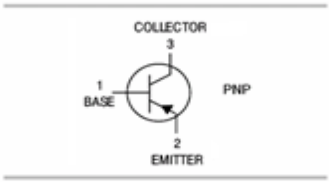
PNP Silicon Epitaxial Planar Transistor

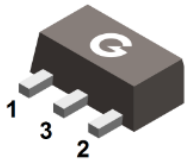
2SA1661

Features

HF

- High voltage
- High transistion frequency
- Small flat package
- RoHS compliant with Halogen-free





SOT-89

Mechanical Data

- Case: SOT-89
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SA1661-O	SOT-89	1000 pcs / Tape & Reel	DO
2SA1661-Y	SOT-89	1000 pcs / Tape & Reel	DY

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	-120	V
Collector-Emitter Breakdown Voltage	V_{CEO}	-120	V
Emitter-Base Breakdown Voltage	V_{EBO}	-5	V
Continuous Collector Current	I_C	-0.8	A
Peak Collector Current	I_{CM}	-1.5	A
Continuous Base Current	I_B	-0.16	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	0.5	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	50	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	15	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	11	°C/W
Operating 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 $inch^2$ 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 = -1mA, I_E = 0	-120	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0	-120	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -1mA, I_C = 0	-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -120V, 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} = -5V, I_C = -100mA	80	-	240	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -500mA, I_B = -50mA	-	-	-1	V
Base-Emitter Voltage	$V_{BE(on)}$	I_C = -500mA, V_{CE} = -5V	-	-	-1	V
Transition Frequency	f_T	I_C = -100mA, V_{CE} = -5V	-	120	-	MHz
Collector Output Capacitance	C_{OBO}	V_{CB} = -10V, I_E = 0, f = 1MHZ	-	-	30	pF

Classification of h_{FE}

Rank	O	Y
Range	80 ~ 160	120 ~ 240
Marking	DO	DY

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

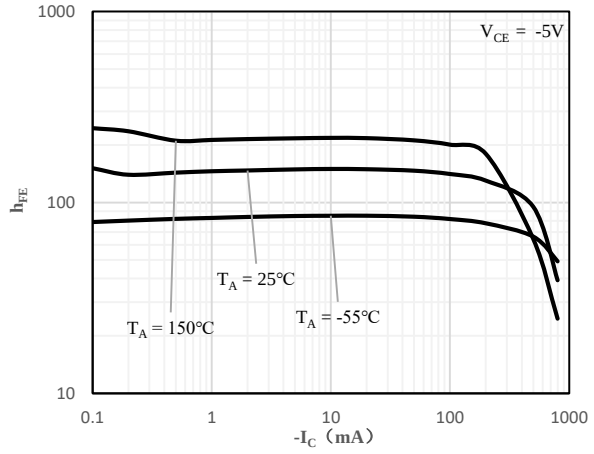


Fig 1 h_{FE} vs. I_C

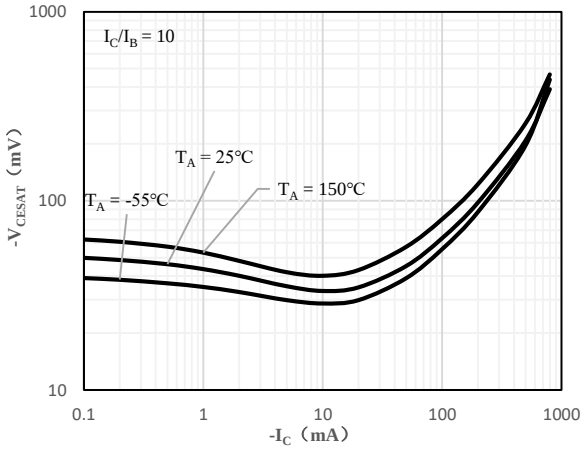


Fig 2 $V_{CE(sat)}$ vs. I_C

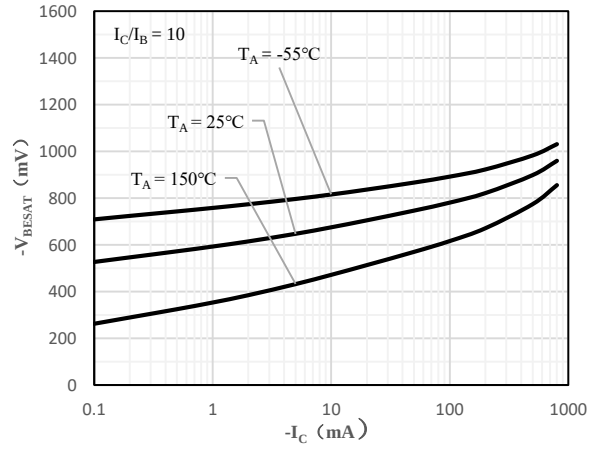


Fig 3 $V_{BE(sat)}$ vs. I_C

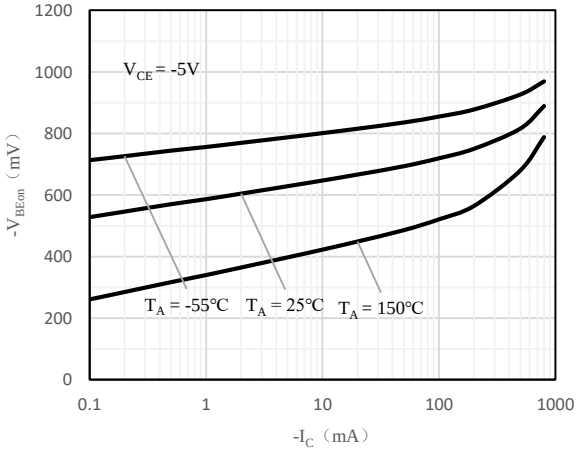


Fig 4 $V_{BE(ON)}$ vs. I_C

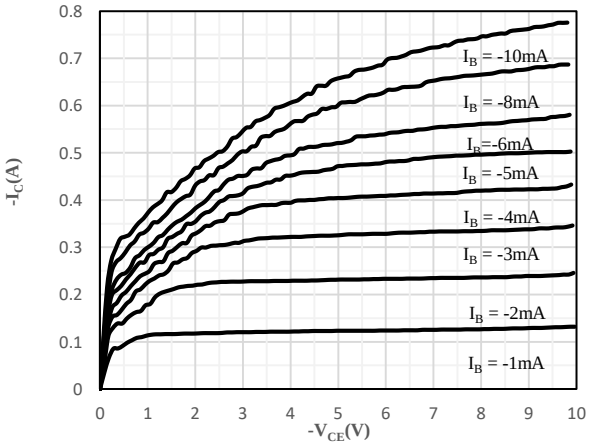


Fig 5 I_C vs. V_{CE}

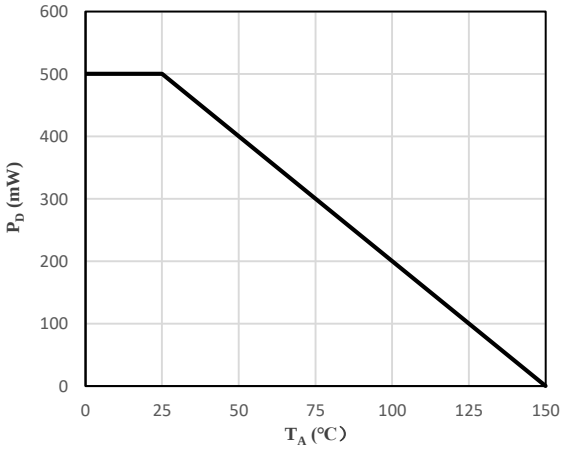
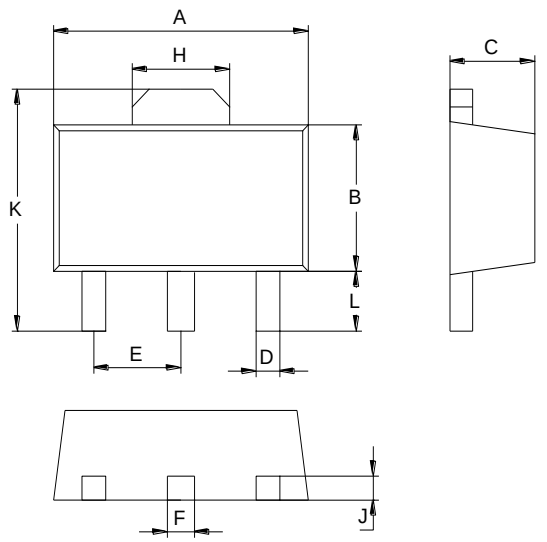
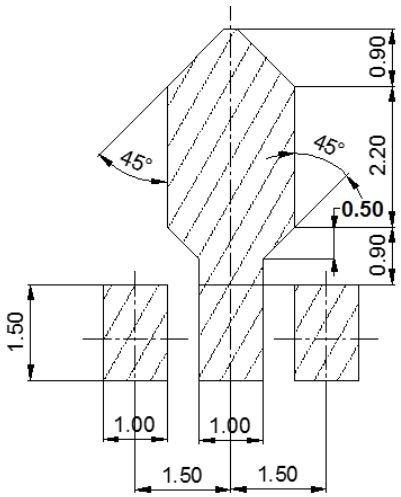


Fig 6 P_D vs. T_A

Package Outline Dimensions (Unit: mm)



SOT-89		
Dimension	**Min.**	**Max.**
A	4.30	4.70
B	2.25	2.65
C	1.30	1.70
D	0.30	0.50
E	1.40	1.60
F	0.38	0.58
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.95	4.35

Mounting Pad Layout (Unit: mm)

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