S9018

DATASHEET

Specification Revision History:

Version	Date	Description
V1.0	2021/08	New
V1.1	2023/05	Modify Ordering Information
V1.2	2024/02	Modify Ordering Information
V1.3	2025/05	Add application precautions and overall typesetting.

Features

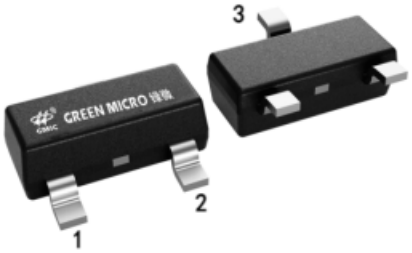
※SOT23 Plastic-Encapsulate Transistors (NPN)

※High Pc and fT, low frequency shift.

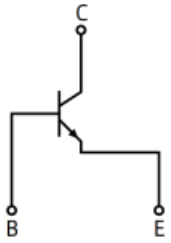
※High Current Gain Bandwidth Product.

※Suitable for AM/FM IF amplifier, local oscillator.

Simplified Outline



1.Base
2.Emitter
3.Collector



SOT-23

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
S9018-GM	SOT-23	J8	REEL	3000PCS/REEL

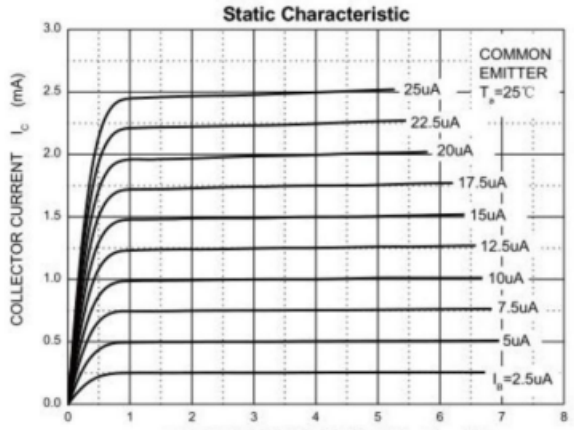
Absolute Maximum Ratings(TA=25°C)

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	0.05	A
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/W

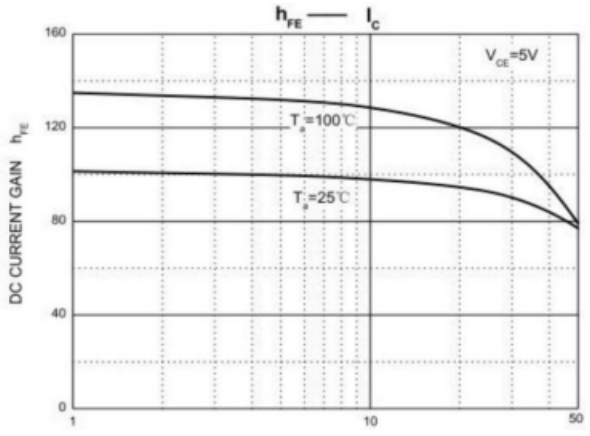
Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=100μA, I_E=0	30			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA, I_B=0	15			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=100μA, I_C=0	5			V
I_{CEO}	Collector cut-off current	V_{CE}=12V, I_E=0			100	nA
I_{CBO}	Collector cut-off current	V_{CB}=12V, I_E=0			50	nA
I_{EBO}	Emitter cut-off current	V_{EB}=3V, I_C=0			100	nA
h_{FE}	DC current gain	V_{CE}=5V, I_C=1mA	100		200	
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C=10mA, I_B=1mA			0.5	V
$V_{BE(sat)}$	Base-emitter saturation voltage				1.4	V
f_T	Transition frequency	V_{CE}=5V, I_C=5mA, f=400MHz		800		MHz

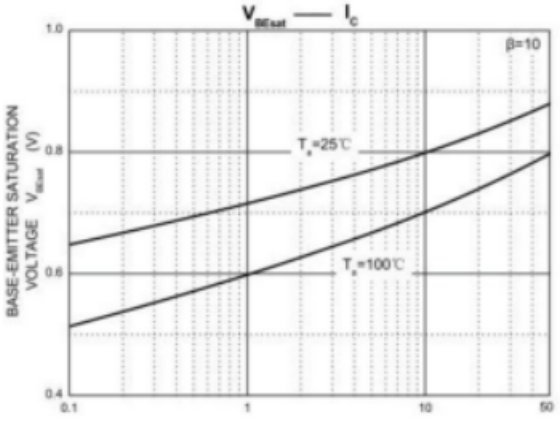
Typical Characteristics



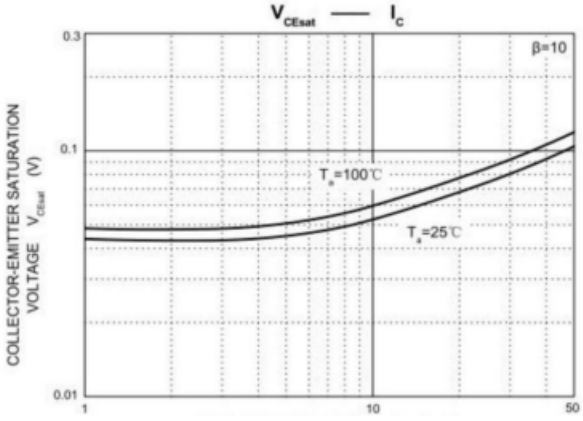
COLLECTOR-EMITTER VOLTAGE V_{CE}(V)



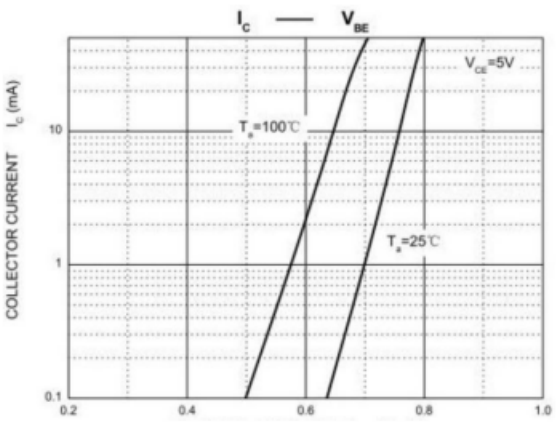
COLLECTOR CURRENT Ic(mA)



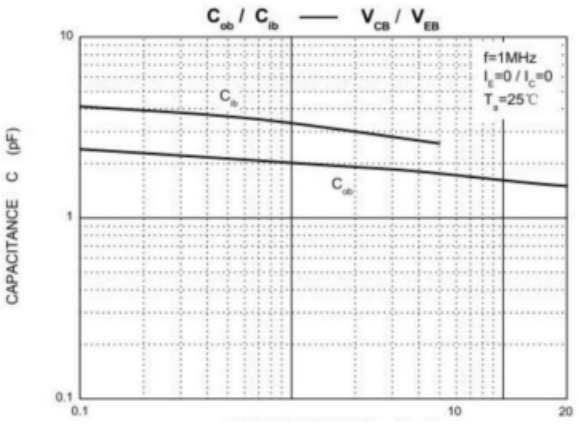
COLLECTOR CURRENT Ic(mA)



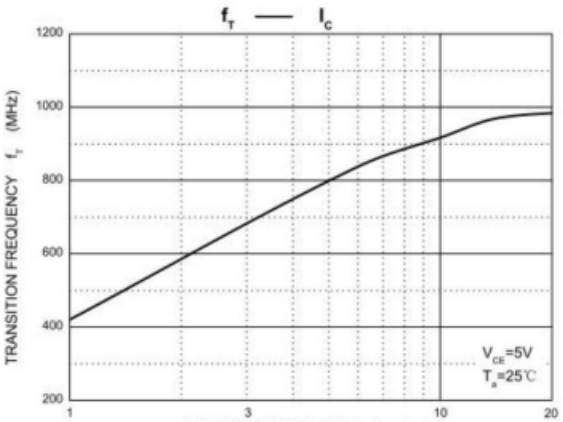
COLLECTOR CURRENT Ic(mA)



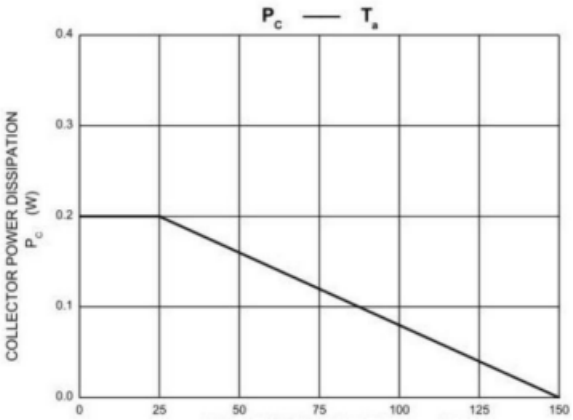
BASE-EMMITER VOLTAGE V_{BE} (V)



OLTAGE V (V)



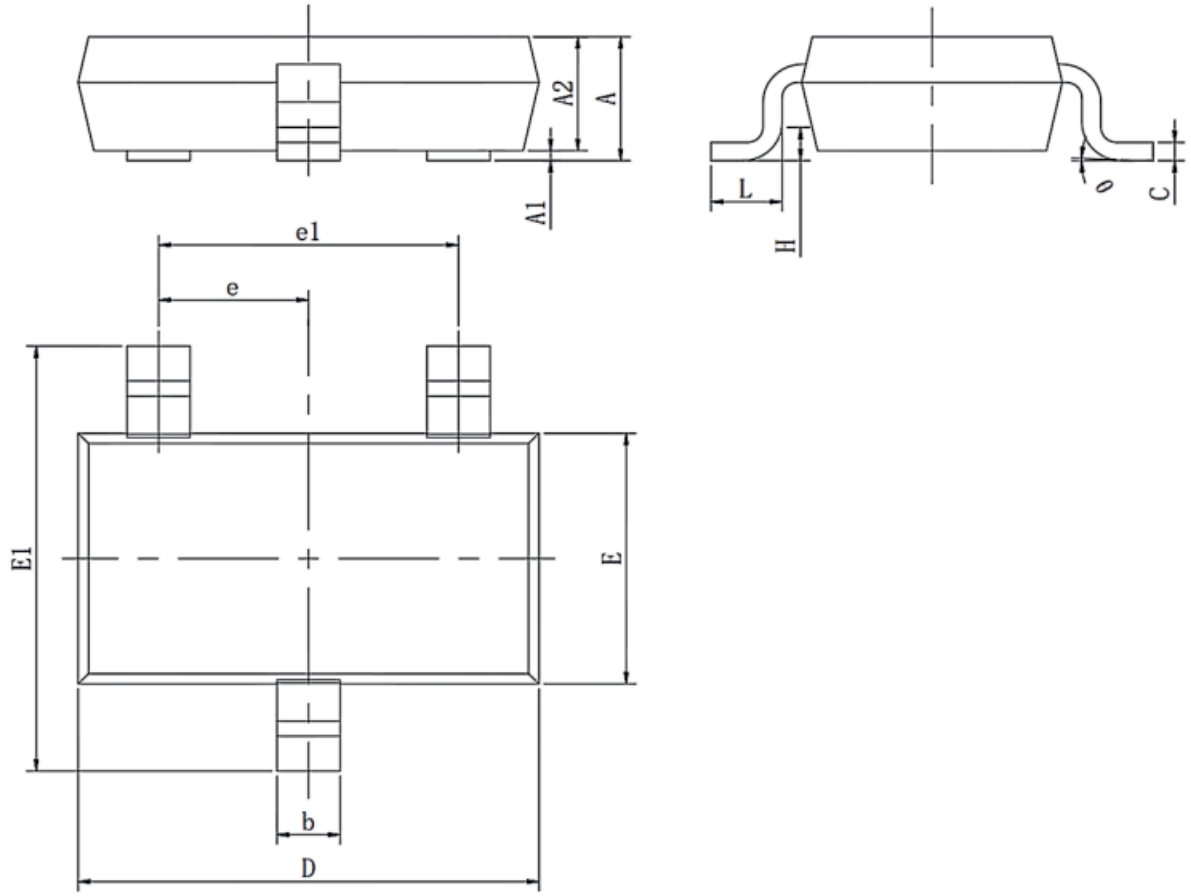
COLLECTOR CURRENT Ic(mA)



AMBIENT TEMPERATURE Ta(℃)

Outline Dimensions

SOT-23 Unit : mm



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	0.200	0.003	0.008
D	2.800	3.020	0.110	0.119
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 (BSC)		0.037(BSC)	
e1	1.90 (BSC)		0.075(BSC)	
L	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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