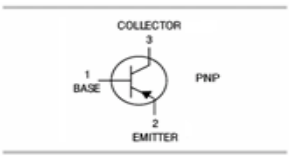
PNP Silicon Epitaxial Planar Transistor

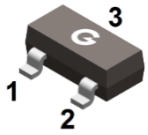
2SA812

Features

HF

- Excellent h_{FE} Linearity
- High Voltage
- Complementary to 2SC1623





SOT-23

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SA812	SOT-23	3000 pcs / Tape & Reel	M4/M5/M6/M7

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-60	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-50	V
Emitter-Base Breakdown Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-100	mA
Peak Collector Current	I_{CM}	-200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation(T_A = 25°C)	P_D	200	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	290	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	190	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	210	°C/W
Junction Temperature Range	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = -100μA, I_E = 0	-60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -1mA, I_B = 0	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -100μA, I_C = 0	-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -60V, I_E = 0	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = -5V, I_C = 0	-	-	-0.1	μA
DC Current Gain	h_{FE}	V_{CE} = -6V, I_C = -1mA	90	200	600	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -100mA, I_B = -10mA	-	-0.18	-0.3	V
Base-emitter Voltage	$V_{BE(on)}$	I_C = -1mA, V_{CE} = -6V	-0.58	-0.62	-0.68	V
Transition Frequency	f_T	I_C = -10mA, V_{CE} = -6V	-	180	-	MHz
Output Capacitance	C_{ob}	V_{CB} = -10V , I_E = 0A , f = 1MHz	-	2.1	-	pF

Classification of h_{FE}

Range	M4	M5	M6	M7
Marking	90-180	135-270	200-400	300-600

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

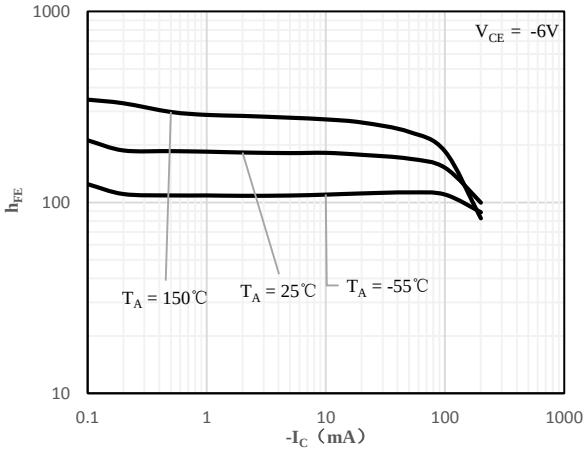


Fig 1 h_{FE} vs. I_C

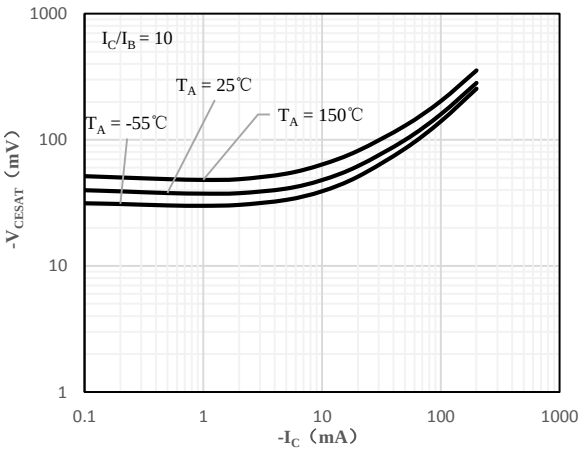


Fig 2 $V_{CE(sat)}$ vs. I_C

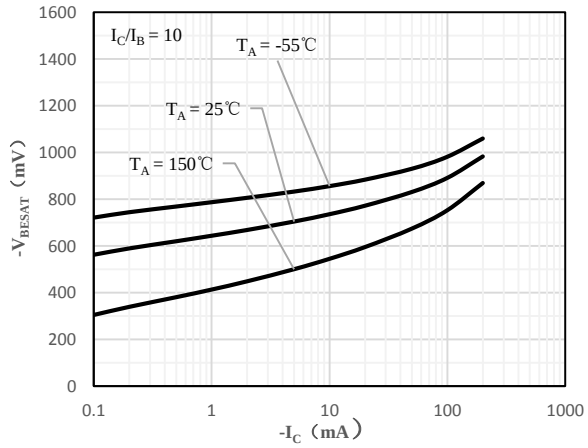


Fig 3 $V_{BE(sat)}$ vs. I_C

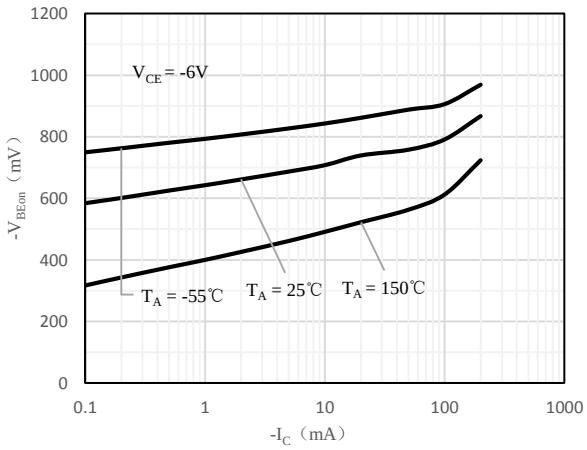


Fig 4 $V_{BE(ON)}$ vs. I_C

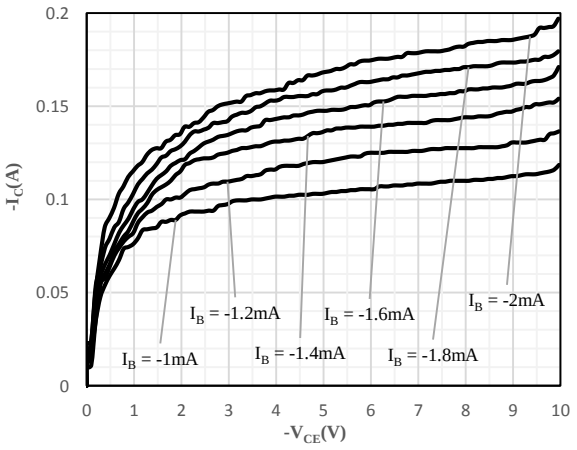


Fig 5 I_C vs. V_{CE}

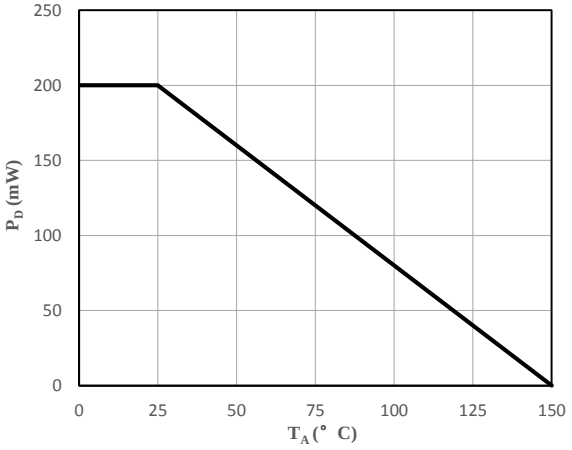


Fig 6 P_D vs. T_A

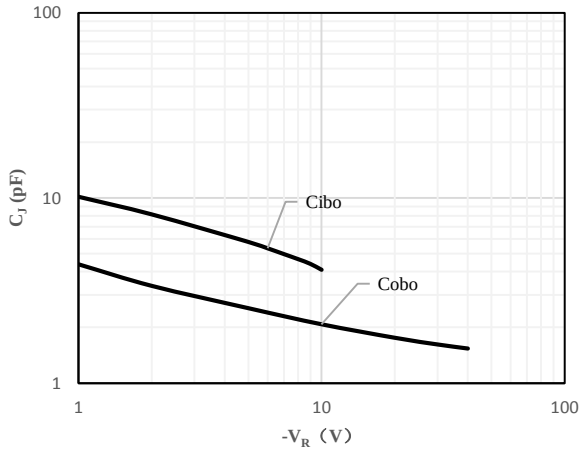
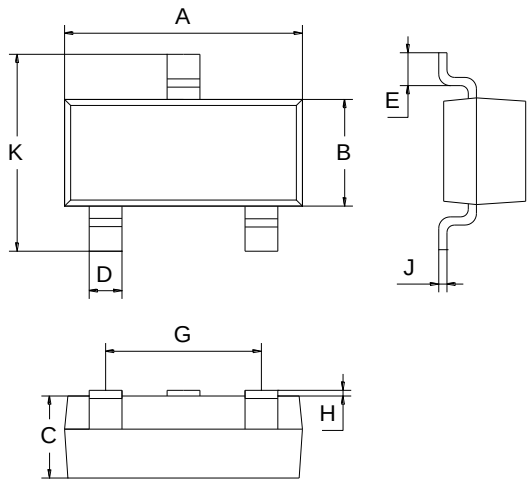


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	**Min.**	**Max.**
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

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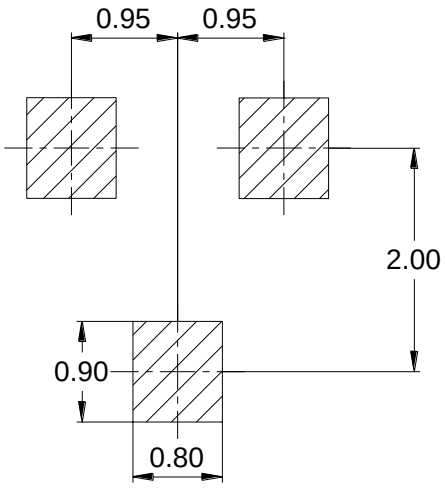

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