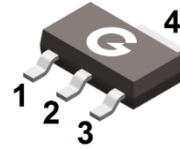
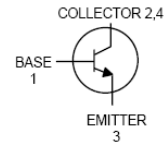


Features

- High collector current
- Low collector-emitter saturation voltage
- RoHS compliant with Halogen-free

HF



SOT-223

Mechanical Data

- Case: SOT-223
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BCP54	SOT-223	4000 pcs / Tape & Reel	BD

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	45	V
Collector-Emitter Breakdown Voltage	V _{CEO}	45	V
Emitter-Base Breakdown Voltage	V _{EBO}	5	V
Collector Current (Continuous)	I _C	1	A
Collector Current (Peak)	I _{CM}	1.5	A
Base Current (Continuous)	I _B	0.1	A
Base Current (Peak)	I _{BM}	0.2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	1.5	W
Thermal Resistance Junction-to-Air	R _{θJA}	83.3	°C/W
Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	45	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	45	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0, T_A = 25^\circ\text{C}$	-	-	100	nA
		$V_{CB} = 30\text{V}, I_E = 0, T_A = 150^\circ\text{C}$	-	-	20	μA
DC Current Gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 5\text{mA}$	25	-	-	-
		$V_{CE} = 2\text{V}, I_C = 150\text{mA}$ (BCP54)	40	-	250	-
		$V_{CE} = 2\text{V}, I_C = 150\text{mA}$ (BCP54-16)	100	-	250	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	-	-	0.5	V
Base-emitter Voltage	$V_{BE(on)}$	$I_C = 0.5\text{A}, V_{CE} = 2\text{V}$	-	-	1	V
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$ $f = 20\text{MHz}$	100	-	-	MHz

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

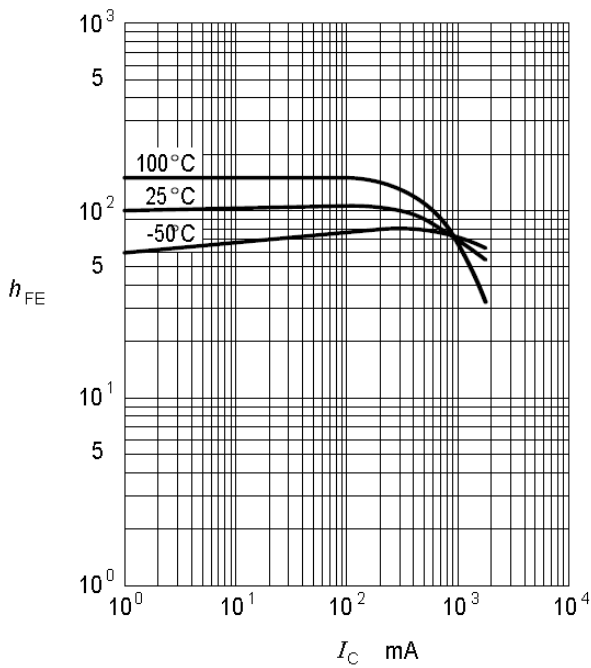


Fig. 1 h_{FE} vs. I_C ($V_{CE} = 2\text{V}$)

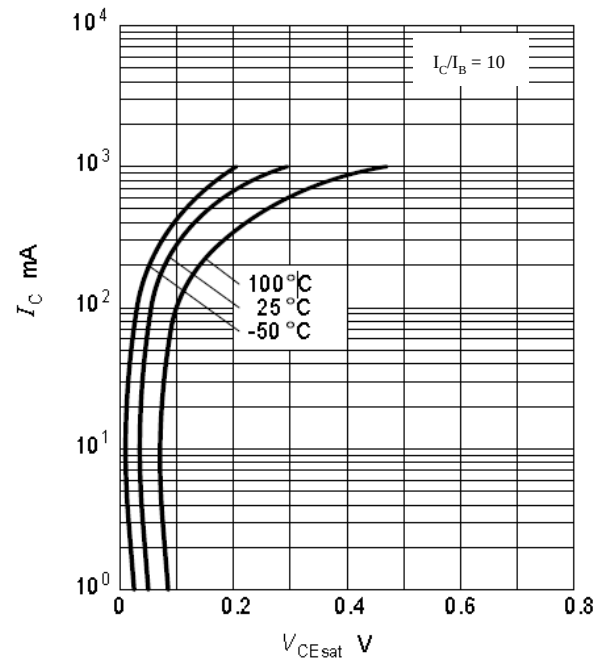
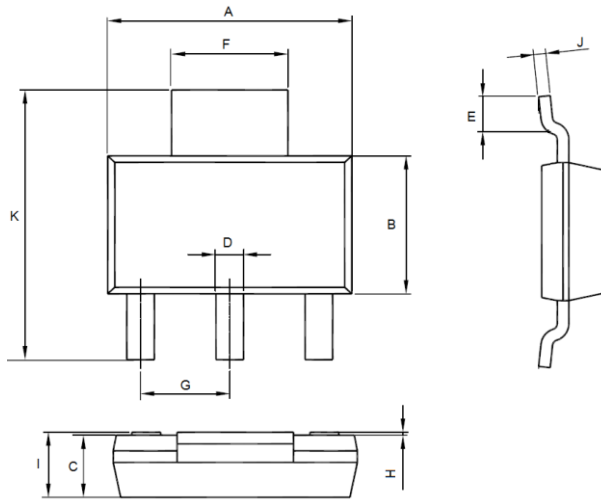


Fig. 2 $V_{CE(sat)}$ vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-223		
Dimension	Min.	Max.
A	6.10	6.50
B	3.30	3.70
C	1.50	1.70
D	0.66	0.82
E	0.90	1.15
F	2.90	3.10
G	2.20	2.40
H	0.02	0.10
I	1.52	1.80
J	0.20	0.40
K	6.70	7.30

Mounting Pad Layout (Unit: mm)

SOT-223

