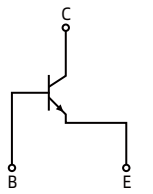
TL-S9013

SOT23 Plastic-Encapsulate Transistors (NPN)

Features

- Collector current IC=0.5A.
- Excellent hFE Linearity.
- Complementary to S9012.

SOT23



Equivalent Circuit

Absolute Maximum Ratings(T_A=25℃)

Symbol	Parameter	Value	Uniat
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	0.5	A
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	400	℃/W
T_J,T_{stg}	Operation Junction And Storage Temperature Range	-55 ~ +150	℃/W

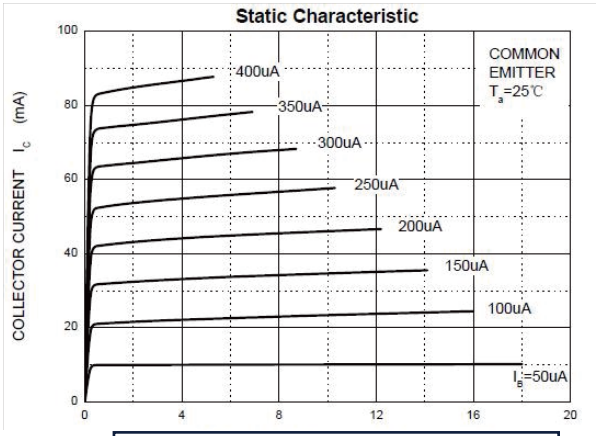
Electrical Characteristics (T_A=25℃ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=100μA, I_E=0	40			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=0.1mA, I_B=0	25			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=100μA, I_C=0	5			V
I_{CEO}	Collector cut-off current	V_{CE}=20V, I_E=0			100	nA
I_{CBO}	Collector cut-off current	V_{CB}=40V, I_E=0			100	nA
I_{EBO}	Emitter cut-off current	V_{EB}=50V, I_C=0			100	nA
$h_{FE(1)}$	DC current gain(1)	V_{CE}=1V, I_C=50mA	200		350	
$h_{FE(2)}$	DC current gain(2)	V_{CE}=1V, I_C=500mA	50			
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C=500mA, I_B=50mA			0.6	V
$V_{BE(sat)}$	Base-emitter saturation voltage				1.2	V
f_T	Transition frequency	V_{CE}=6V, I_C=20mA, f=30MHz	150			MHz
C_{ob}	Collector output capacitance	V_{CB}=6V, I_E=0, f=1MHz			8	pF

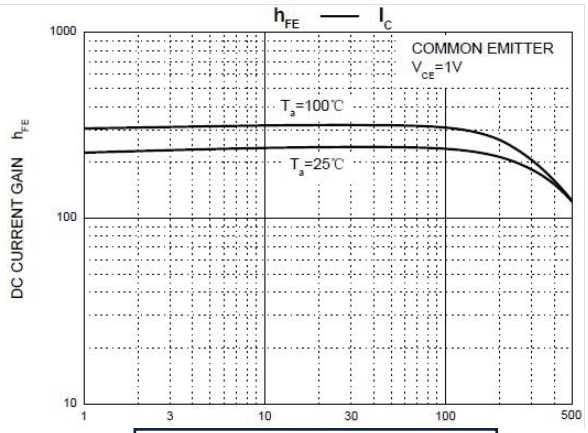
Ordering information

Product ID	Pack	Naming rule	Marking	hFE(1)	Qty(PCS)
S9013	SOT23	S9013 (产品名称 product name)	J3	200 ~ 350	3000

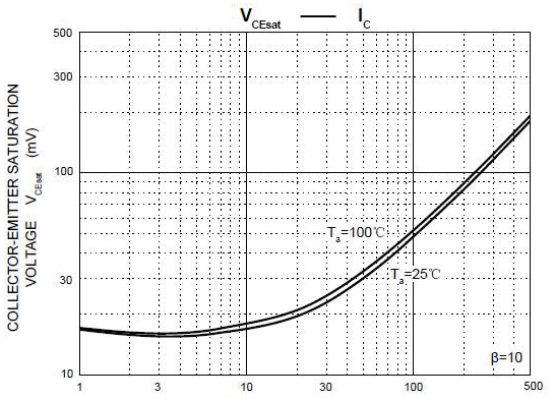
Typical Characteristics



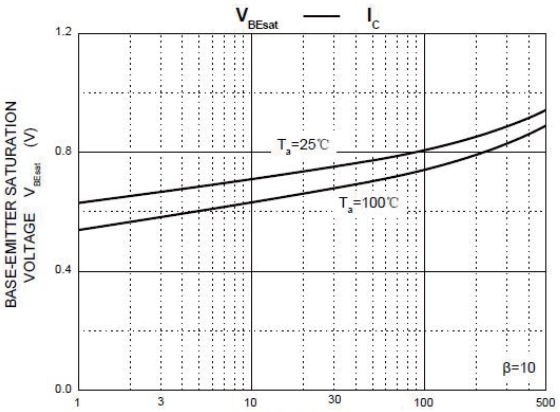
COLLECTOR-EMITTER VOLTAGE V_{CE}(V)



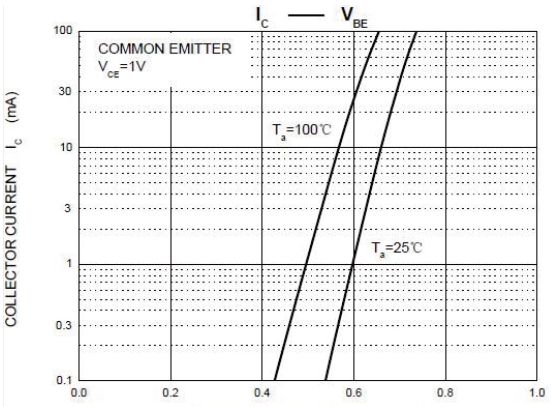
COLLECTOR CURRENT I_C(mA)



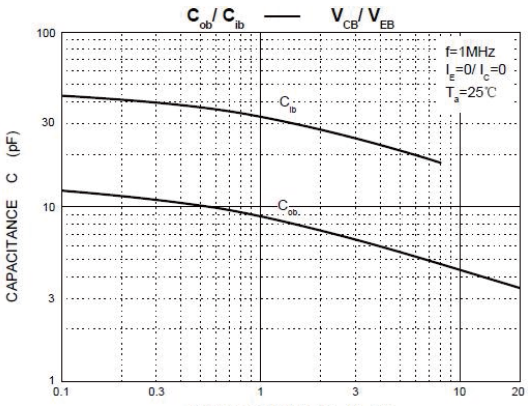
COLLECTOR CURRENT I_C(mA)



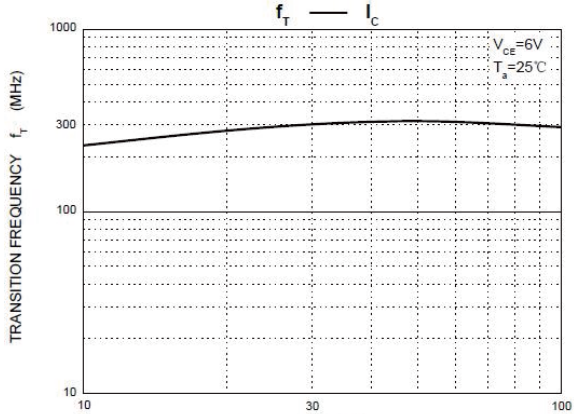
COLLECTOR CURRENT I_C(mA)



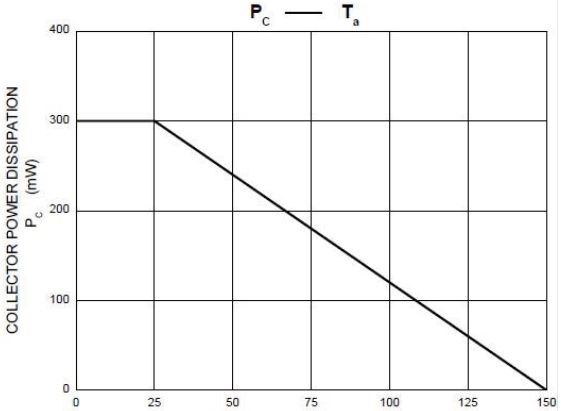
BASE-EMMITER VOLTAGE V_{BE}(V)



COLLECTOR CURRENT I_C(mA)

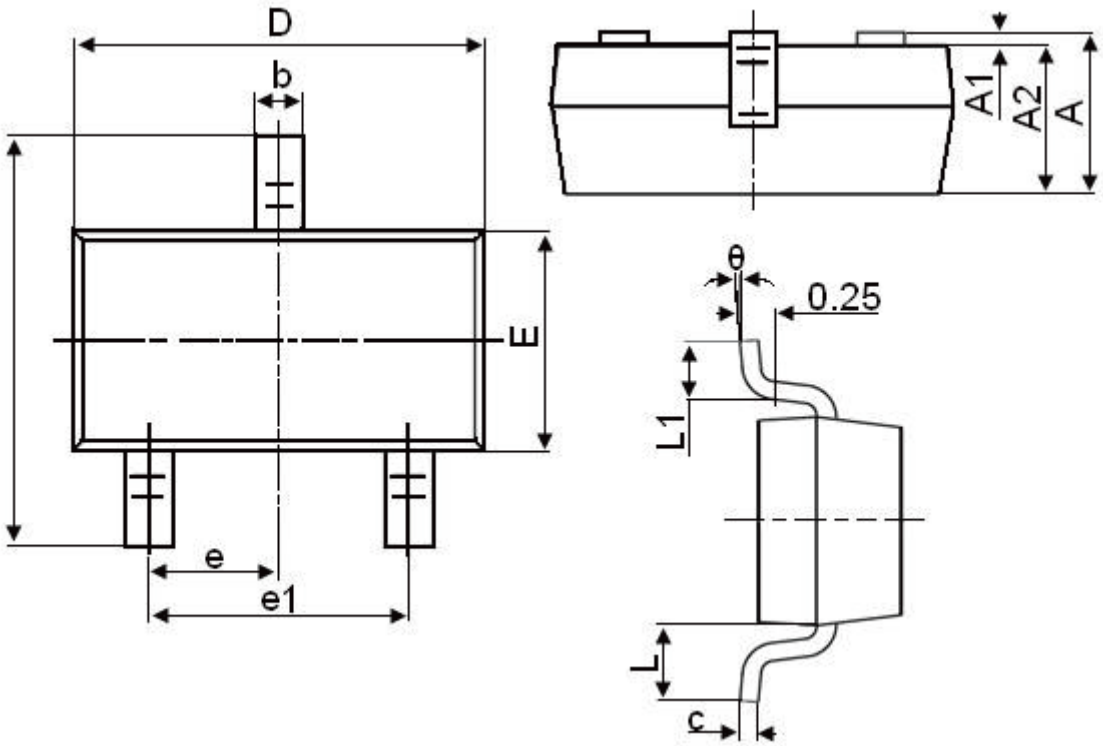


COLLECTOR CURRENT I_C(mA)



AMBIENT TEMPERATURE Ta(°C)

SOT23 Package Outline Dimensions



Symbol	Dimensions in Millimeters	
	mm	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°