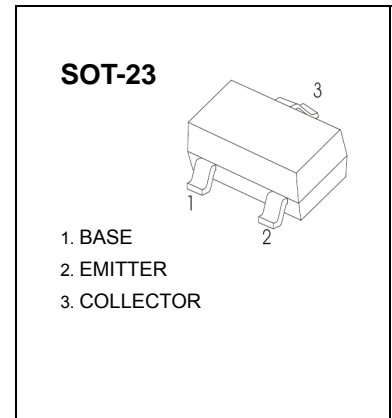


## SOT-23 Plastic-Encapsulate Transistors

**S9018** TRANSISTOR (NPN)**FEATURES**

- AM/FM Amplifier, Local Oscillator of FM/VHF Tuner
- High Current Gain Bandwidth Product

**MARKING: J8****MAXIMUM RATINGS** ( $T_a=25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	15	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	50	mA
$P_C$	Collector Power Dissipation	200	mW
$\theta_{JA}$	Thermal Resistance from Junction to Ambient	625	$^\circ\text{C}/\text{W}$
$T_j$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

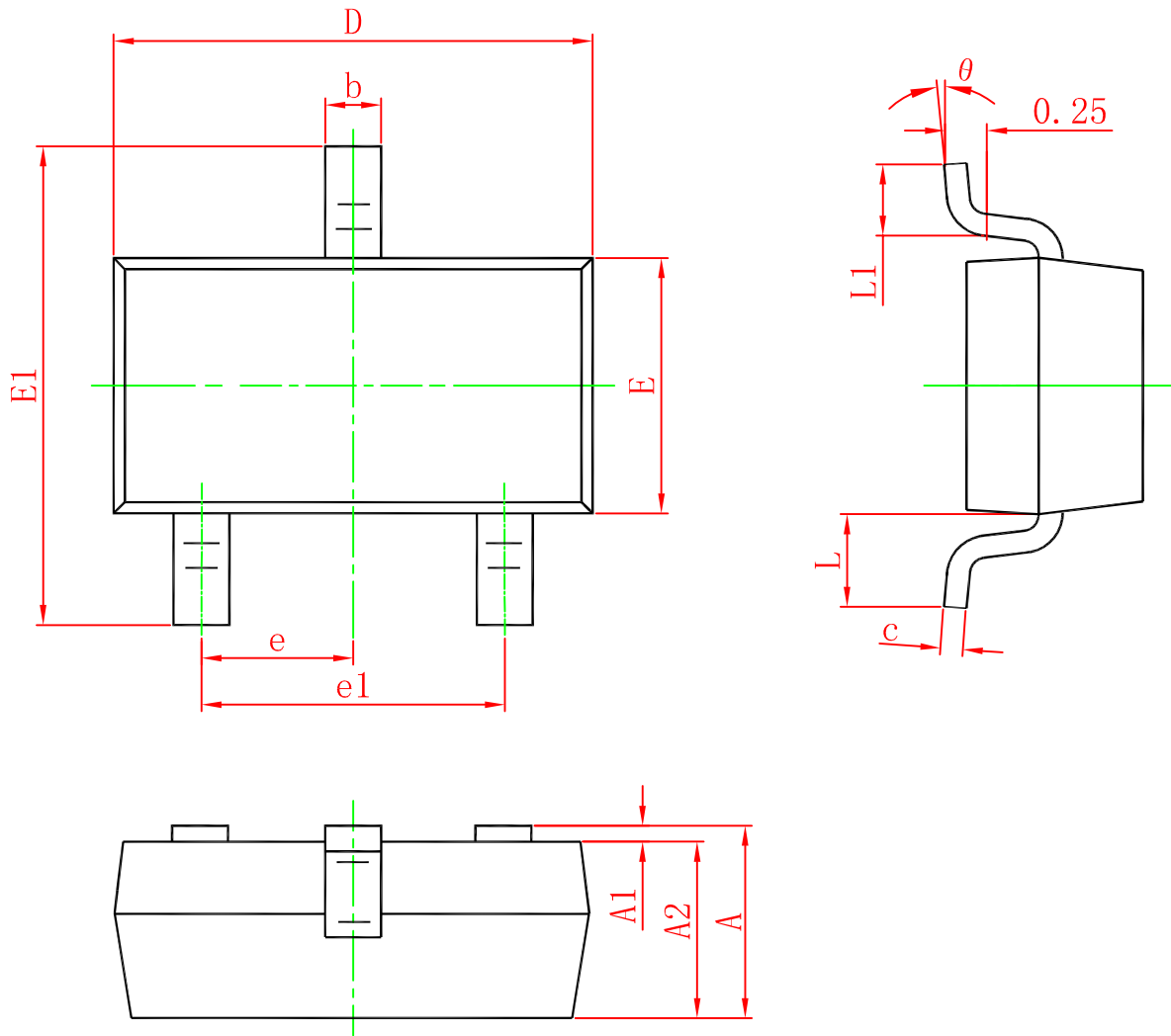
**ELECTRICAL CHARACTERISTICS** ( $T_a=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$ , $I_B=0$	15			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$ , $I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=12\text{V}$ , $I_E=0$			0.05	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=12\text{V}$ , $I_B=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=3\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}$ , $I_C=1\text{mA}$	70		190	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ , $I_B=1\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=10\text{mA}$ , $I_B=1\text{mA}$			1.4	V
Transition frequency	$f_T$	$V_{CE}=5\text{V}$ , $I_C=5\text{mA}$ $f=400\text{MHz}$		800		MHz

**CLASSIFICATION OF  $h_{FE}$** 

Rank	L	H
Range	70-105	105-190

SOT-23 Plastic-Encapsulate Transistors  
SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°