

S9013 Transistor(NPN)

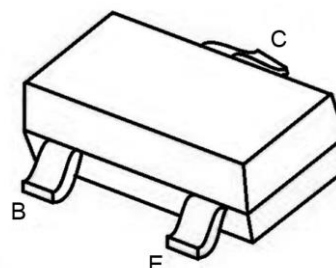
Feature

- NPN epitaxial silicon , planar design
- Collector-emitter voltage $V_{CE}=20V$
- Collector current $I_C=0.5A$
- High breakdown voltage

MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	0.5	A
Power Dissipation	P_d	0.625	W
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

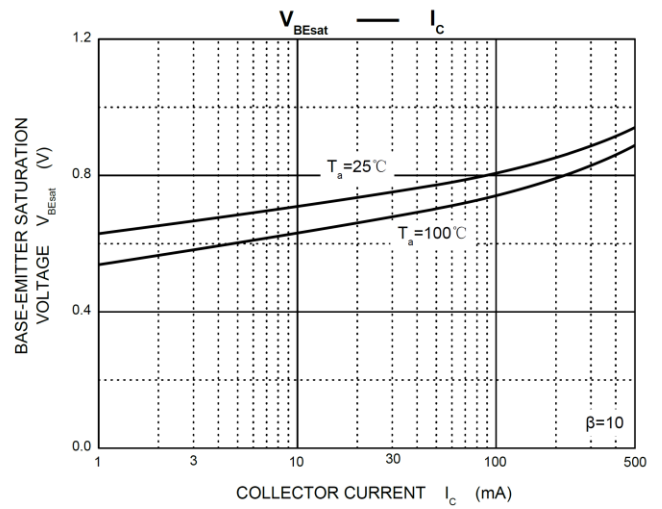
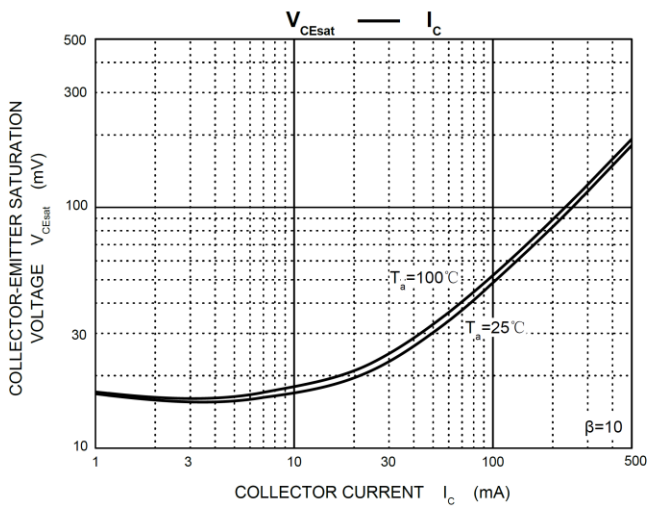
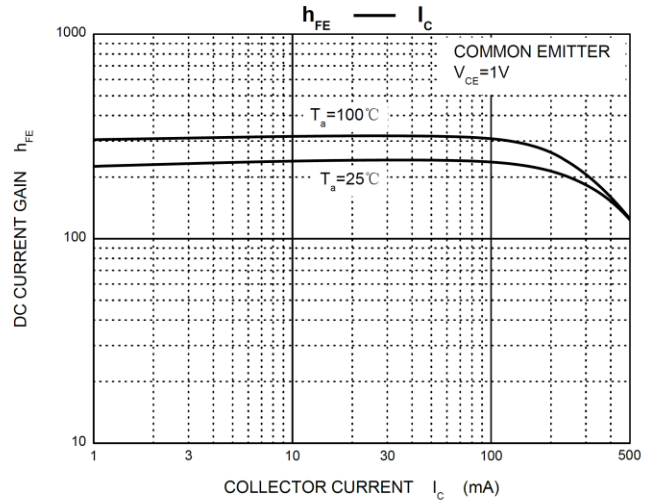
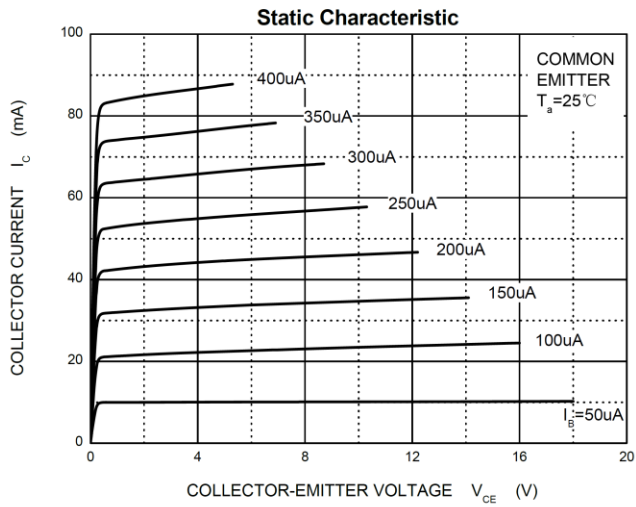
SOT-23

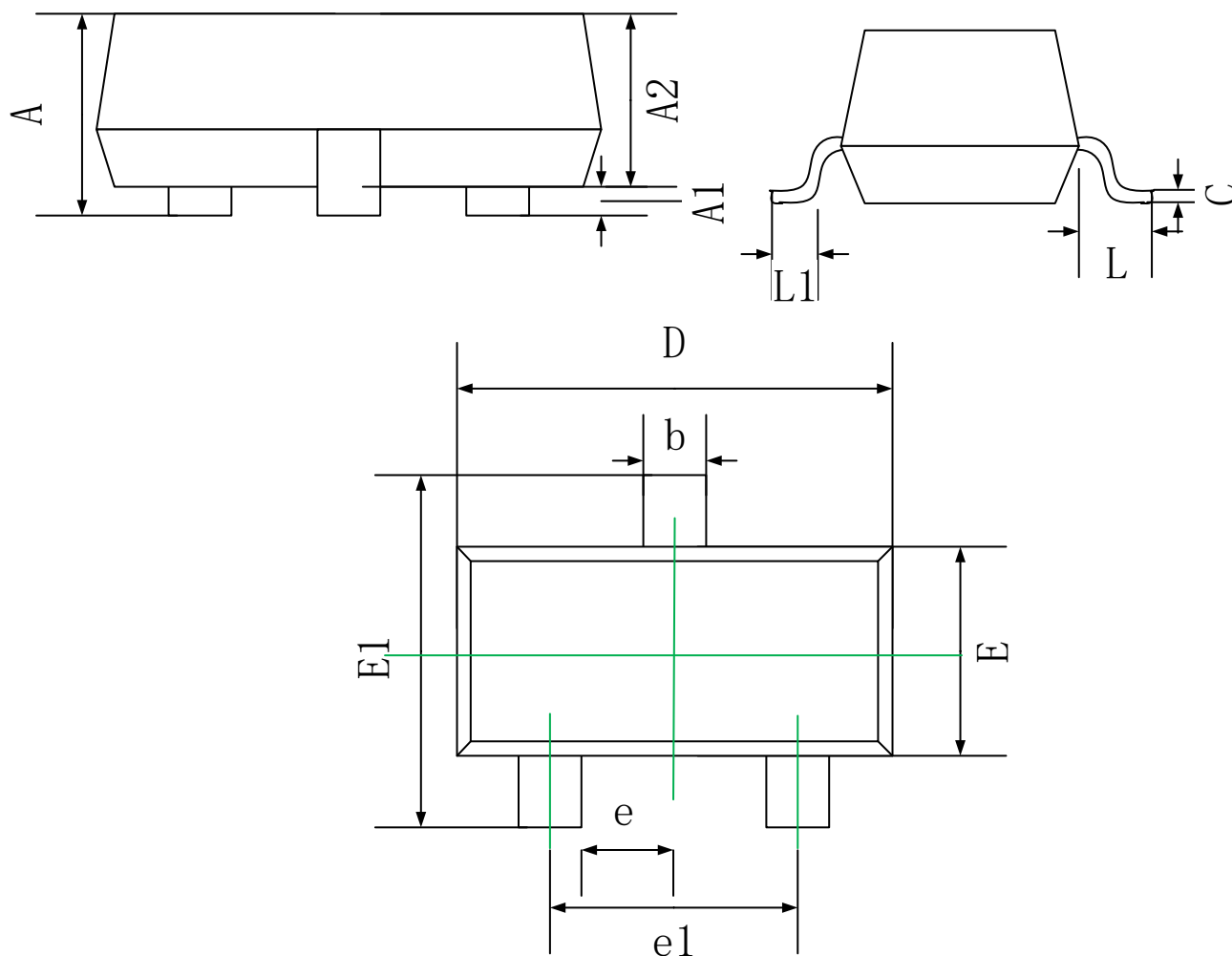


ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-base breakdown voltage	$V(BR)_{CBO}$	$I_C=100\mu A, I_E=0$	40		V
Collector-emitter breakdown voltage	$V(BR)_{CEO}$	$I_C=100\mu A, I_B=0$	20		V
Emitter-base breakdown voltage	$V(BR)_{EBO}$	$I_E=100\mu A, I_C=0$	5		V
Collector cut-off current	I_{CBO}	$V_{CB}=40V, I_E=0$		100	nA
Collector cut-off current	I_{CEO}	$V_{CE}=20V, I_B=0$		100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$		100	nA
DC current gain	h_{FE}	$V_{CE}=1V, I_C=50mA$	200	350	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$		1.2	V
Transition frequency	f_T	$V_{CE}=6V, I_C=20mA, f=30MHz$	150		MHZ

Typical Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50