

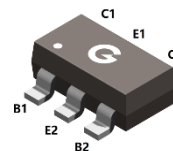
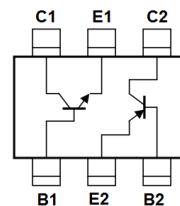
Features

- Low collector-emitter saturation voltage
- Two internal isolated NPN/PNP transistors in one package
- High-speed switching
- RoHS compliant with Halogen-free

HF

Mechanical Data

- Case: SOT-23-6L
- Molding compo und: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-23-6L

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL6902	SOT-23-6L	3000 pcs / Tape & Reel	6902

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

Parameter	Symbol	NPN	PNP	Unit
Collector-Base Voltage	V _{CBO}	60	-60	V
Collector-Emitter Voltage	V _{CEO}	30	-30	V
Emitter-Base Voltage	V _{EBO}	7	-7	V
Continuous Collector Current	I _C	2	-2	A
Peak Collector Current	I _{CM}	4	-4	A
Base Current	I _B	0.5	-0.5	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Collector Power Dissipation(Single-device operation) *1	P _C	0.7	W
Collector Power Dissipation(Single-device value at dual operation) *1	P _C	0.6	
Thermal Resistance Junction-to-Air *2	R _{θJA}	150	°C/W
Thermal Resistance Junction-to-Case *2	R _{θJC}	60	°C/W
Thermal Resistance Junction-to-Lead *2	R _{θJL}	50	°C/W
Operating Junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Notes:

- 1、 Mounted on an FR4 board (glass epoxy, 1.6 mm thick, Cu area: 645 mm²)
- 2、 The data tested by surface mounted on a 25.4mm * 25.4mm * 1mm FR4-epoxy P.C.B

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	30	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	7	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 60\text{V}, I_E = 0$	-	-	0.1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 50\text{V}, I_B = 0$	-	-	5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 7\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 0.2\text{A}$	200	-	500	-
		$V_{CE} = 2\text{V}, I_C = 0.6\text{A}$	125	-	-	-
		$V_{CE} = 2\text{V}, I_C = 2\text{A}$	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 600\text{mA}, I_B = 20\text{mA}$	-	-	0.14	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 600\text{mA}, I_B = 20\text{mA}$	-	-	1.1	V
Base-emitter Voltage	$V_{BE(on)}$	$I_C = 1\text{A}, V_{CE} = 2\text{V}$	-	-	1.2	V
Transition Frequency	f_T	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$ $f = 100\text{MHz}$	100	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = I_C = 0$ $f = 1\text{MHz}$	-	-	25	pF

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-30	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-7	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0$	-	-	-0.1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = -50\text{V}, I_B = 0$	-	-	-5	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -7\text{V}, I_C = 0$	-	-	-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -2\text{V}, I_C = -200\text{mA}$	200	-	500	-
		$V_{CE} = -2\text{V}, I_C = -600\text{mA}$	125	-	-	-
		$V_{CE} = -2\text{V}, I_C = -1\text{A}$	60	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -600\text{mA}, I_B = -20\text{mA}$	-	-	-0.2	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -600\text{mA}, I_B = -20\text{mA}$	-	-	-1.1	V
Base-emitter Voltage	$V_{BE(on)}$	$I_C = -1\text{A}, V_{CE} = -2\text{V}$	-	-	-1.2	V
Transition Frequency	f_T	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$ $f = 100\text{MHz}$	100	-	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = I_C = 0$ $f = 1\text{MHz}$	-	-	35	pF

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

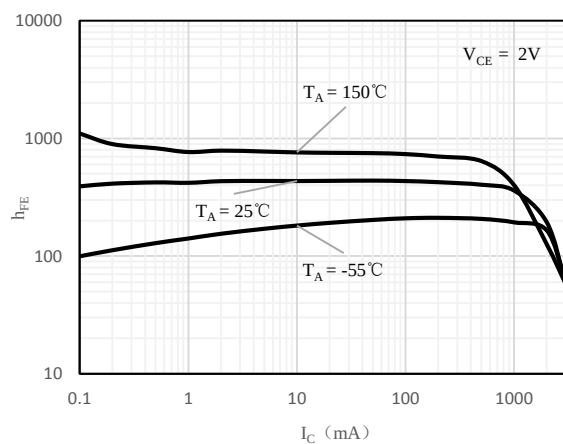


Fig 1 h_{FE} VS. I_C

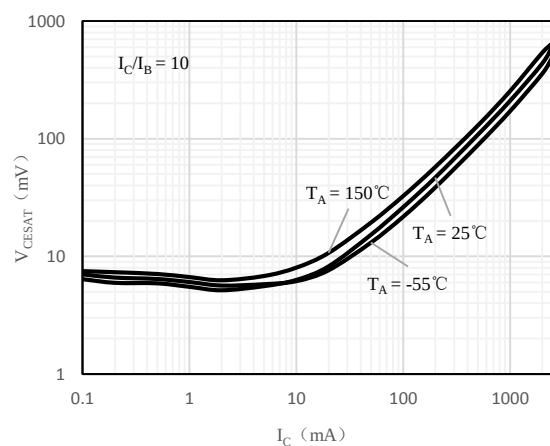


Fig 2 $V_{CE(sat)}$ VS. I_C

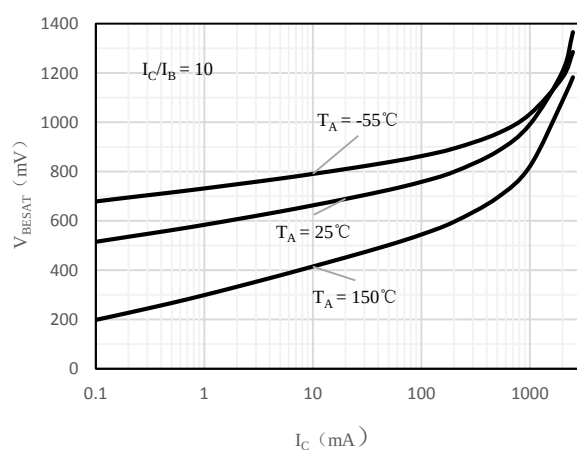


Fig 3 $V_{BE(sat)}$ VS. I_C

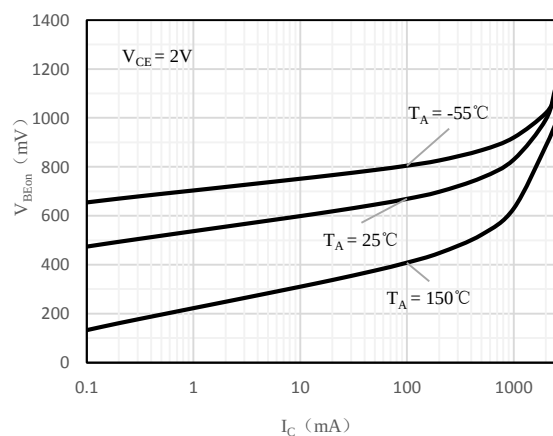
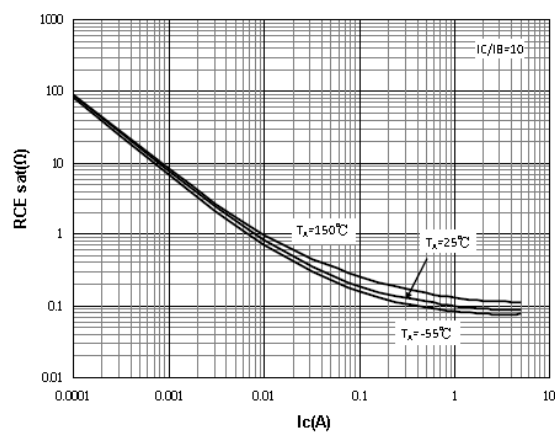
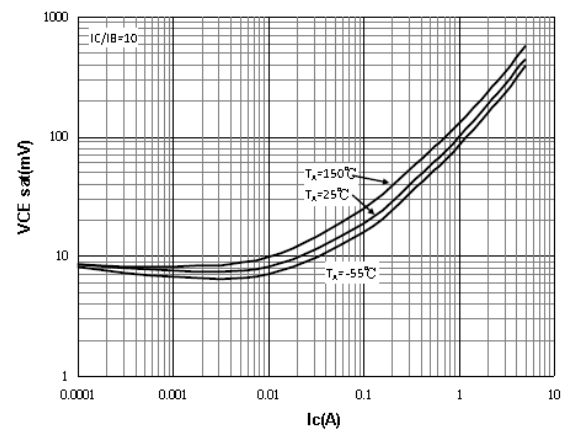
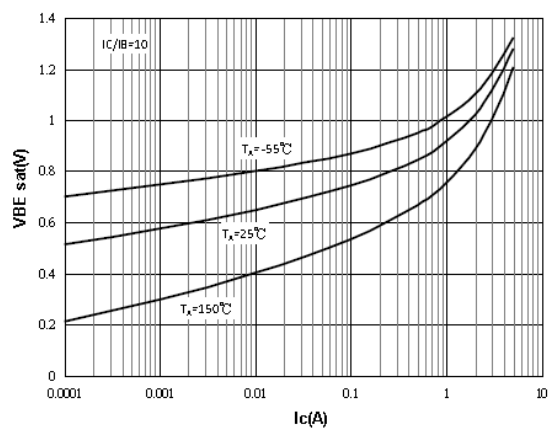
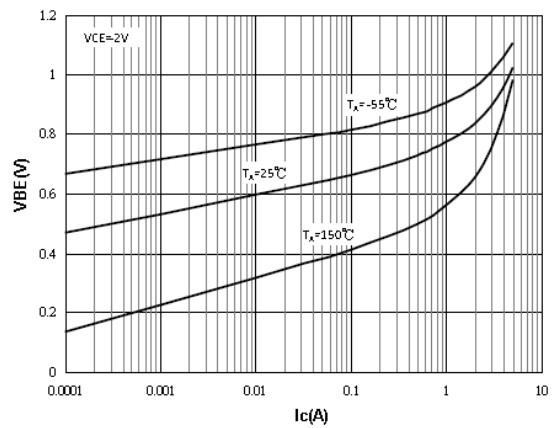
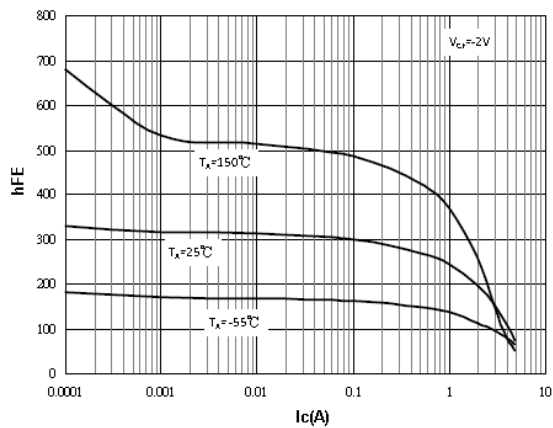
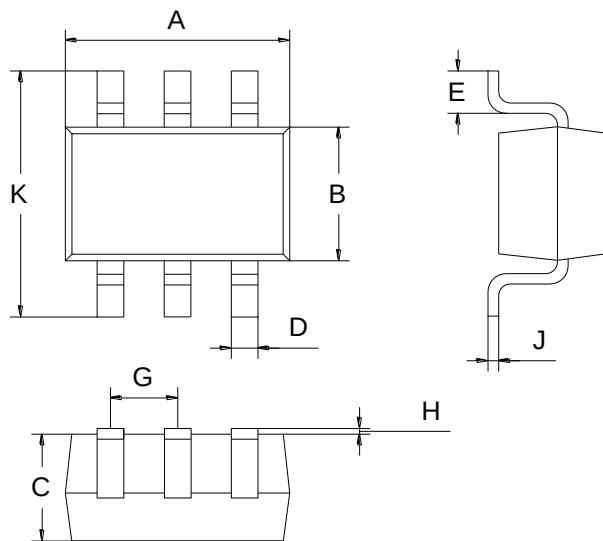


Fig 4 $V_{BE(on)}$ VS. I_C

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



Package Outline Dimensions (Unit: mm)



SOT-23-6L		
Dimension	Min.	Max.
A	2.80	3.00
B	1.50	1.70
C	1.00	1.20
D	0.35	0.45
E	0.35	0.55
G	0.90	1.00
H	0.02	0.10
J	0.10	0.20
K	2.60	3.00

Mounting Pad Layout (Unit: mm)

SOT-23-6L

