NPN Silicon Epitaxial Planar Transistor

BL1545

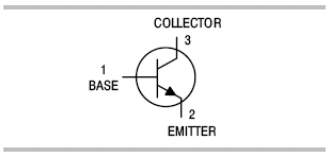
Features

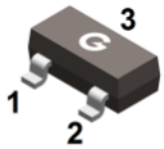
HF

- Epitaxial planar die construction
- Low current
- High voltage

Mechanic al Data

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





SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BL1545	SOT-23	3000 pcs / Tape & Reel	1545

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	500	V
Collector-Emitter Breakdown Voltage	V_{CEO}	420	V
Emitter-Base Breakdown Voltage	V_{EBO}	8	V
Collector Current (Continuous)	I_C	0.5	A
Collector Current (Peak, t_P< 5 ms)	I_{CM}	1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C)	P_D	0.35	W
Thermal Resistance (Junction-to-Ambient) *1	$R_{\theta JA}$	250	°C/W
Junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: Device mounted on PCB area of 1 cm²

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100μA, I_E = 0	500	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	420	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	8	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 500V, I_E = 0	-	-	10	μA
DC Current Gain	h_{FE}	V_{CE} = 10V, I_C = 1mA	100	-	-	-
		V_{CE} = 10V, I_C = 50mA	100	-	300	-
		V_{CE} = 10V, I_C = 100mA	10	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 20mA, I_B = 2mA	-	-	0.2	V
		I_C = 50mA, I_B = 6mA	-	-	0.3	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	0.9	V
Base−Emitter Turn−on Voltage	$V_{BE(on)}$	I_C = 50mA, V_{CE} = 1V	-	-	1.0	V

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

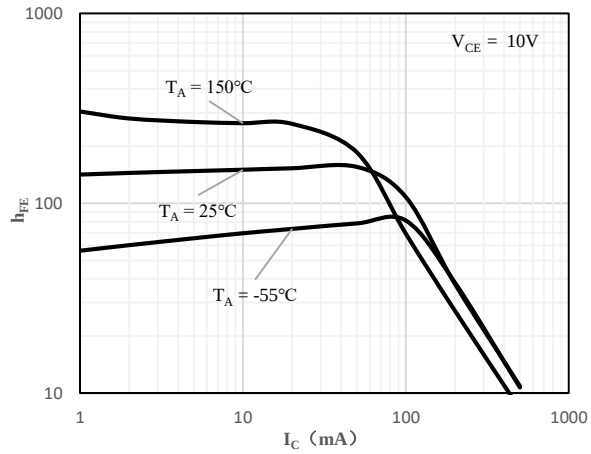


Fig 1 h_{FE} vs. I_C

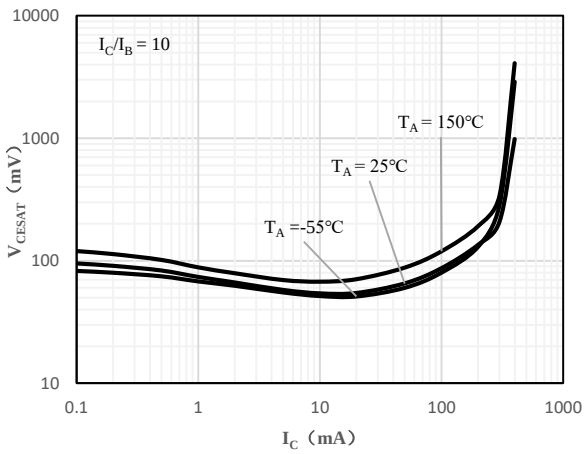


Fig 2 $V_{CE(sat)}$ vs. I_C

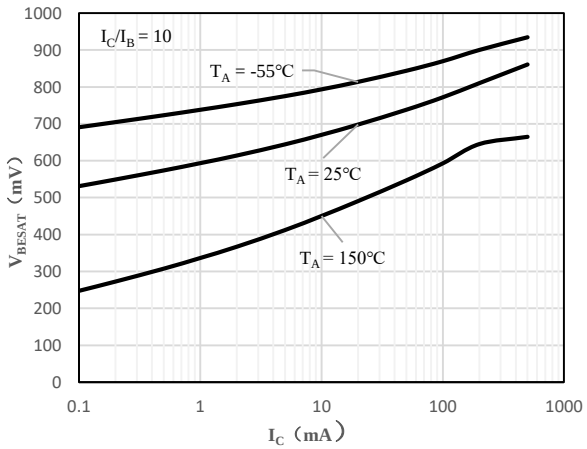


Fig 3 $V_{BE(sat)}$ vs. I_C

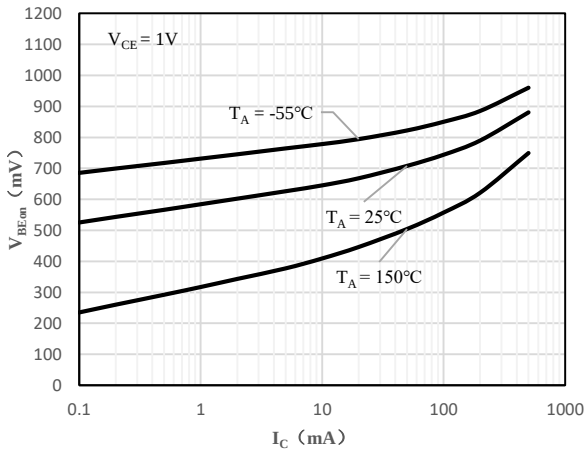


Fig 4 $V_{BE(ON)}$ vs. I_C

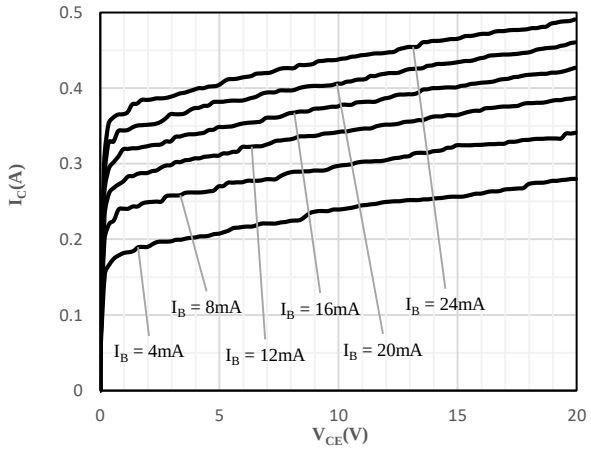


Fig 5 I_C vs. V_{CE}

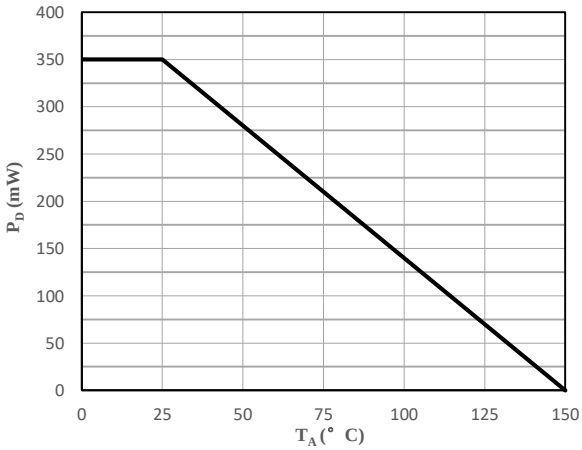


Fig 6 P_D vs. T_A

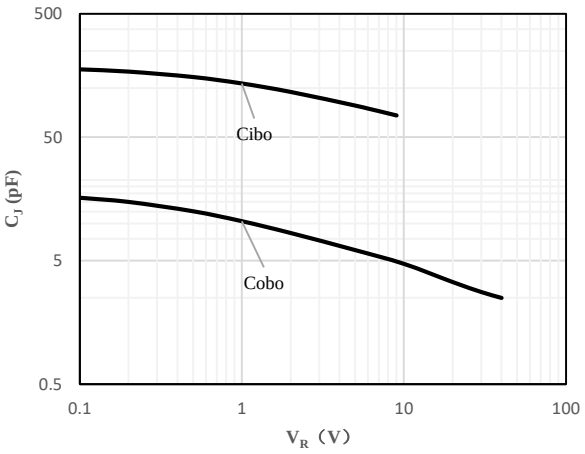
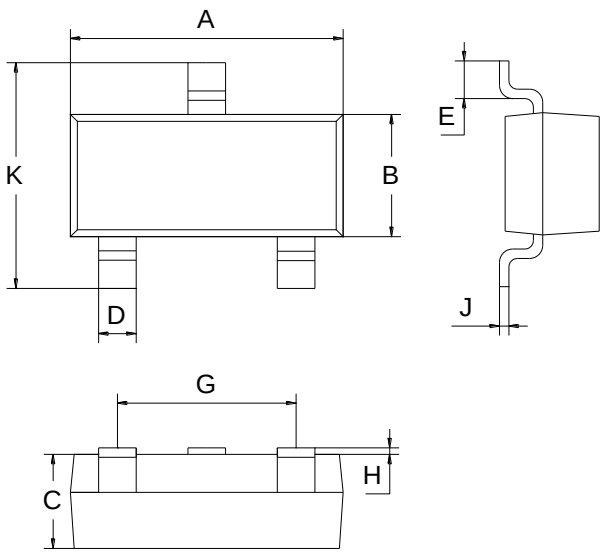


Fig 7 C_J vs. V_R

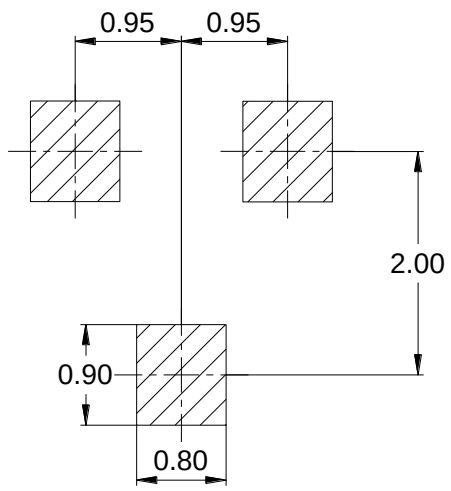
Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Mounting Pad Layout (Unit: mm)

SOT-23



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