



**GP**  
**ELECTRONICS**

**S9012**

## **S9012 Transistor(PNP)**

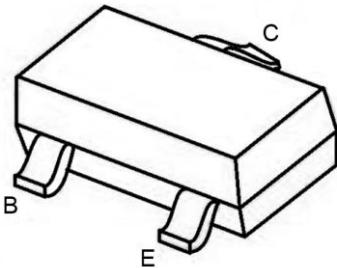
### **Feature**

- High collector current
- Complementary to S9013
- Excellent  $h_{FE}$  Linearity

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

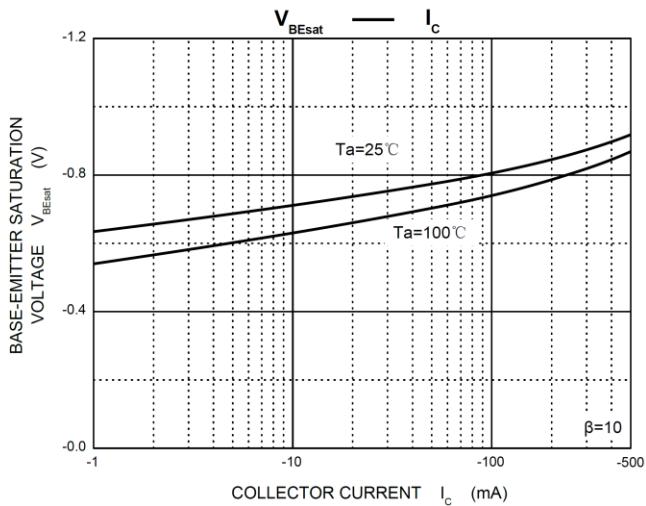
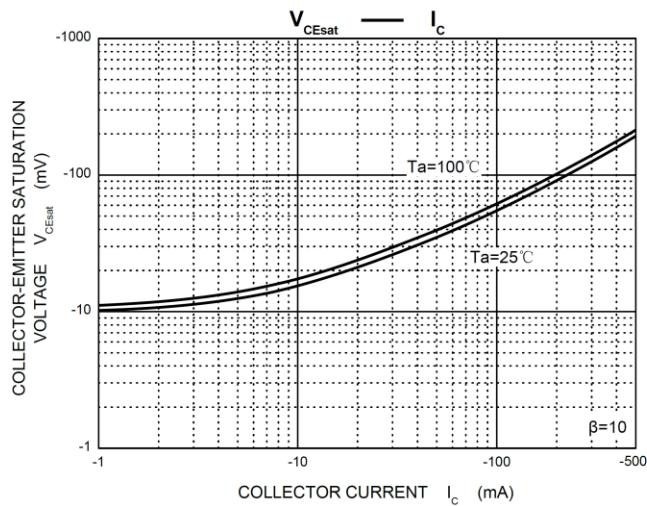
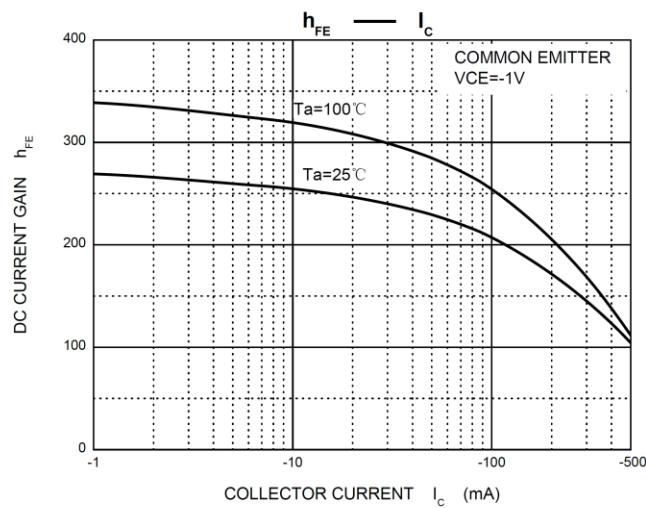
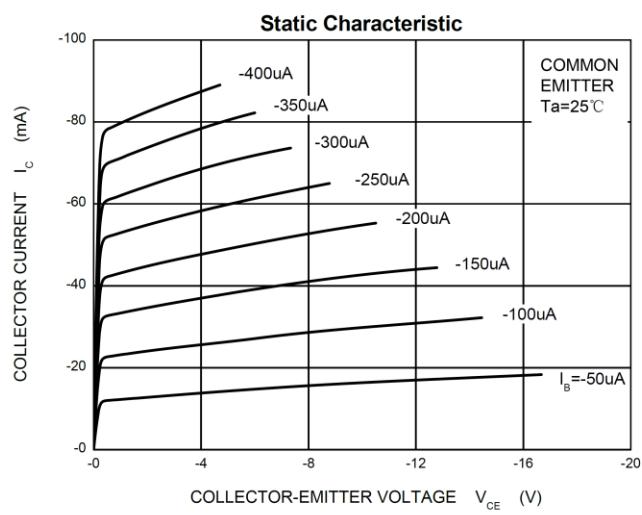
Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current -Continuous	$I_C$	0.5	A
Power Dissipation	$P_d$	0.625	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~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

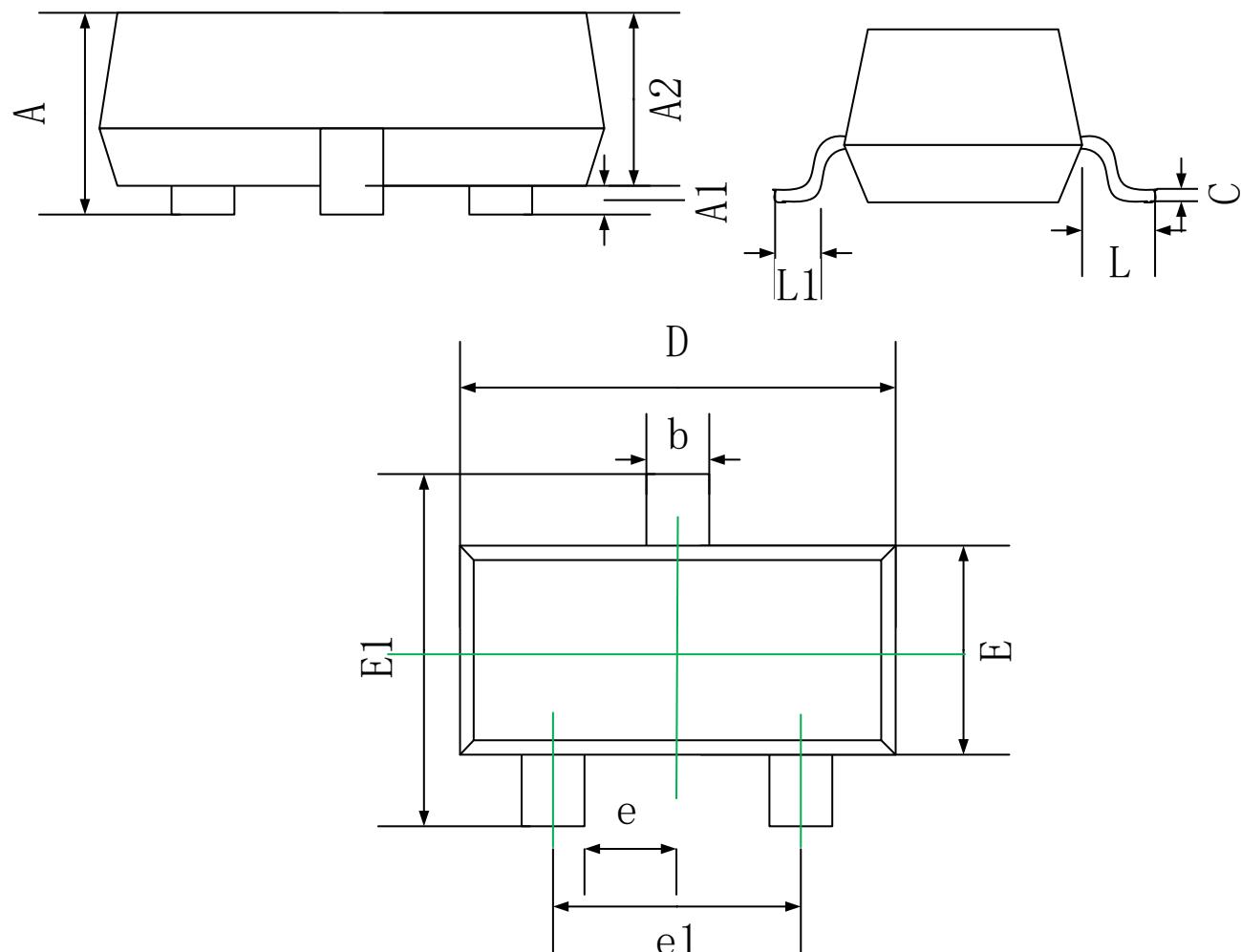
**SOT-23**



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

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