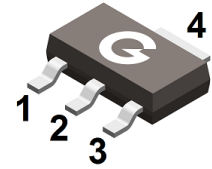
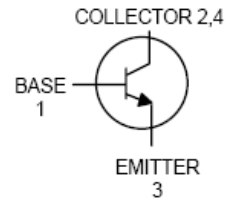


Features

- High collector current
- Low collector-emitter saturation voltage
- High current gain
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 standards for high reliability

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
TBCP68	SOT-223	4000 pcs / Tape & Reel	BCP68
TBCP68-10	SOT-223	4000 pcs / Tape & Reel	BCP68-10
TBCP68-16	SOT-223	4000 pcs / Tape & Reel	BCP68-16
TBCP68-25	SOT-223	4000 pcs / Tape & Reel	BCP68-25

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	1	A
Collector Current (Peak)	I_{CM}	2	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 ($T_A = 25^\circ\text{C}$) ^{*1}	P_D	1.5	W
Operating junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

Note 1: Device mounted on a glass epoxy printed circuit board 1.575 in. x 1.575 in. x 0.059 in.; mounting pad for the collector lead min. 0.93 sq. in.

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	25	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	20	-	-	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}	$V_{CB} = 25\text{V}, I_E = 0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 5\text{mA}$	50	-	-	-
		$V_{CE} = 1\text{V}, I_C = 1\text{A}$	60	-	-	-
		$V_{CE} = 1\text{V}, I_C = 500\text{mA}$				
		TBCP68	85	-	375	-
		TBCP68-10	85	-	160	-
		TBCP68-16	100	-	250	-
		TBCP68-25	160	-	375	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 100\text{mA}$	-	-	0.5	V
Base-Emitter Voltage	$V_{BE(on)}$	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	-	0.6	-	V
		$I_C = 1\text{A}, V_{CE} = 1\text{V}$	-	-	1	V
Transition Frequency	f_T	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$ $f = 100\text{MHz}$	-	100	-	MHz

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

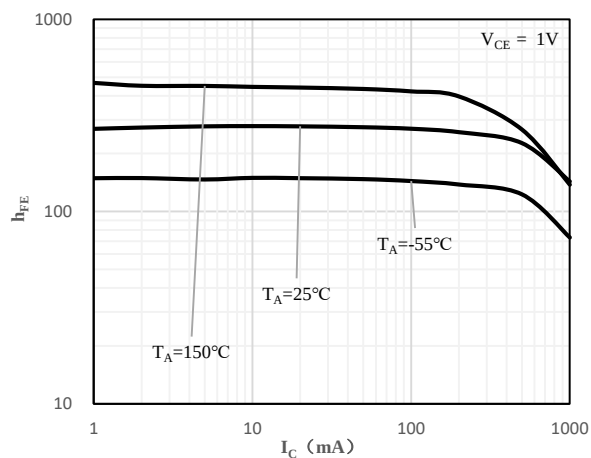


Fig 1 h_{FE} vs. I_C

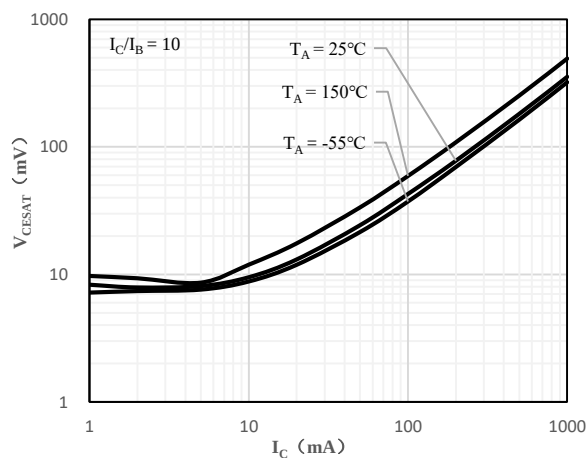


Fig 2 $V_{CE(sat)}$ vs. I_C

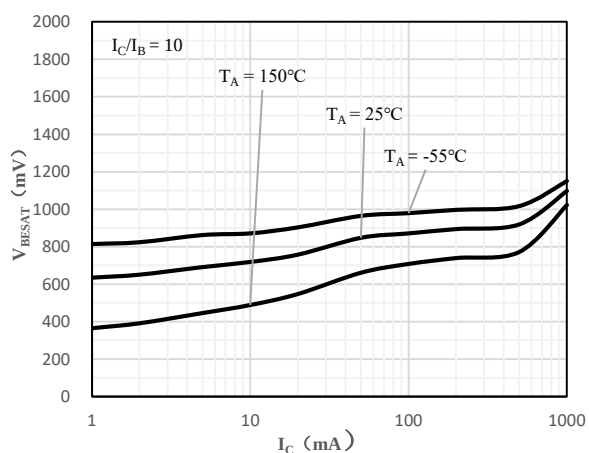


Fig 3 $V_{BE(sat)}$ vs. I_C

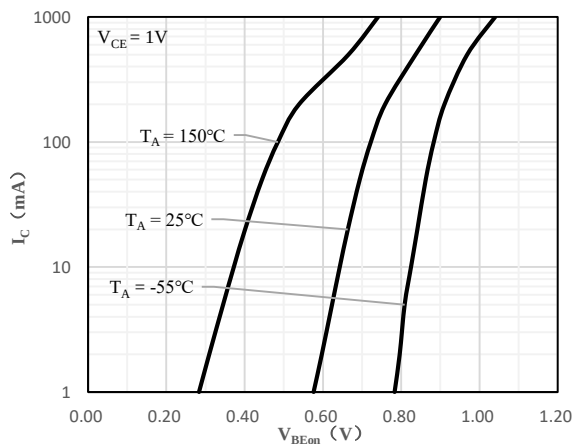


Fig 4 $V_{BE(on)}$ vs. I_C

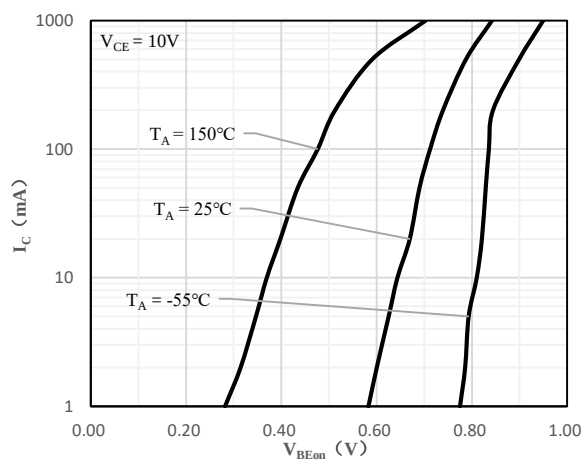
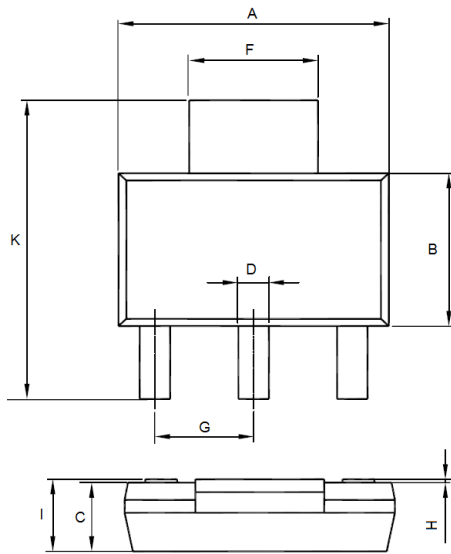


Fig 5 $V_{BE(on)}$ vs. I_C

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)

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