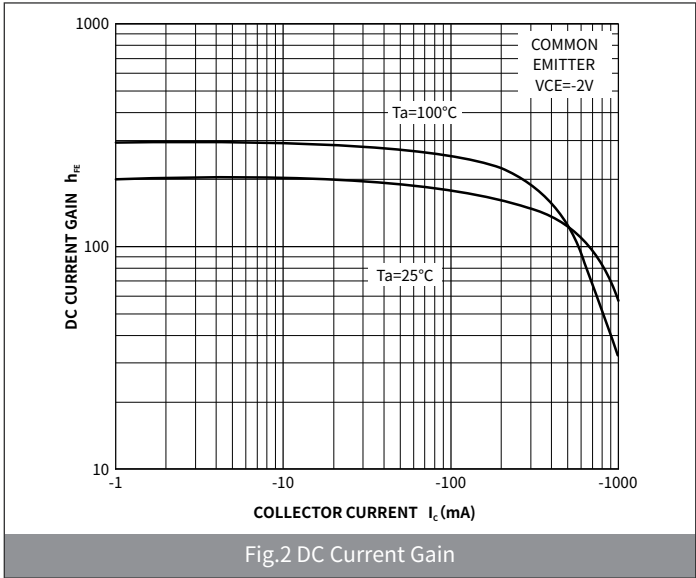
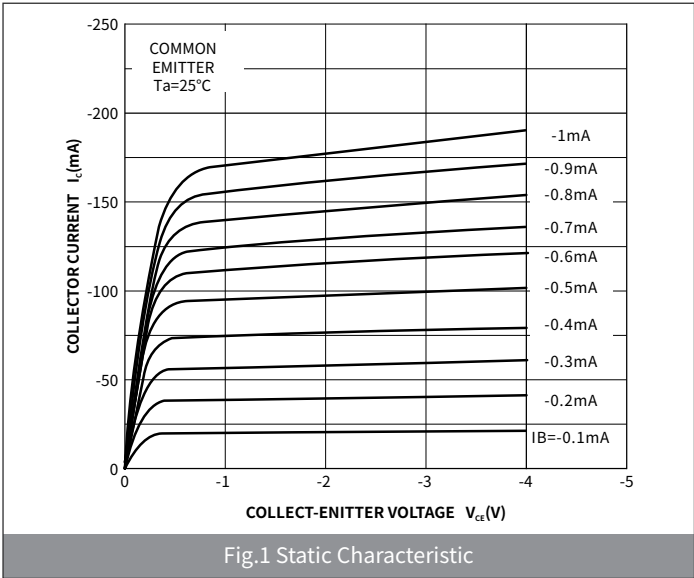
● Classification Of h_{FE}

RANK	BCP51-10/BCP52-10/BCP53-10	BCP51-16/BCP52-16/BCP53-16
Range	63-160	100-250

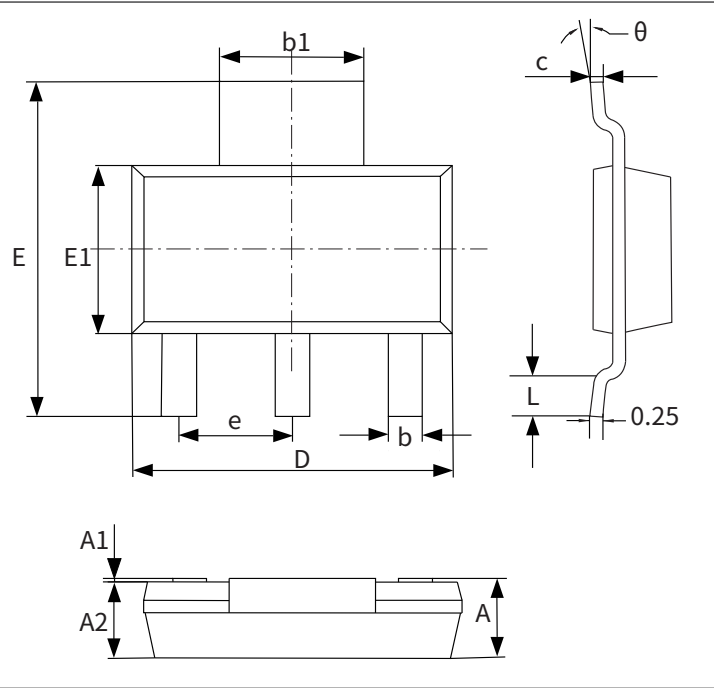
● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=-50mA, V_{CE}=-10V$	MHz	100	—

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

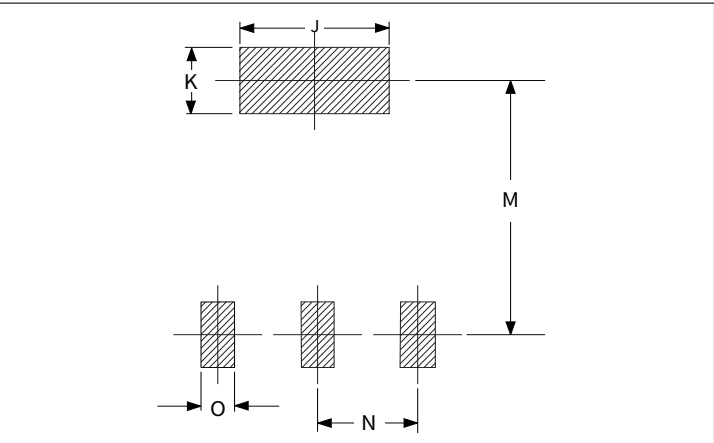


Package Outline Dimensions (SOT-223)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	-	1.8	-	0.071
A1	0.020	0.100	0.001	0.004
A2	1.50	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091TYP	
L	0.750	-	0.030	-
θ	0°	10°	0°	10°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	3.20	3.60	0.126	0.142
K	1.40	1.80	0.055	0.071
M	5.90	6.30	0.23	0.25
N	2.15	2.45	0.085	0.096
O	0.60	0.85	0.024	0.033