

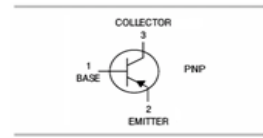
Features

- Small collector to emitter saturation voltage
- Excellent DC forward current gain
- RoHS compliant with Halogen-free

HF

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
2SA1235A-E	SOT-23	3000 pcs / Tape & Reel	ME
2SA1235A-F	SOT-23	3000 pcs / Tape & Reel	MF
2SA1235A-G	SOT-23	3000 pcs / Tape & Reel	MG

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	-50	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-50	V
Emitter-Base Breakdown Voltage	V _{EBO}	-6	V
Collector Current (Continuous)	I _C	-0.2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	0.15	W
Thermal Resistance Junction-to-Air	R _{θJA}	833	°C/W
Power Dissipation *1	P _D	0.45	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	280	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	190	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	210	°C/W
Junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}, I_E = 0$	-50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, I_B = 0$	-50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -100\mu\text{A}, I_C = 0$	-6	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$	-	-	-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$	150	-	800	-
		$V_{CE} = -6\text{V}, I_C = -0.1\text{mA}$	90	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$	-	-	-0.3	V
Current-Gain—Bandwidth Product	f_T	$V_{CE} = -6\text{V}, I_C = -10\text{mA}$	-	200	-	MHz
Collector output capacitance	C_{ob}	$V_{CB} = -6\text{V}, I_E = 0, f = 1\text{MHz}$	-	2.5	-	pF
Noise Figure	N_F	$V_{CE} = -6\text{V}, I_E = 0.3\text{mA}$ $f = 100\text{MHz}, R_G = 10\text{k}\Omega$	-	-	20	dB

Classification of h_{FE}

Rank	E	F	G
Range	150-300	250-500	400-800
Marking	ME	MF	MG

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

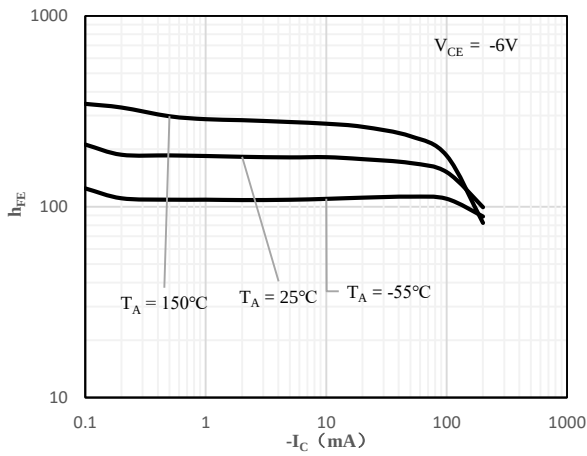


Fig 1 h_{FE} vs. I_C

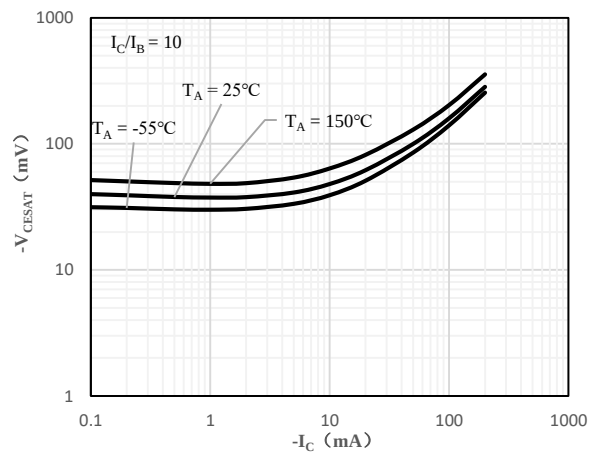


Fig 2 $V_{CE(sat)}$ vs. I_C

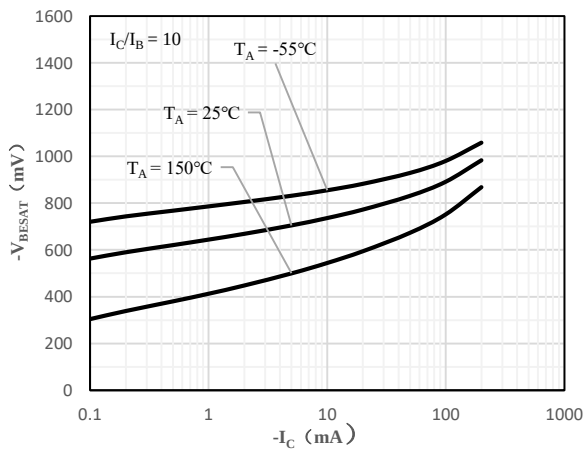


Fig 3 $V_{BE(sat)}$ vs. I_C

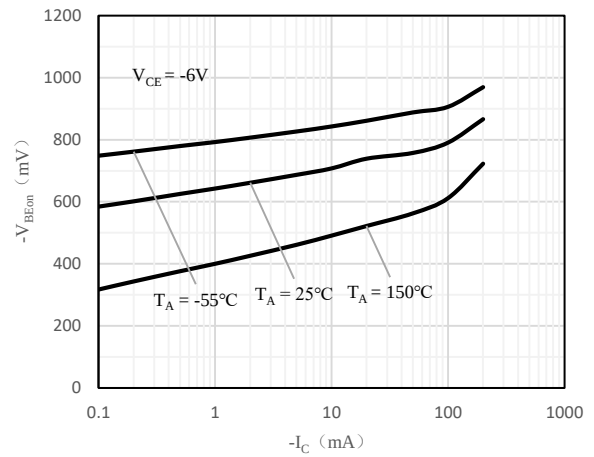


Fig 4 $V_{BE(on)}$ vs. I_C

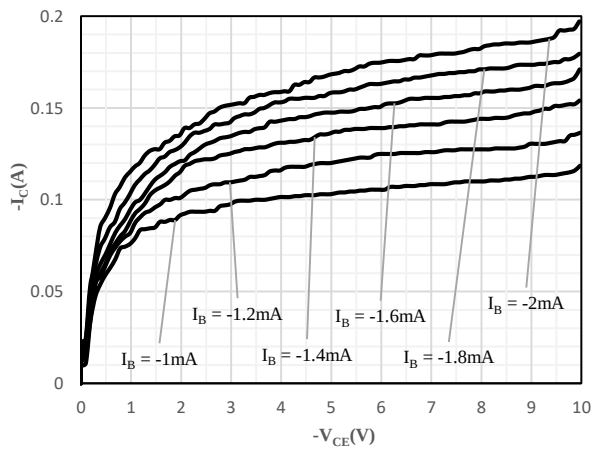


Fig 5 I_C vs. V_{CE}

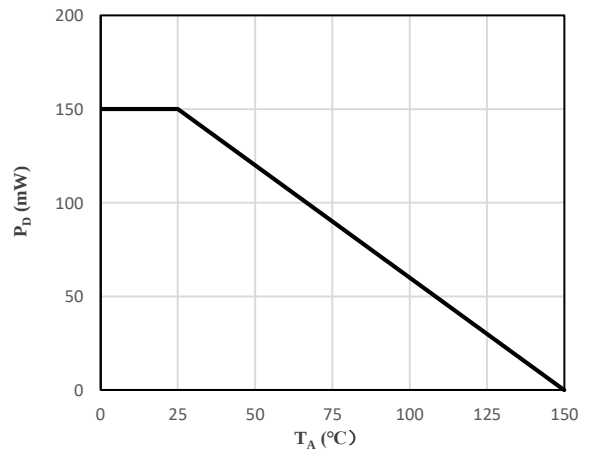


Fig 6 P_D vs. T_A

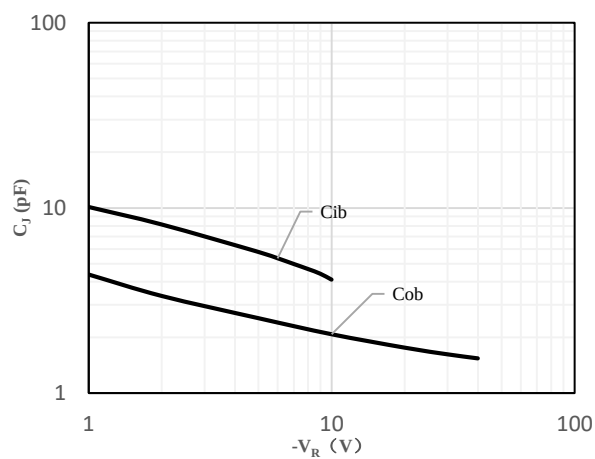
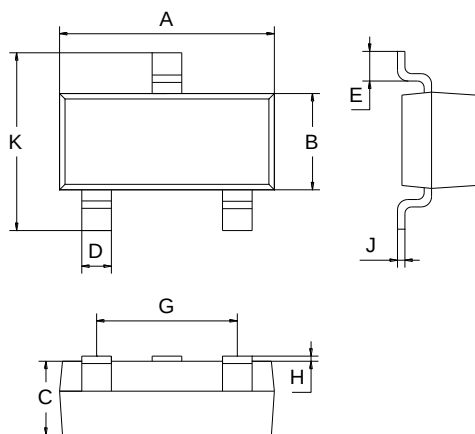


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

