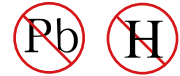




General Purpose Transistors

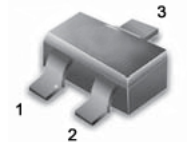
PNP Silicon



FEATURE

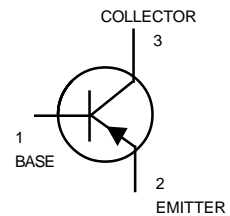
- Complementary to 9014.
- We declare that the material of product compliance with RoHS requirements.

SOT-23



DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
9015Q	15Q	3000/Tape&Reel
9015R	15R	
9015S	15S	



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. $T_A=25^{\circ}\text{C}$	P_D	225	mW
Derate above 25°C		1.8	mW/ $^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient	R_{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_{JA}	417	$^{\circ}\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

9015Q/R/S

ELECTRICAL CHARACTERISTICS (T_A=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 =100μA)	V(BR) _{EBO}	5	-	-	V
Collector-Base Breakdown Voltage (I _C =100μA)	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

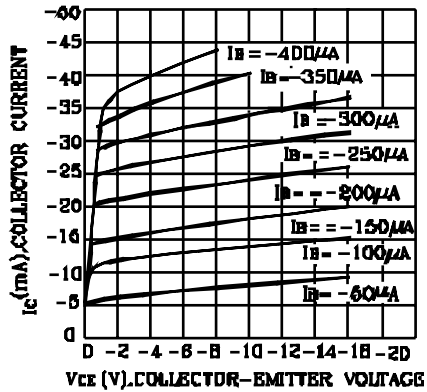
DC Current Gain (I _C =1mA, V _{CE} =5V)	H _{FE}	150	-	600	
Collector-Emitter Saturation Voltage (I _C =100mA, I _B =5mA)	V _{CE}	-	-	0.3	V

NOTE:	*	Q	R	S
	H _{FE}	150~300	200~400	300~600

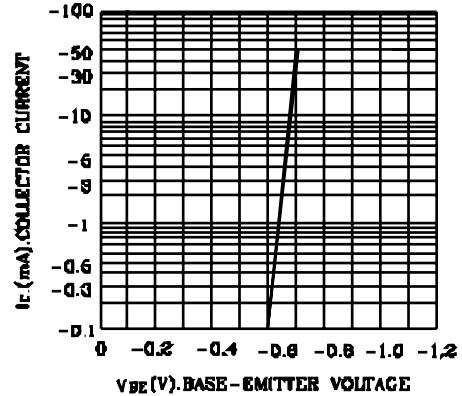
DEVICE CHARACTERISTICS

9015Q/R/S

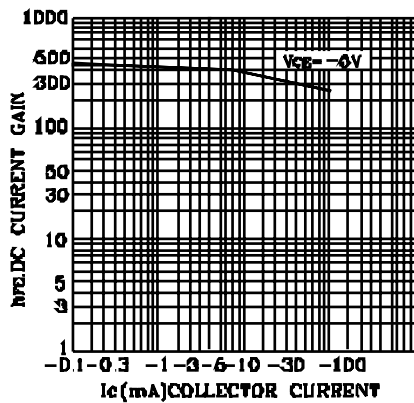
STATIC CHARACTERISTIC



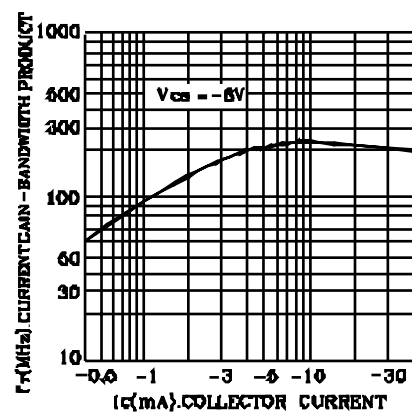
BASE-EMITTER VOLTAGE



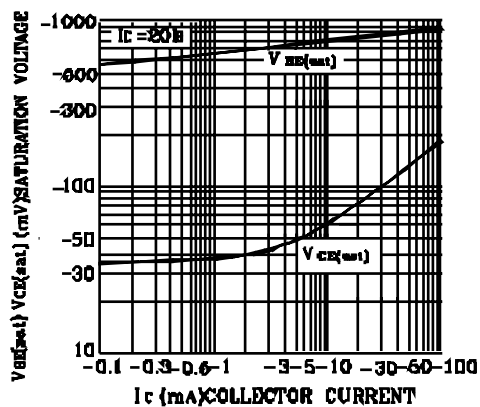
DC CURRENT GAIN



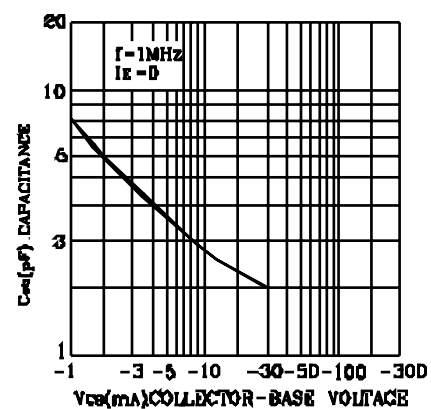
CURRENT GAIN-BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



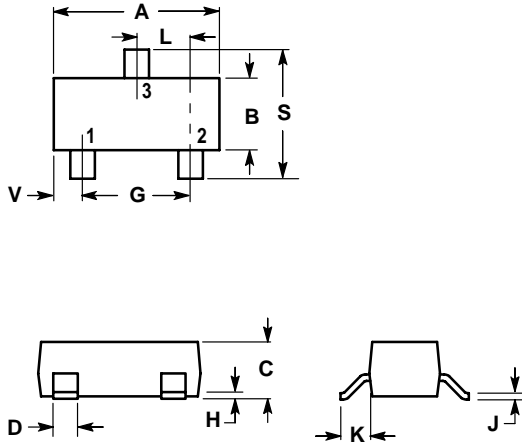
COLLECTOR OUTPUT CAPACITANCE



PACKAGE OUTLINE & DIMENSIONS

9015Q/R/S

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

