

**SOT-23 BIPOLAR TRANSISTORS
TRANSISTOR(PNP)**

FEATURES

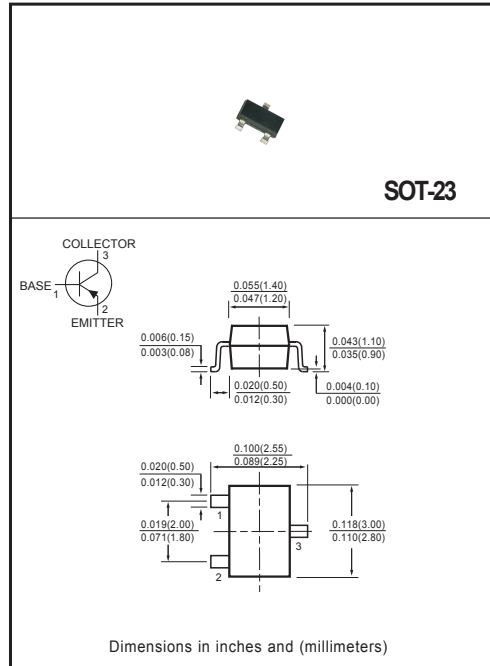
- * Power dissipation
PCM : 0.2 W(Tamb=25°C)

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V-O rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.008 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.



MAXIMUM RATINGS (@ TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	VALUE	UNITS
Collector-base voltage	V _{CB0}	-45	V
Collector-emitter voltage	V _{CE0}	-45	V
Emitter-base voltage	V _{EB0}	-7	V
Collector current-continuous	I _C	-200	mA
Junction and Storage temperature	T _J , T _{stg}	-55-150	°C

ELECTRICAL CHARACTERISTICS (@ TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN	MAX	UNITS
Collector-base breakdown voltage (I _C = -10μA, I _E =0)	V _{(BR)CBO}	-45	-	V
Collector-emitter breakdown voltage (I _C = -2mA, I _B =0)	V _{(BR)CEO}	-45	-	V
Emitter-base breakdown voltage (I _E = -10μA, I _C =0)	V _{(BR)EBO}	-7	-	V
Collector cut-off current (V _{CB} = -20V, I _E =0)	I _{CBO}	-	-0.1	μA
Emitter cut-off current (V _{CE} = -10V, I _B =0)	I _{CEO}	-	-100	μA
DC current gain (V _{CE} = -10V, I _C = -2mA)	h _{FE}	160	460	-
Collector-emitter saturation voltage (I _C = -100mA, I _B = -10mA)	V _{CE(sat)}	-	-0.5	V
Transition frequency (V _{CE} = -10V, I _C = -1mA, f= 200MHz)	f _T	60	-	MHz
Collector output capacitance (V _{CB} = -10V, I _E = 0, f= 1MHz)	C _{ob}	-	2.7	pF

CLASSIFICATION OF h_{FE}

RANK	Q	R	S
Range	160-260	210-340	290-460
Marking	BQ1	BR1	BS1

RATING AND CHARACTERISTICS CURVES (2SB709A)

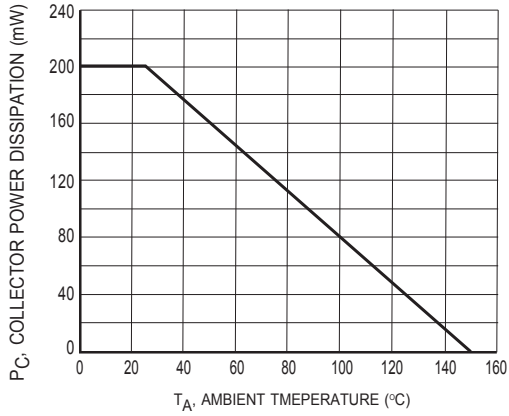


Figure1 P_C - T_A

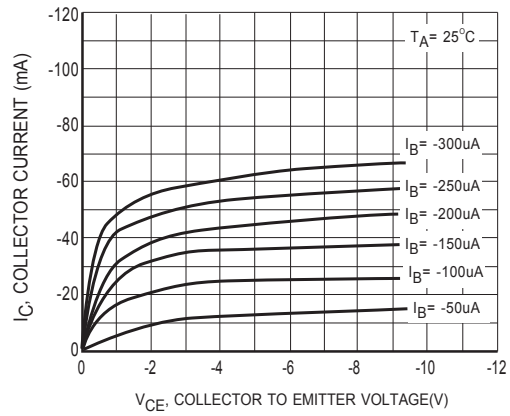


Figure2 I_C - V_{CE}

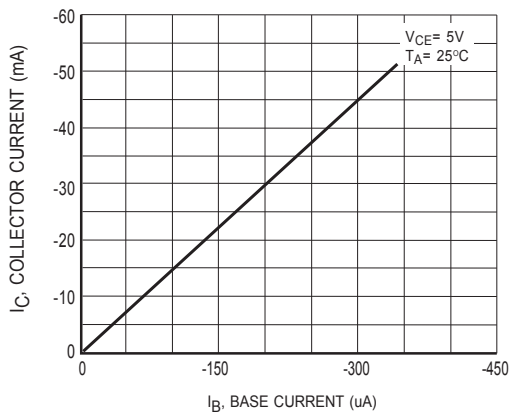


Figure3 I_C - I_B

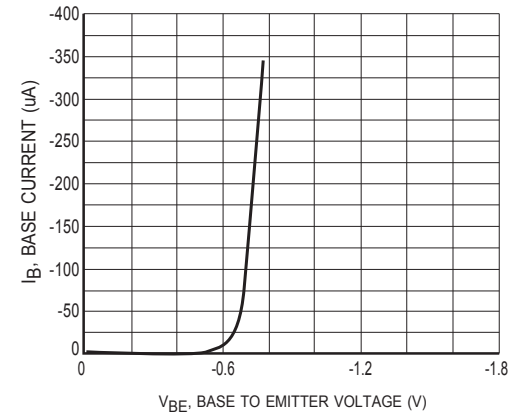


Figure4 I_B - V_{BE}

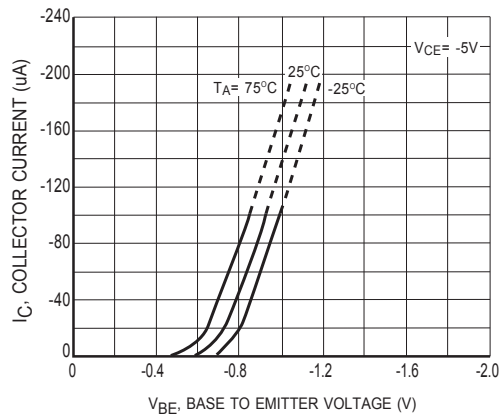


Figure5 I_C - V_{BE}

RATING AND CHARACTERISTICS CURVES (2SB709A)

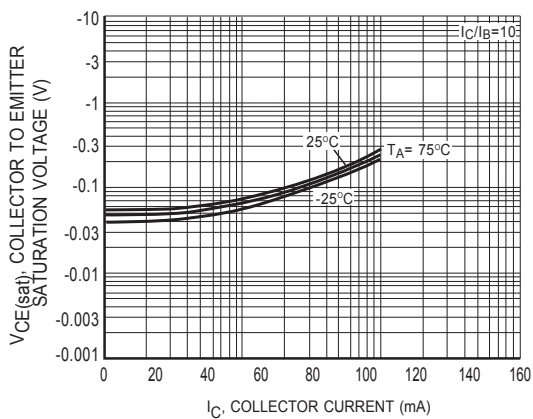


Figure6 $V_{CE(sat)}-I_C$

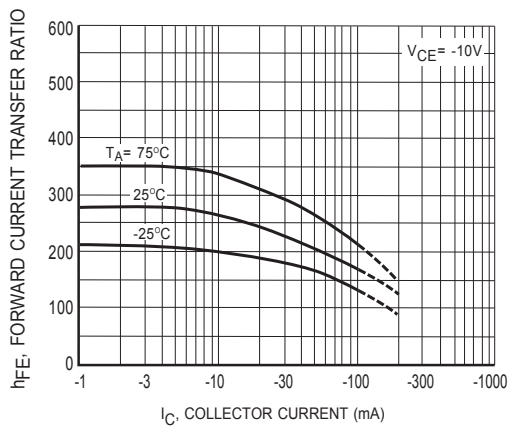


Figure7 $h_{FE}-I_C$

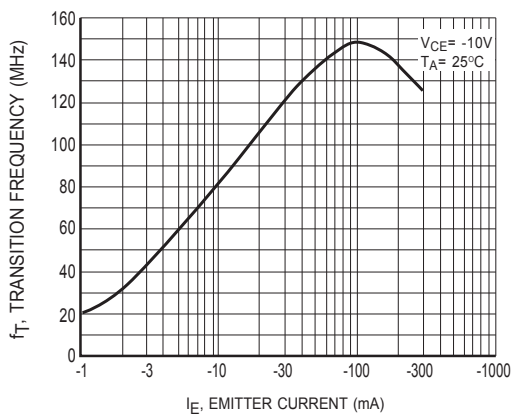


Figure8 f_T-I_E

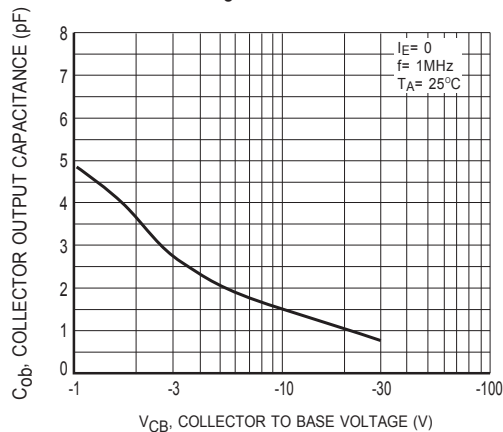


Figure9 $C_{ob}-V_{CB}$

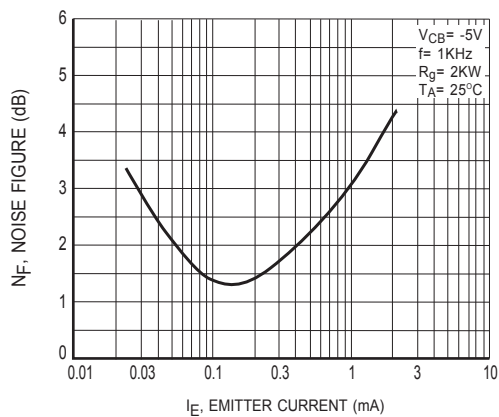


Figure10 N_F-I_E

RATING AND CHARACTERISTICS CURVES (2SB709A)

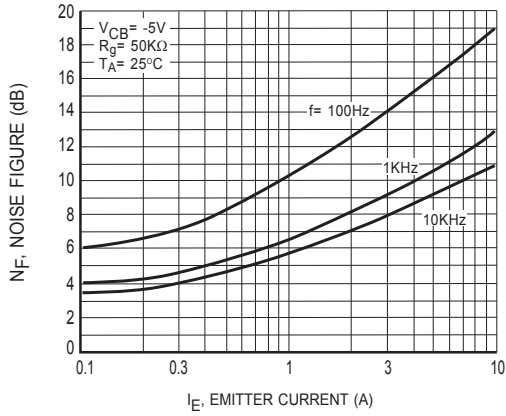


Figure11 NF- I_E

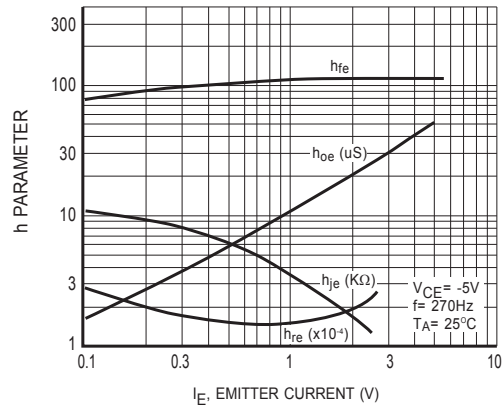


Figure12 h PARAMETER- I_E

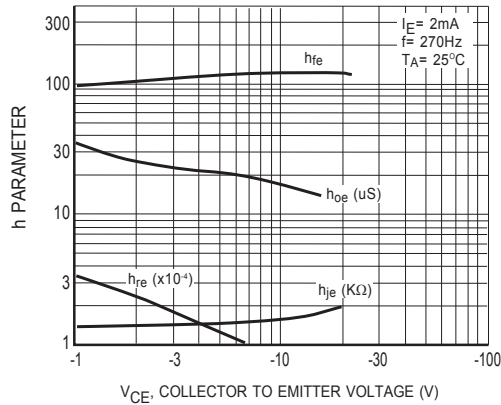


Figure13 h PARAMETER- V_{CE}

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