

# S9018

## S9018 NPN Transistors

### General description

SOT-23 Plastic-Encapsulate Transistors

SOT-23

### FEATURES

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

1. BASE  
2. EMITTER  
3. COLLECTOR



MARKING : J8

### Maximum Ratings & Thermal Characteristics

$T_A = 25^\circ\text{C}$  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	$^\circ\text{C}/\text{W}$
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55-150	$^\circ\text{C}$

### Electrical Characteristics

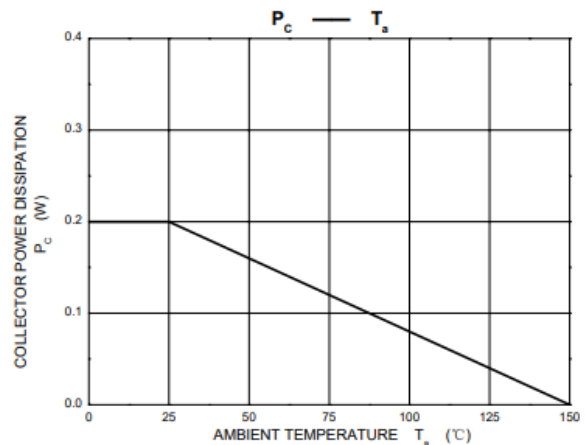
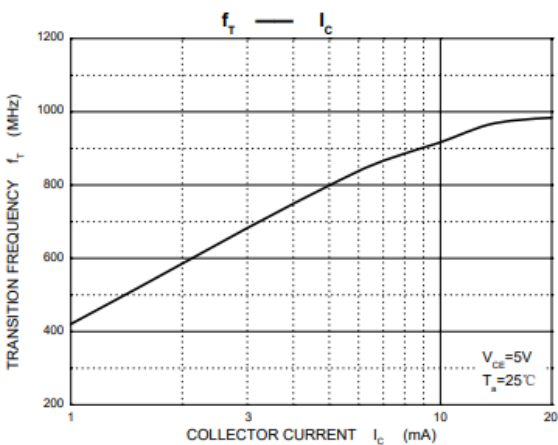
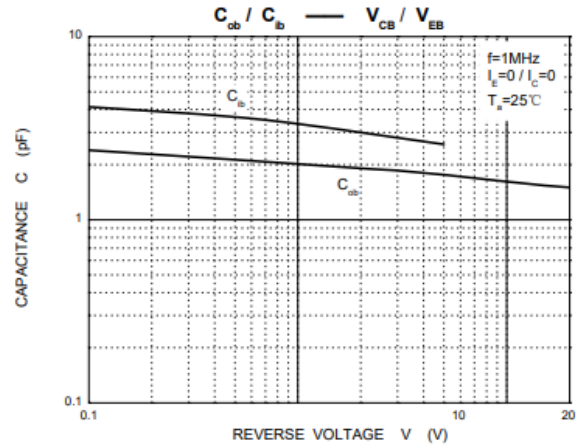
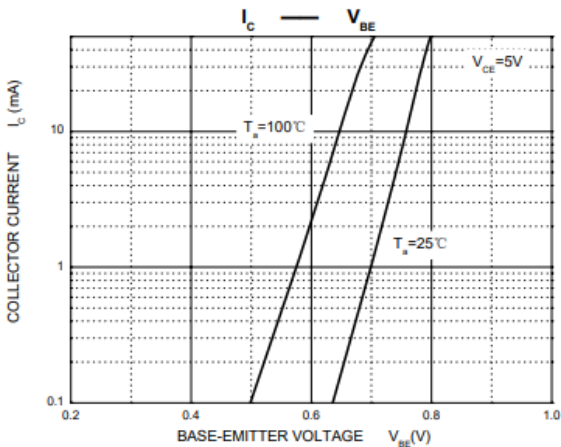
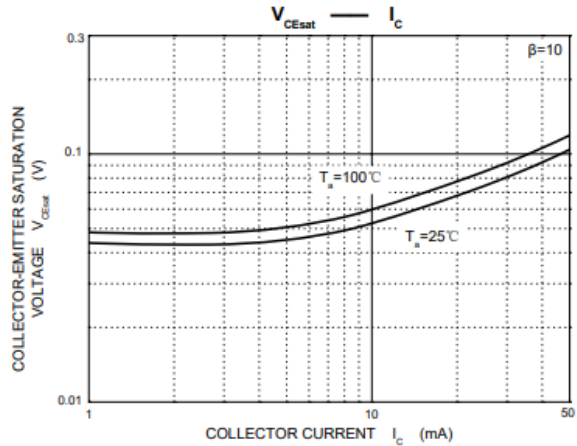
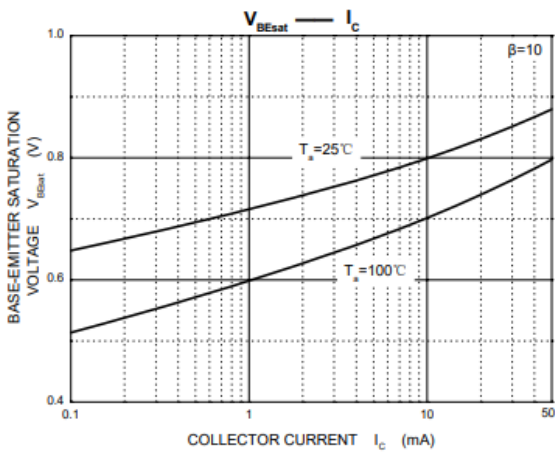
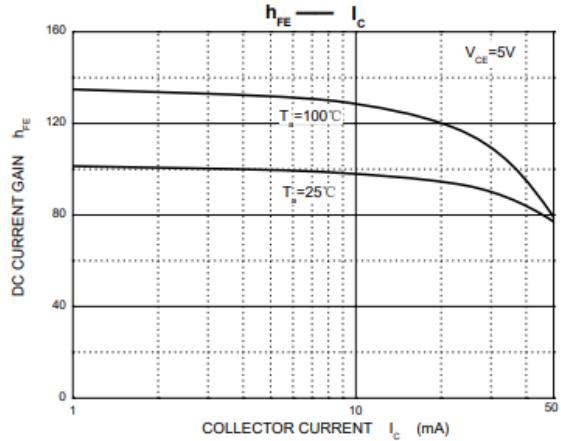
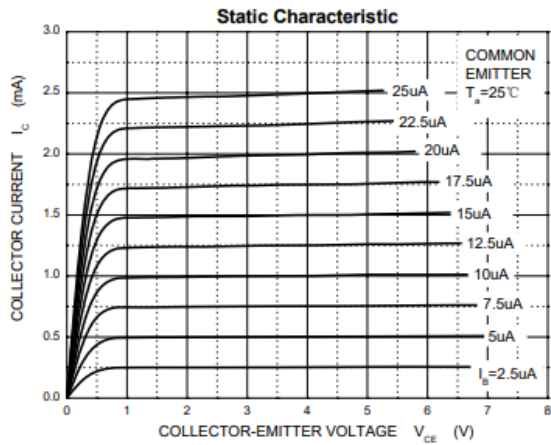
$T_A = 25^\circ\text{C}$  unless otherwise noted

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		200	
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 $h_{FE(1)}$

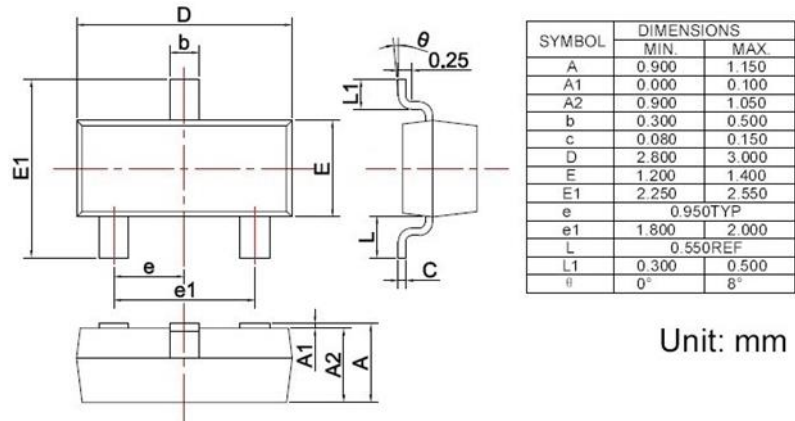
Rank	L	H
Range	70-100	100-200

## Typical characteristics

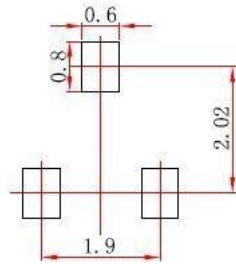


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## SOT-23 PACKAGE OUTLINE Plastic surface mounted package



Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance: ± 0.05mm.
  3. The pad layout is for reference purposes only.

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