

# General Purpose Transistors

## PNP 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
S9015Q S-S9015Q	15Q	3000/Tape&Reel
S9015R S-S9015R	15R	3000/Tape&Reel
S9015S S-S9015S	15S	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

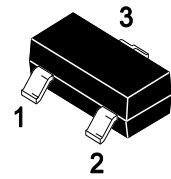
### THERMAL CHARATEERISTICS

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

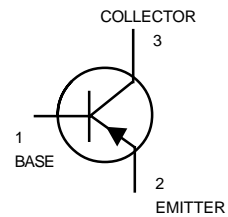
1. FR-5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

S9015 Series  
S-S9015 Series



SOT-23



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

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

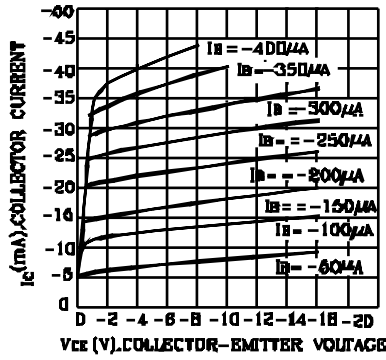
**ON CHARACTERISTICS**

DC Current Gain ( $I_C=-1\text{mA}$ , $V_{\text{CE}}=-5\text{V}$ )	$H_{\text{FE}}$	150	-	600	
Collector-Emitter Saturation Voltage ( $I_C=-100\text{mA}$ , $I_B=-5\text{mA}$ )	$V_{\text{CE}}$	-	-	-0.3	V

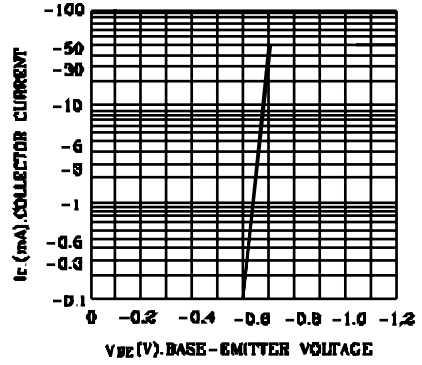
NOTE:	*	Q	R	S
	$H_{\text{FE}}$	150~300	200~400	300~600



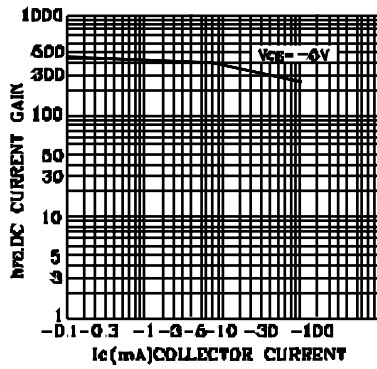
STATIC CHARACTERISTIC



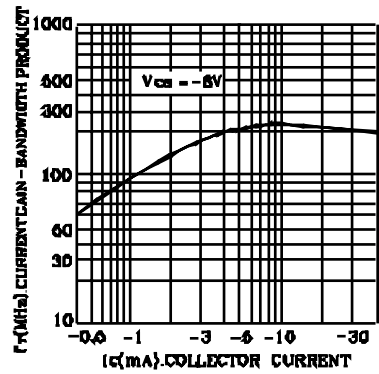
BASE-EMITTER VOLTAGE



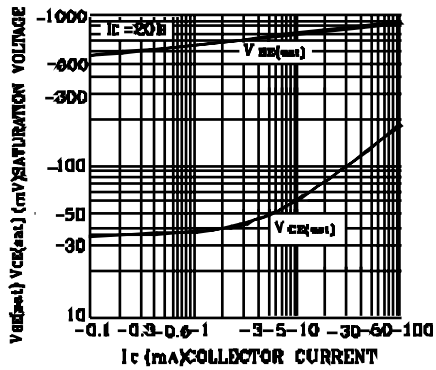
DC CURRENT GAIN



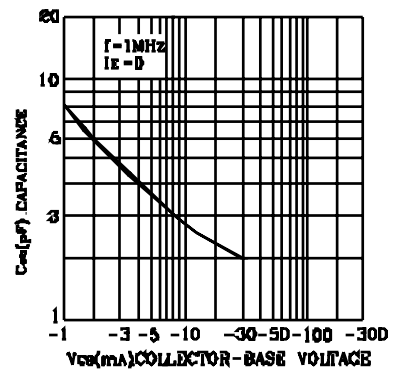
CURRENT GAIN-BANDWIDTH PRODUCT



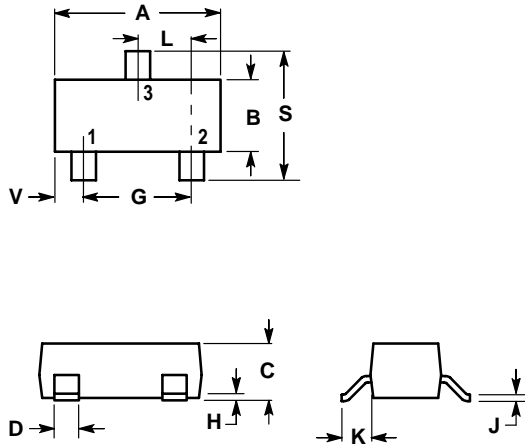
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE



**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

