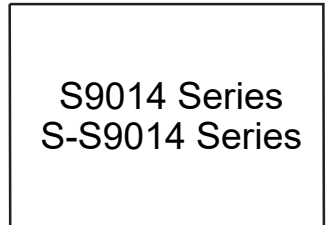


General Purpose Transistors

NPN Silicon

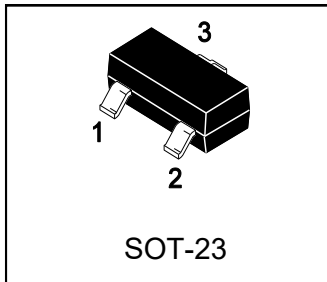
FEATURE

- Complementary to S9014.
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



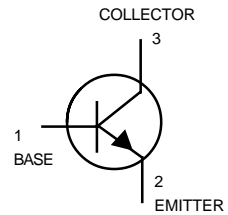
DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
S9014Q S-S9014Q	14Q	3000/Tape&Reel
S9014R S-S9014R	14R	3000/Tape&Reel
S9014S S-S9014S	14S	3000/Tape&Reel
S9014T S-S9014S	14T	3000/Tape&Reel



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	45	V
Collector-Base Voltage	V_{CBO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector current-continuoun	I_C	100	mA



THERMAL CHARATEERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A=25^\circ\text{C}$	P_D	225	mW
Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$	P_D	300	mW
Derate above 25°C		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

1. FR-5 = 1.0 x 0.75 x 0.062 in.
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

OFF CHARACTERISTICS

Characteristic	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage ($I_C=1.0mA$)	$V(BR)_{CEO}$	45	-	-	V
Emitter-Base Breakdown Voltage ($I_E=100\mu A$)	$V(BR)_{EBO}$	5	-	-	V
Collector-Base Breakdown Voltage ($I_C=100\mu A$)	$V(BR)_{CBO}$	50	-	-	V
Collector Cutoff Current ($V_{CB}=40V$)	I_{CBO}	-	-	100	nA
Emitter Cutoff Current ($V_{EB}=3V$)	I_{EBO}	-	-	100	nA

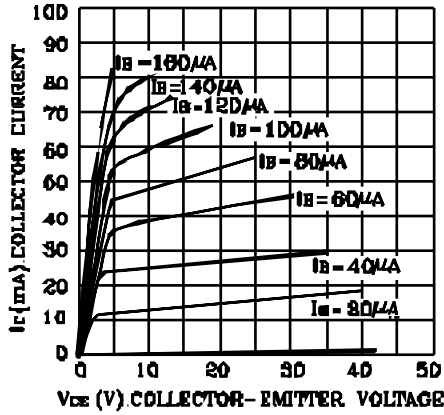
ON CHARACTERISTICS

DC Current Gain ($I_C=1mA, V_{CE}=5V$)	H_{FE}	150	-	1000	
Collector-Emitter Saturation Voltage ($I_C=100mA, I_B=5mA$)	V_{CE}	-	-	0.3	V

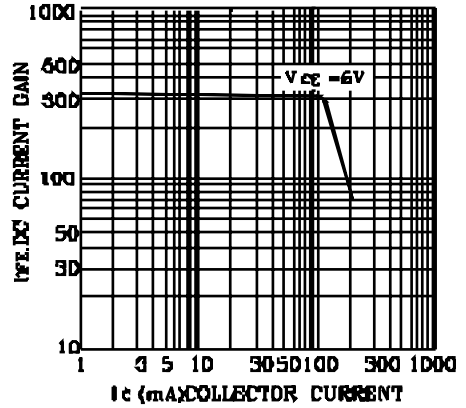
NOTE:	*	Q	R	S	T
	H_{FE}	150~300	200~400	300~600	400~1000



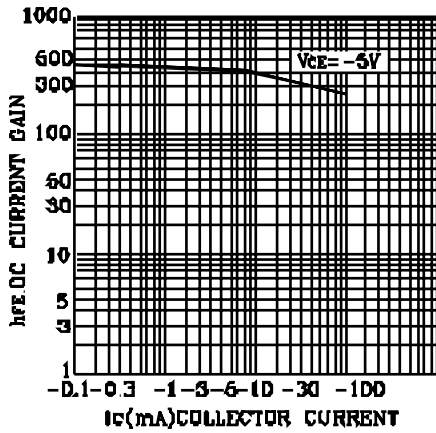
STATIC CHARACTERISTIC



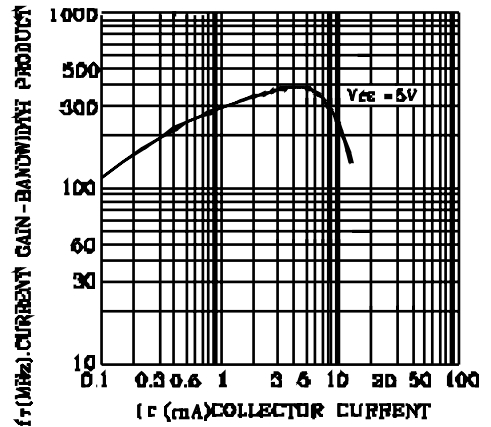
DC CURRENT GAIN



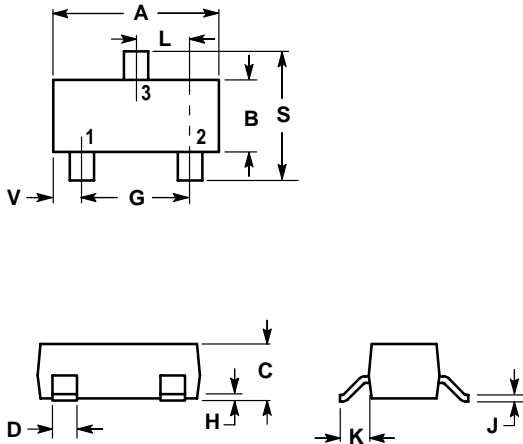
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



CURRENT GAIN-BANDWIDTH PRODUCT



SOT-23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. BASE
 2. EMITTER
 3. COLLECTOR

