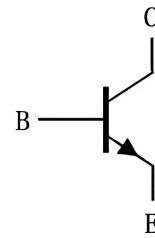


Features

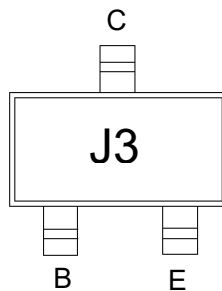
- High Collector Current
- Excellent HFE Linearity



SOT-323 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
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	500	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
S9013W	SOT-323	J3	3,000	45,000	180,000	7" reel

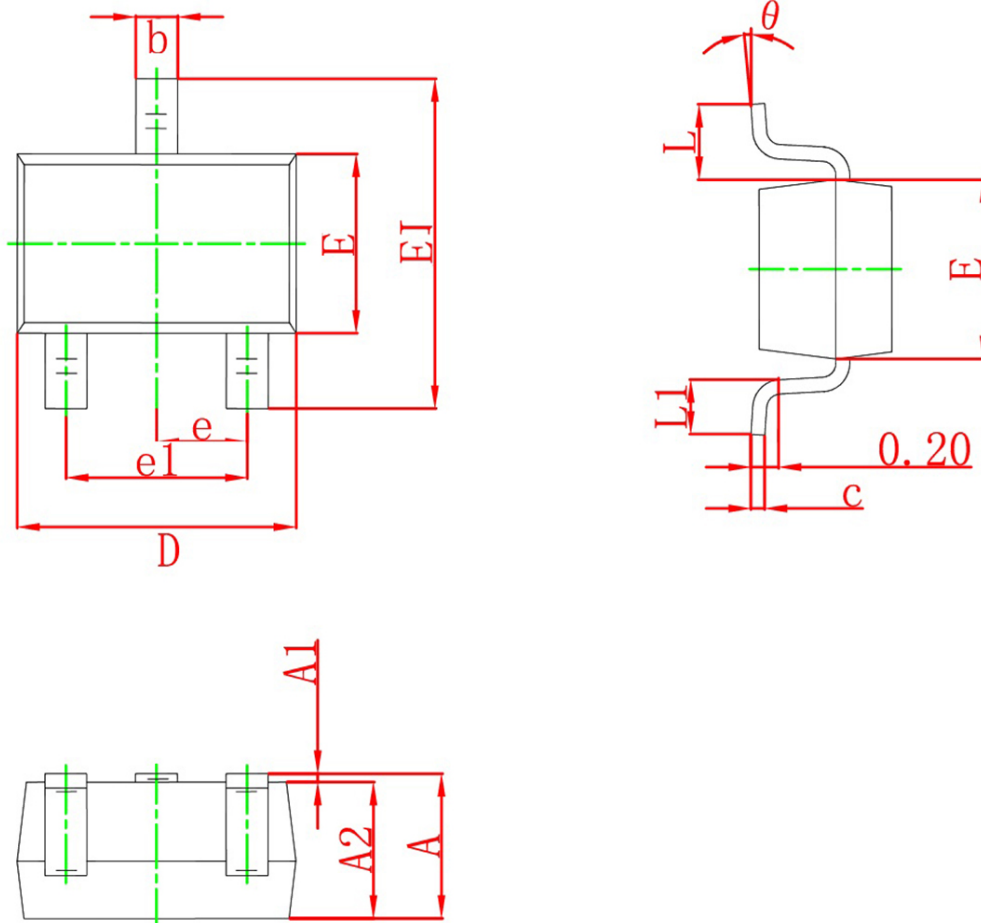
Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu A, I_E=0$	40	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=1mA, I_B=0$	25	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu A, I_C=0$	5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB}=40V, I_E=0$	--	--	100	nA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V, I_C=0$	--	--	100	nA
I_{CEO}	Collector cut-off current	$V_{CE}=20V, I_B=0$	--	--	100	nA
H_{FE}	DC current gain	$V_{CE}=1V, I_C=50mA$	120	--	400	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=500mA, I_B=50mA$	--	--	0.6	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$I_C=500mA, I_B=50mA$	--	--	1.2	V
V_{BE}	Base-emitter voltage	$V_{CE}=1V, I_C=10mA$	--	--	0.7	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

Classification of hFE

Rank	L	H	J
Marking	J3		
Range	120-200	200-350	300-400

SOT-323 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°