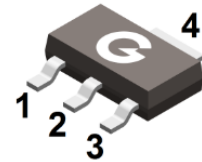
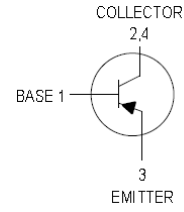


Features

- High collector current
- Low collector-emitter saturation voltage
- High current gain
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

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
TBCP69	SOT-223	4000 pcs / Tape & Reel	BCP69
TBCP69-10	SOT-223	4000 pcs / Tape & Reel	BCP69-10
TBCP69-16	SOT-223	4000 pcs / Tape & Reel	BCP69-16
TBCP69-25	SOT-223	4000 pcs / Tape & Reel	BCP69-25

Maximum Ratings (@ T_A = 25°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°C)	P _D	1.5	W
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	80	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	40	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	25	°C/W
Operating junction Temperature	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	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-25	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -30\text{mA}, I_B = 0$	-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	-	-	-
		$V_{CE} = -1\text{V}, I_C = -500\text{mA}$				
		TBCP69	85	-	375	-
		TBCP69-10	85	-	160	-
		TBCP69-16	100	-	250	-
		TBCP69-25	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)

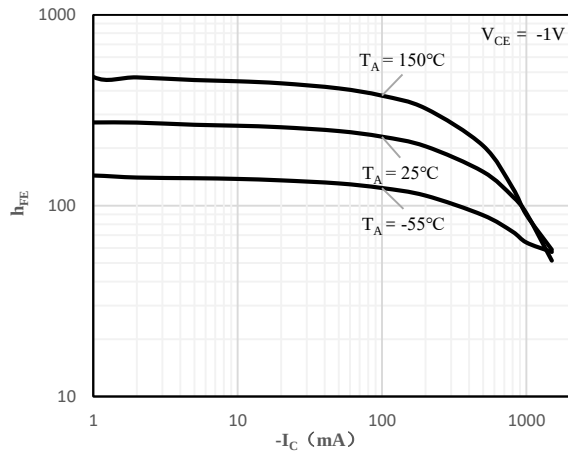


Fig 1 h_{FE} vs. I_C

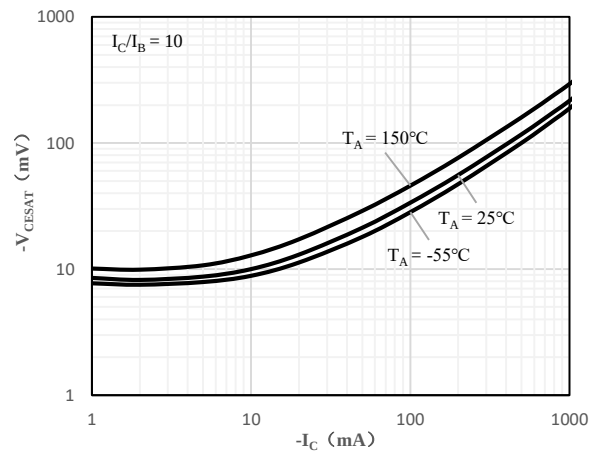


Fig 2 $V_{CE(sat)}$ vs. I_C

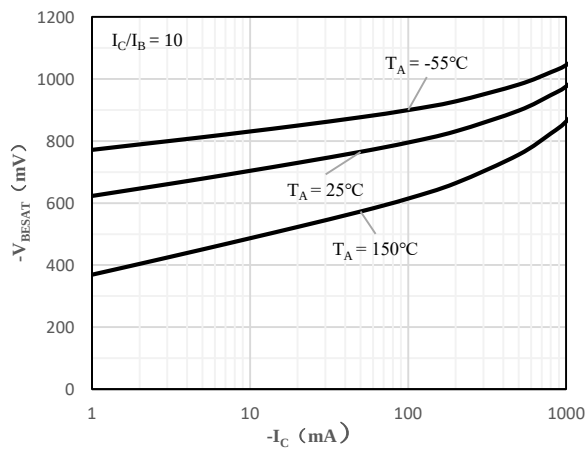


Fig 3 $V_{BE(sat)}$ vs. I_C

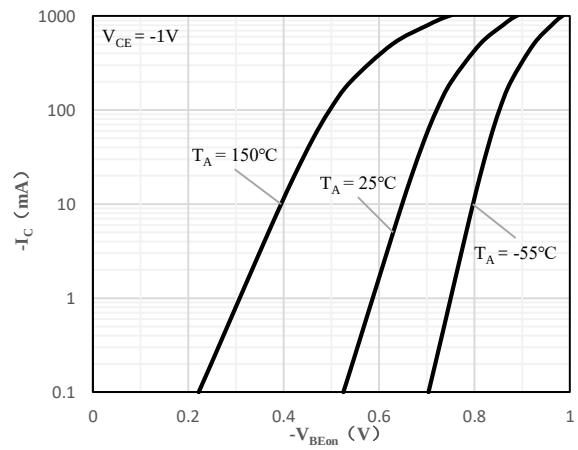


Fig 4 $V_{BE(on)}$ vs. I_C

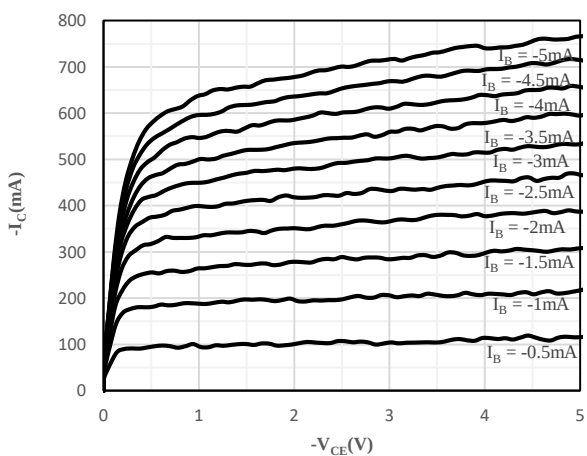


Fig 5 I_C vs. V_{CE}

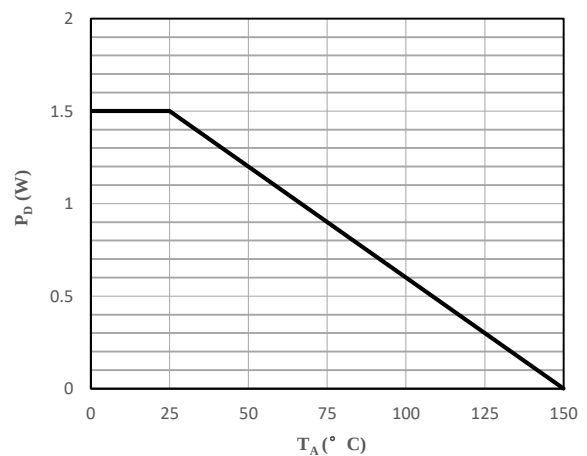
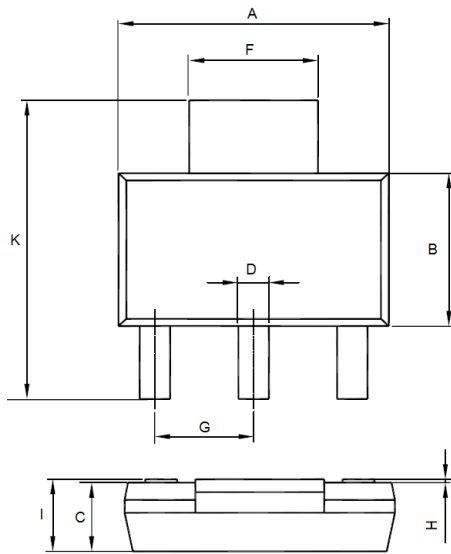


Fig 6 Steady State Power Derating

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

