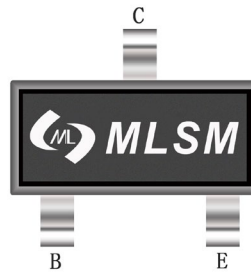
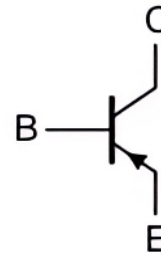


Features

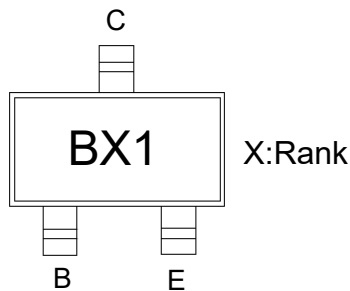
- For general amplification
- Complementary to 2SD601A.



SOT-23 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
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	-100	mA
P_C	Total Device Dissipation	200	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
2SB709A	SOT-23	BQ1/BR1/BS1	3,000	45,000	180,000	7" reel

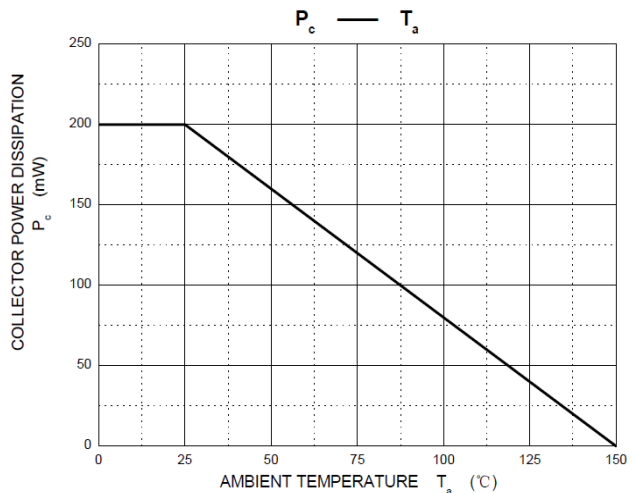
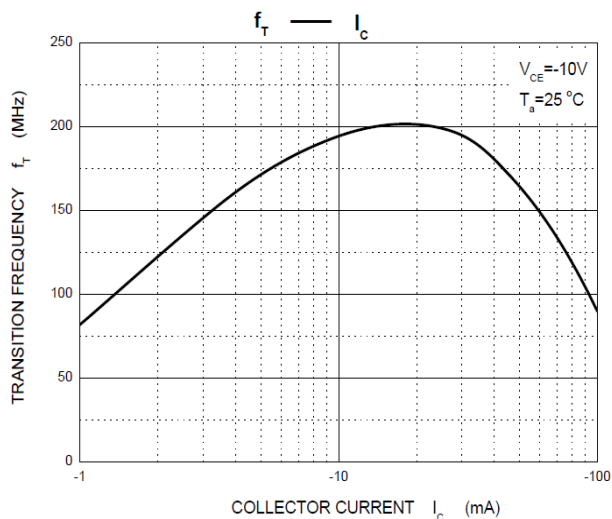
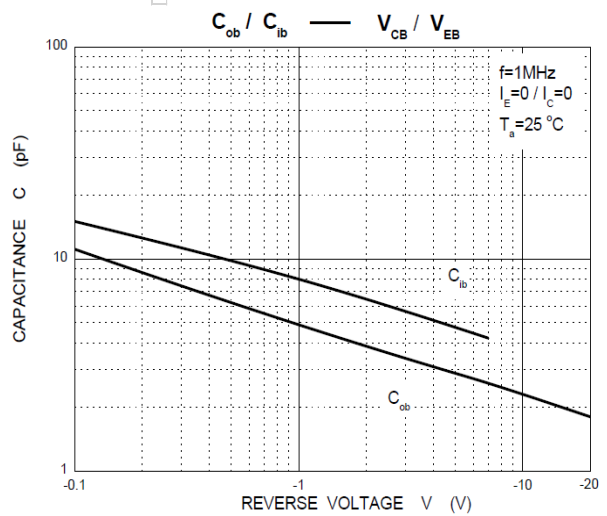
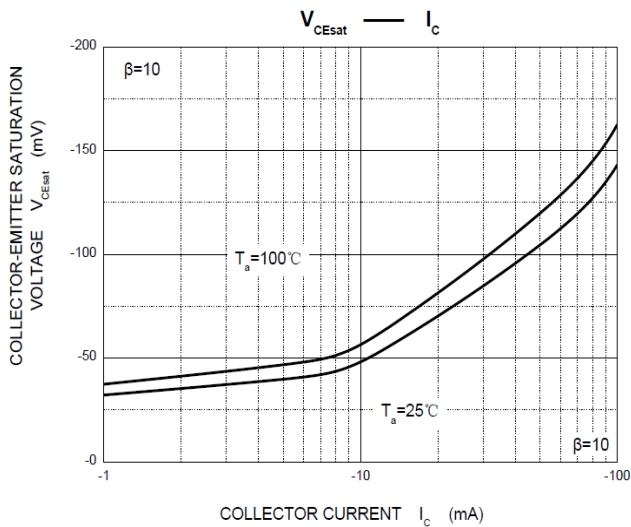
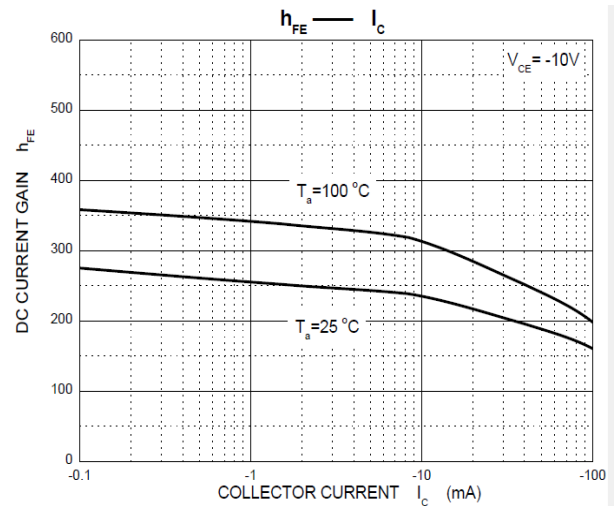
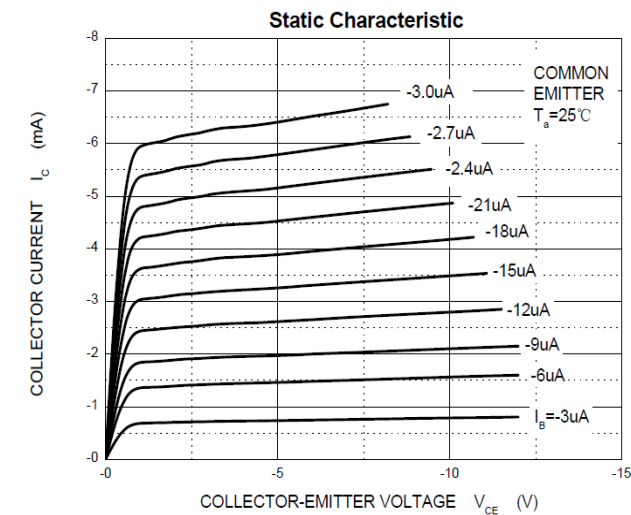
Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -10\mu A, I_E = 0$	-45	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = -2mA, I_B = 0$	-45	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -10\mu A, I_C = 0$	-7	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -20V, I_E = 0$	--	--	-0.1	μA
I_{CEO}	Collector cut-off current	$V_{CE} = -10V, I_B = 0$	--	--	-100	μA
H_{FE}	DC current gain	$V_{CE} = -10V, I_C = -2mA$	160	--	460	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C = -100mA, I_B = -10mA$	--	--	-0.5	V
C_{ob}	Collector output capacitance	$V_{CB} = -10V, I_E = 0, f = 1MHz$	--	--	2.7	pF
f_T	Transition frequency	$V_{CE} = -10V, I_C = -1mA, f = 200MHz$	60	--	--	MHz

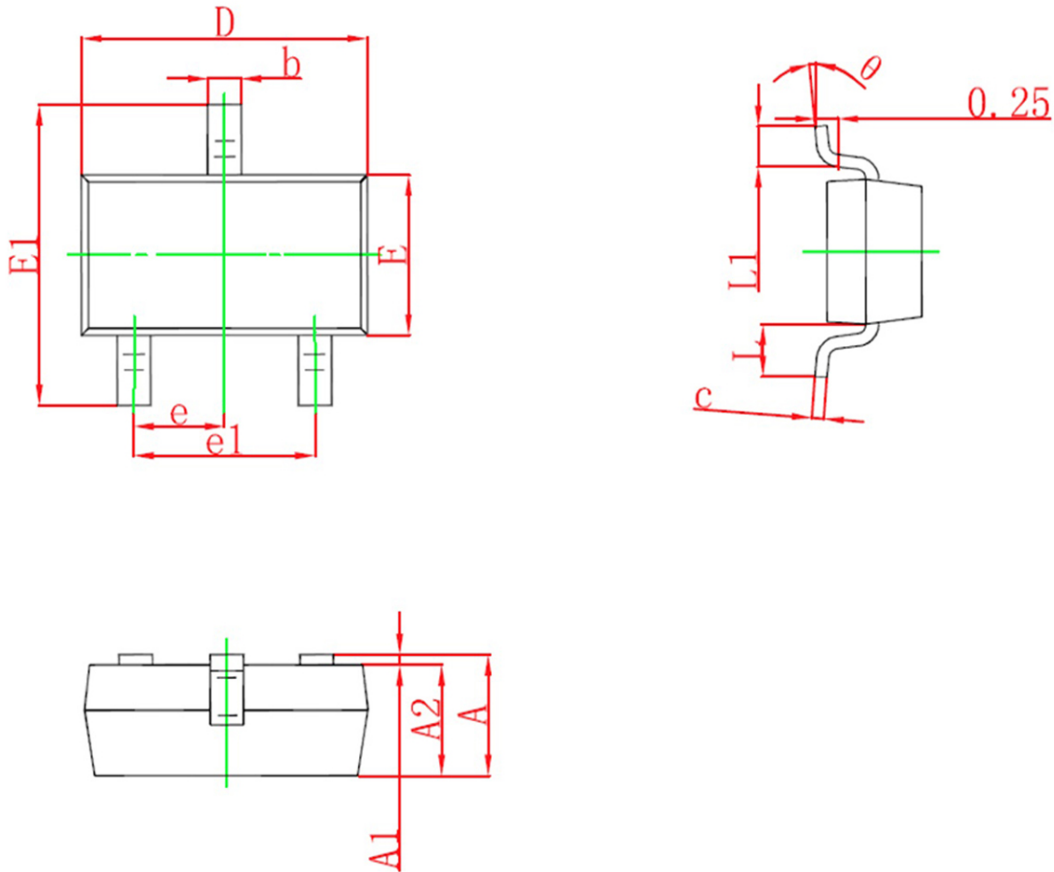
Classification of hFE

Rank	Q	R	S
Marking	BQ1	BR1	BS1
Range	160-260	210-340	290-360

Typical Operating Characteristics



SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°