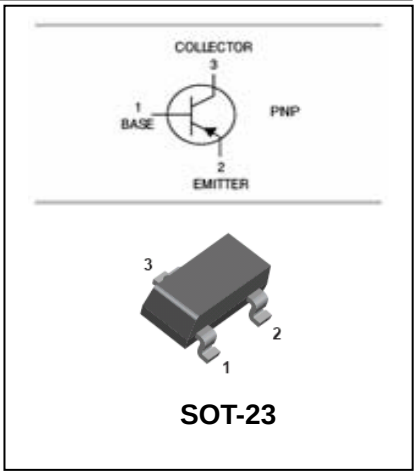
Silicon Epitaxial Planar Transistor **2SB709A**

FEATURES

- High forward current transfer ratio h_{FE}.
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Lead-free



SOT-23

APPLICATIONS

- For general amplification complementary to 2SD601A

ORDERING INFORMATION

Type No.	Marking	Package Code
2SB709A	BQ1,BR1,BS1	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Units**
V_{CBO}	Collector-Base Voltage	-45	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-7	V
I_{CP}	Peak collector Current	-200	mA
I_C	Collector Current	-100	mA
P_C	Collector Dissipation	200	mW
T_j, T_{stg}	Junction and Storage Temperature	-55~150	℃

Silicon Epitaxial Planar Transistor **2SB709A**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA,I_E=0	-45			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-2mA,I_B=0	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10μA,I_C=0	-7			V
Collector cut-off current	I_{CBO}	V_{CB}=-20V,I_E=0			-0.1	μA
Collector cut-off current	I_{CEO}	V_{EB}=-10V,I_C=0			-100	μA
DC current gain	h_{FE}	V_{CE}=-10V,I_C=-2mA	160		460	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=-10mA		-0.3	-0.5	V
Transition frequency	f_T	V_{CB}=-10V, I_E=-1mA f=200MHz		80		MHz
Collector output capacitance	C_{ob}	V_{CB}=-10V,I_E=0,f=1MHz		2.7		pF

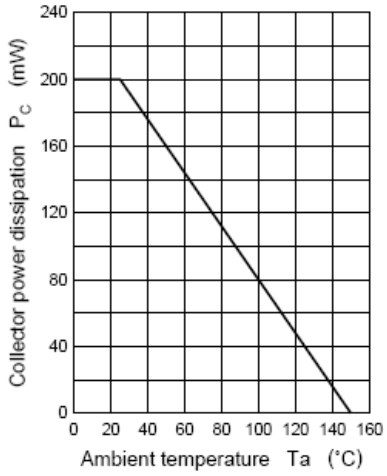
CLASSIFICATION OF $h_{FE(1)}$

Range	160-260	210-340	290-460
Marking	BQ1	BR1	BS1

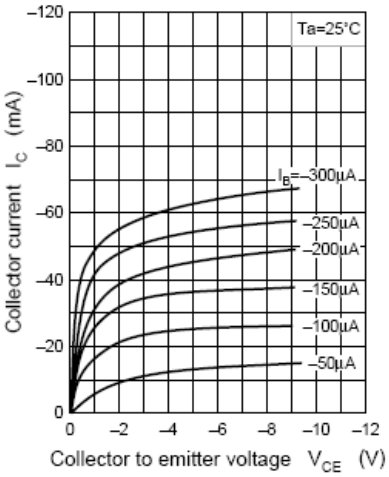
Silicon Epitaxial Planar Transistor **2SB709A**

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

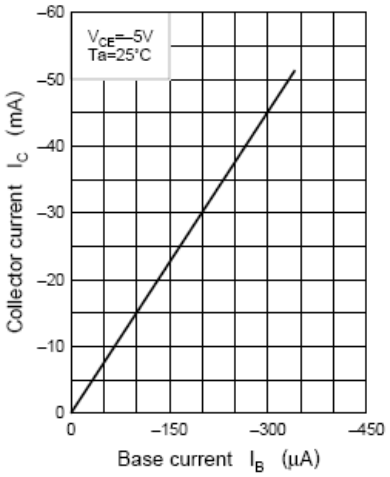
P_C — Ta



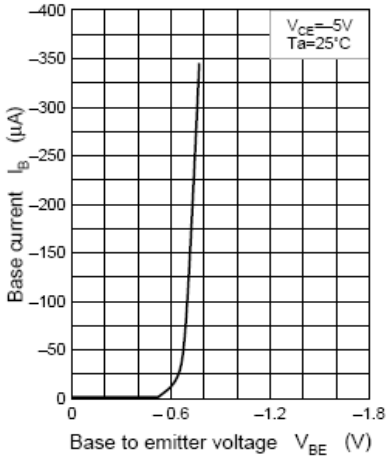
I_C — V_{CE}



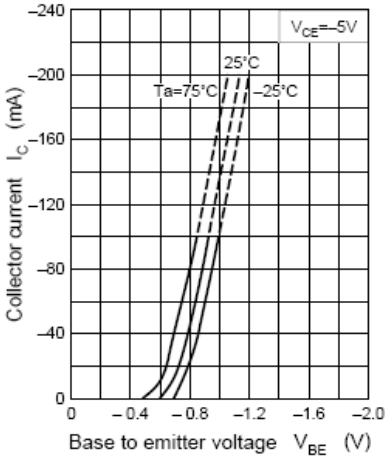
I_C — I_B



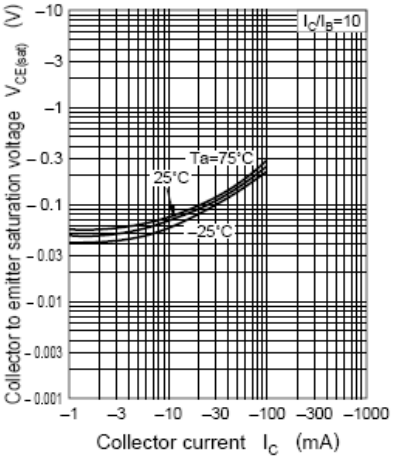
I_B — V_{BE}



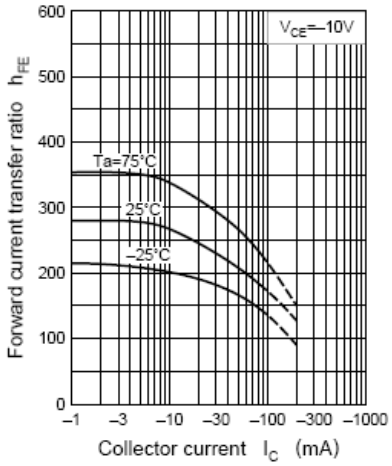
I_C — V_{BE}



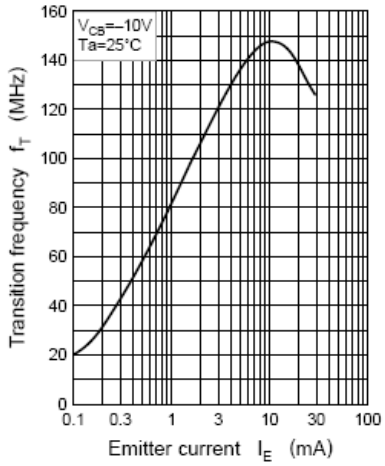
$V_{CE(sat)}$ — I_C



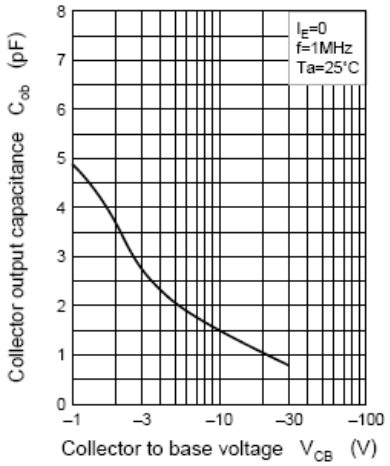
h_{FE} — I_C



f_T — I_E



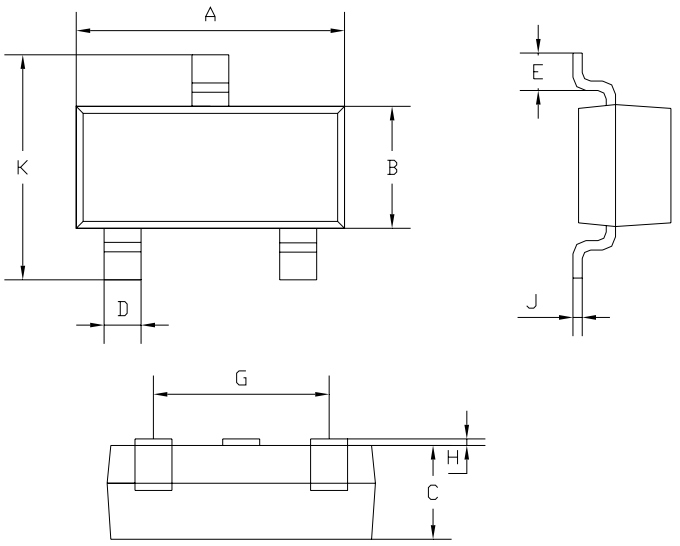
C_{ob} — V_{CB}



Silicon Epitaxial Planar Transistor **2SB709A**

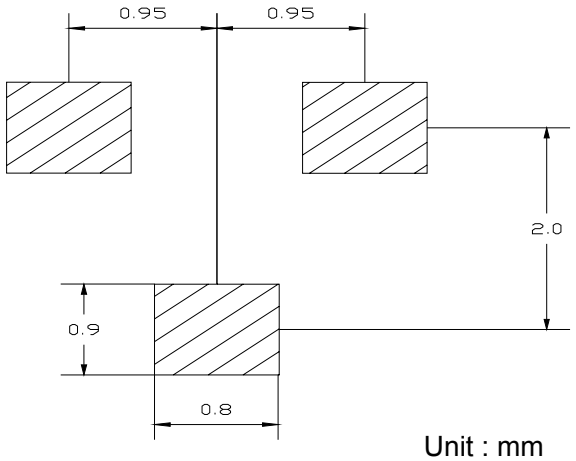
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0Typical	
D	0.37	0.43
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1Typical	
K	2.35	2.45
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
2SB709A	SOT-23	3000/Tape&Reel