

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead free

FEATURES

- For General Amplification
- Complementary of the 2SD601A

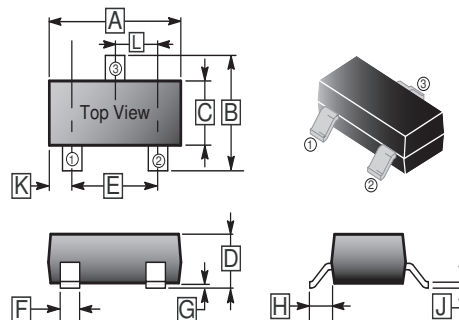
CLASSIFICATION OF h_{FE}

Product-Rank	2SB709A-Q	2SB709A-R	2SB709A-S
Range	160~260	210~340	290~460
Marking	BQ1	BR1	BS1

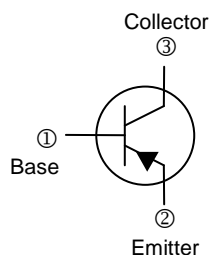
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7' inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	-45	V
Collector to Emitter Voltage	V_{CEO}	-45	
Emitter to Base Voltage	V_{EBO}	-7	
Collector Current -Continuous	I_C	-100	mA
Collector Power Dissipation	P_C	200	mW
Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-45	-	-	V	$I_C = -10\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45	-	-		$I_C = -2\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-7	-	-		$I_E = -10\mu\text{A}, I_C = 0$
Collector Cut-Off Current	I_{CBO}	-	-	-0.1	μA	$V_{CB} = -20\text{V}, I_E = 0$
Emitter Cut-Off Current	I_{CEO}	-	-	-100	μA	$V_{CE} = -10\text{V}, I_B = 0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	-0.5	V	$I_C = -100\text{mA}, I_B = -10\text{mA}$
DC Current Gain	h_{FE}	160	-	460		$V_{CE} = -10\text{V}, I_C = -2\text{mA}$
Transition Frequency	f_T	60	-	-	MHz	$V_{CE} = -10\text{V}, I_C = -1\text{mA}, f = 200\text{MHz}$
Collector Output Capacitance	C_{ob}	-	-	2.7	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$

CHARACTERISTIC CURVES

Static Characteristic

