

Silicon Epitaxial Planar Transistor

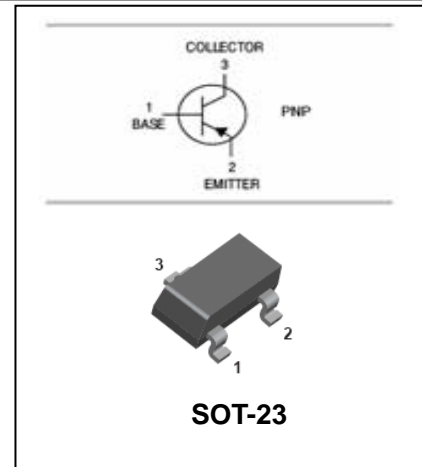
2SB709A

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



APPLICATIONS

- For general amplification complementary to 2SD601A

ORDERING INFORMATION

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

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ 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_C	Collector Current -Continuous	-200	mA
P_C	Collector Dissipation	200	mW
T_j, T_{stg}	Junction and Storage Temperature	-55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

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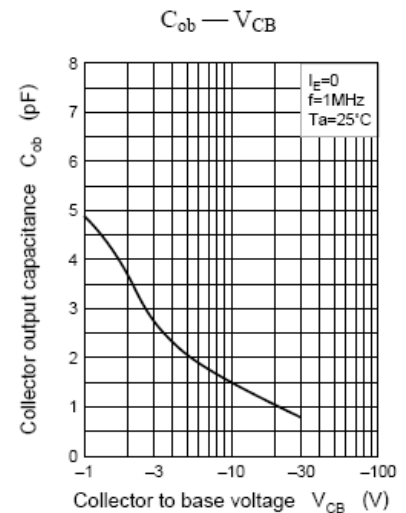
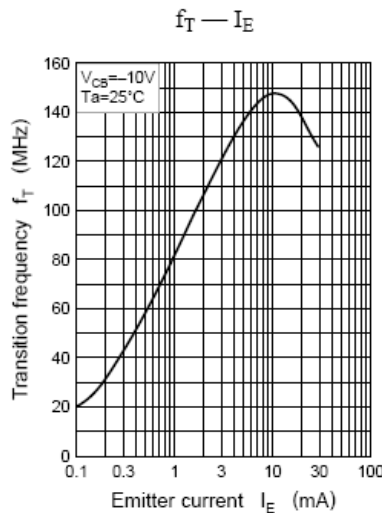
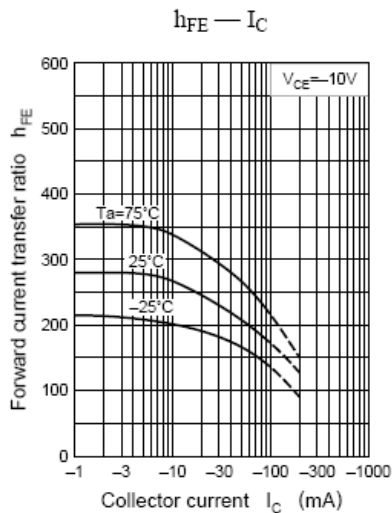
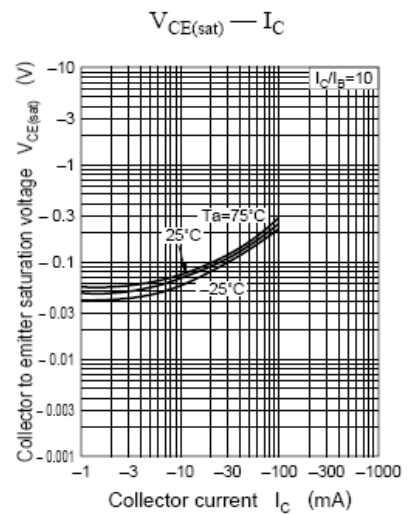
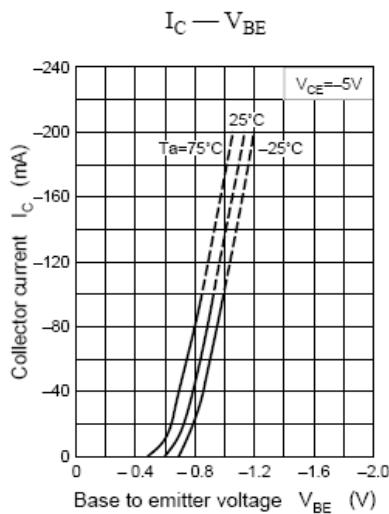
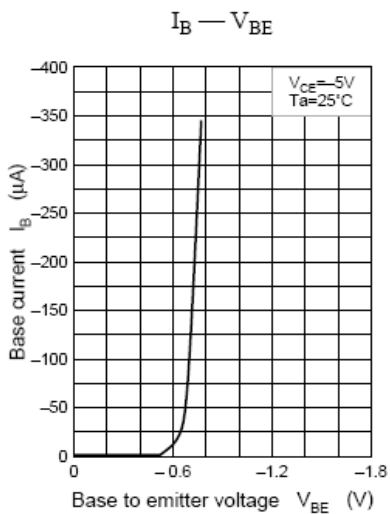
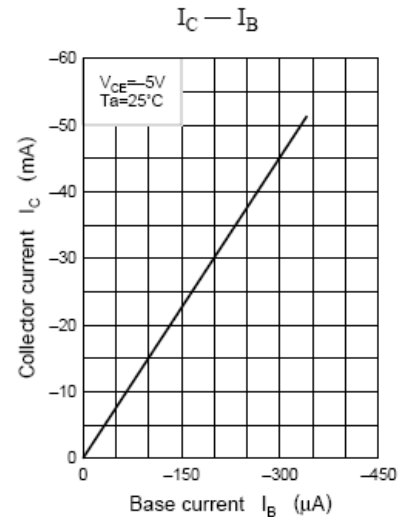
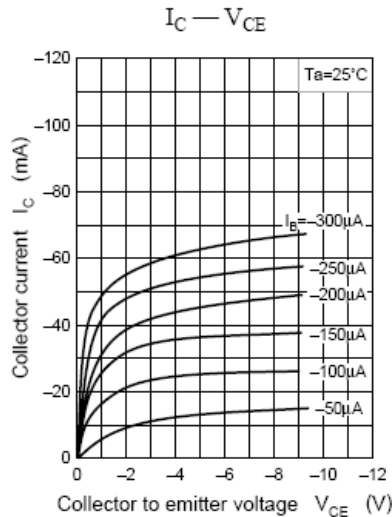
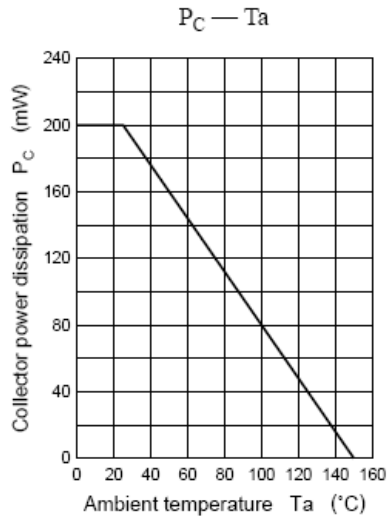
2SB709A

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-45			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -2mA, I_B = 0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-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	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$			-0.5	V
Transition frequency	f_T	$V_{CE} = -10V, I_C = -1mA$ $f = 200MHz$	60			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

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



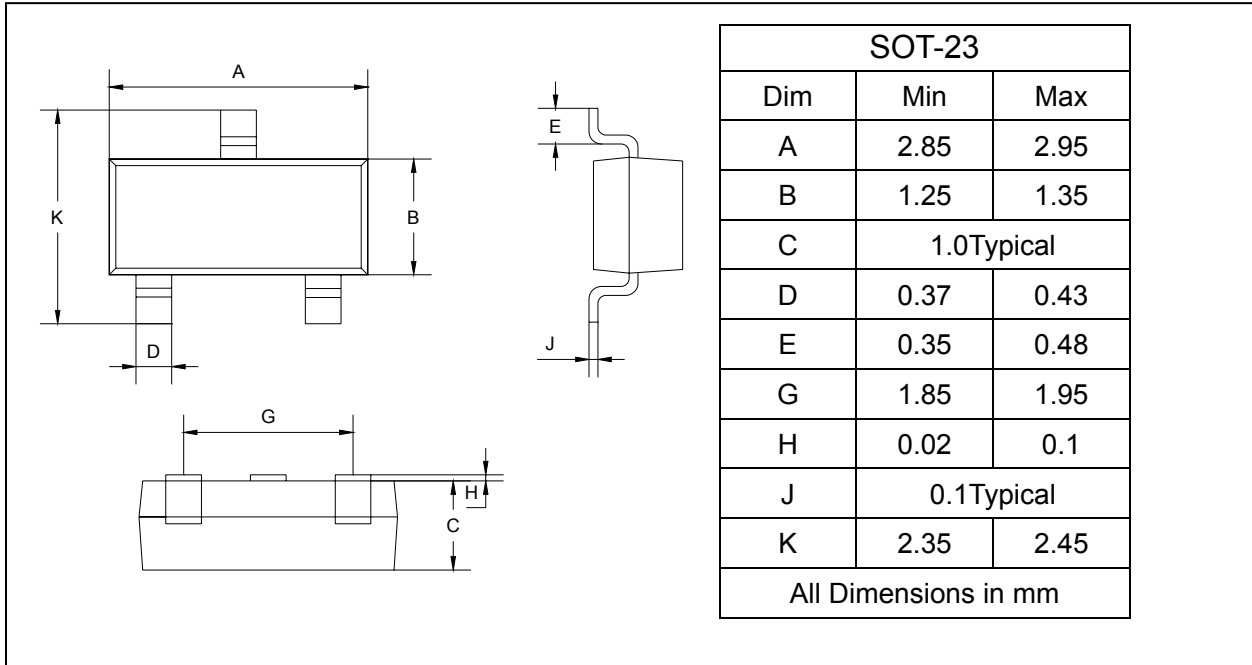
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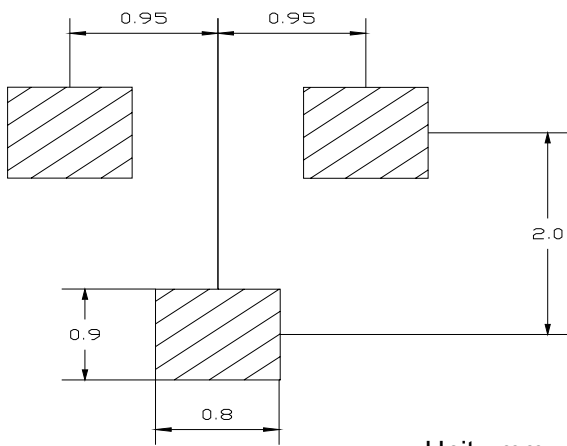
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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