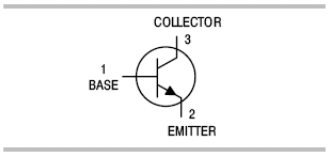
NPN Small Signal Surface Mount Transistor

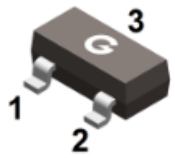
2SC3052

Features

- Low collector to emitter saturation voltage
- Excellent linearity of DC forward current gain
- Ultra-small surface mount package
- RoHS compliant with Halogen-free

HF





SOT-23

Mechanical Data

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

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SC3052-E	SOT-23	3000 pcs / Tape & Reel	LE
2SC3052-F	SOT-23	3000 pcs / Tape & Reel	LF
2SC3052-G	SOT-23	3000 pcs / Tape & Reel	LG

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (Continuous)	I_C	200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	125	mW
Operating junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

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	50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 0.1mA, I_B = 0	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 50V, I_E = 0	-	-	100	nA
Emitter-base Cut-off Current	I_{EBO}	V_{EB} = 6V, I_C = 0	-	-	100	nA
DC Current Gain	h_{FE}	V_{CE} = 6V, I_C = 1mA	150	-	800	-
		V_{CE} = 6V, I_C = 0.1mA	90	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 10mA	-	-	0.3	V
Transition Frequency	f_T	V_{CE} = 6V, I_C= 10mA	-	200	-	MHZ
Collector Output Capacitance	Cob	V_{CB} = 6V, I_E = 0 f = 1MHz	-	2.5	-	pF
Noise Figure	N_F	V_{CE} = 6V, I_E = 0.1mA f = 1kHz, R_G = 2kΩ	-	-	20	dB

Classification of h_{FE}

Rank	E	F	G
Range	150-300	250-500	400-800
Marking	LE	LF	LG

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

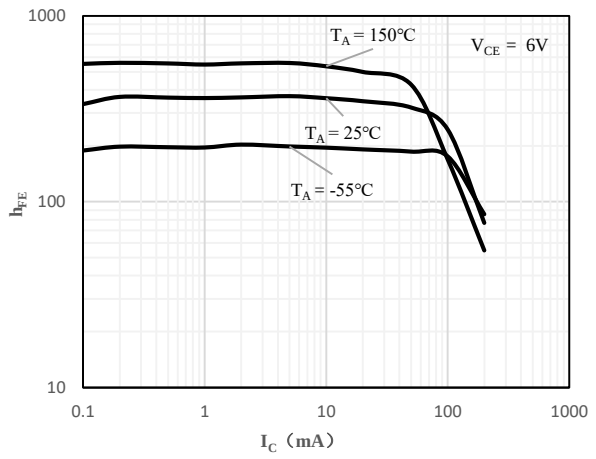


Fig 1 h_{FE} vs. I_C

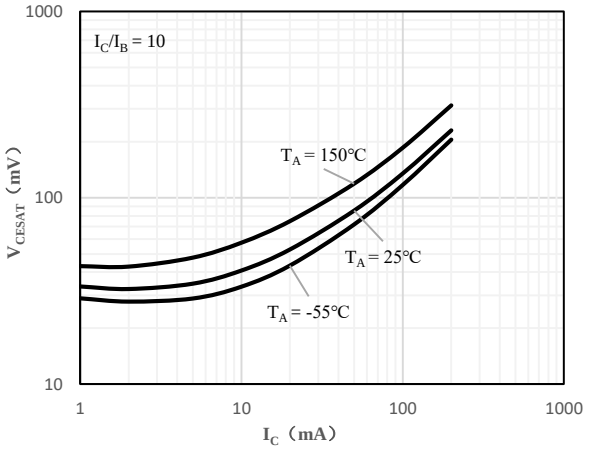


Fig 2 $V_{CE(sat)}$ vs. I_C

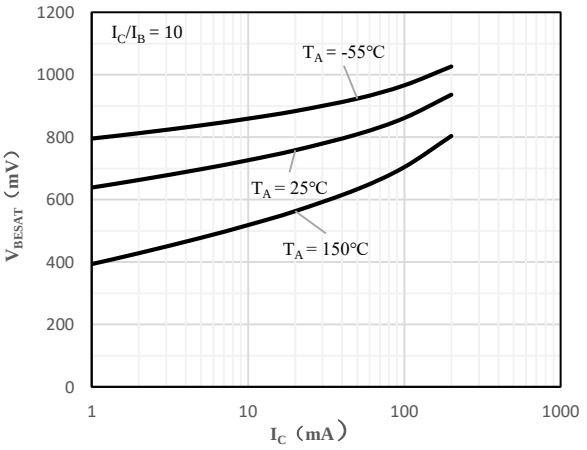


Fig 3 $V_{BE(sat)}$ vs. I_C

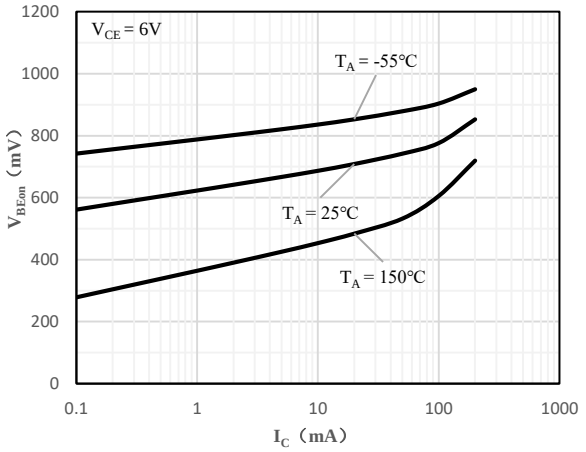


Fig 4 $V_{BE(ON)}$ vs. I_C

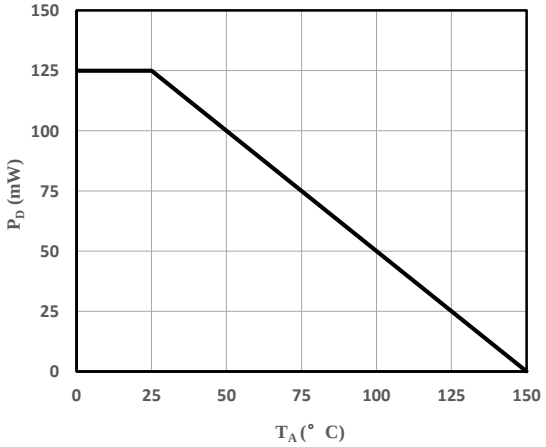
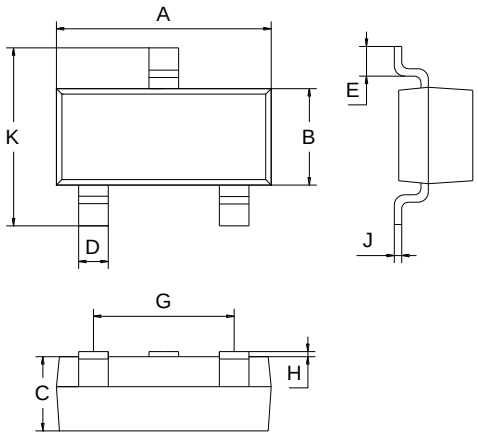
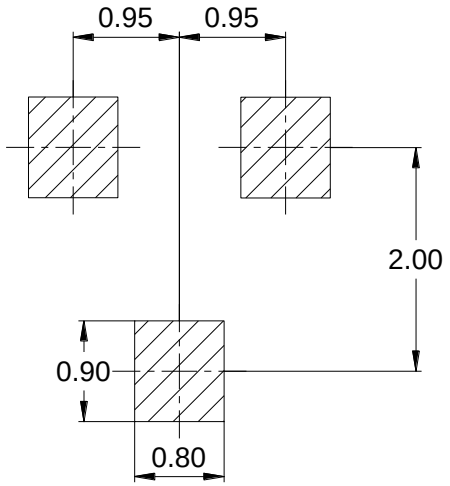


Fig 5 Steady State Power Derating

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23