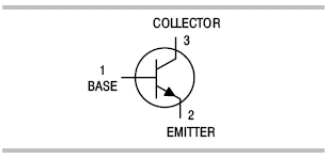
SS8050

SOT-89 Bipolar Transistor(NPN)

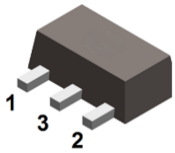
Features

- High DC current gain
- Complimentary to SS8550



Mechanical Data

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



SOT-89

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
SS8050	SOT-89	1000 pcs / Tape & Reel	Y1

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V_{CBO}	40	V
Collector-Emitter Breakdown Voltage	V_{CEO}	25	V
Emitter-Base Breakdown Voltage	V_{EBO}	6	V
Collector Current (Continuous)	I_C	1.5	A
Collector Current (Peak)	I_{CM}	2	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C) *1	P_D	0.5	W
Power Dissipation (T_A = 25°C, based on $R_{\theta JA}$ (Typ.) = 175°C/W)	P_D	0.7	W
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	250	°C/W
Operating 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 minimum recommended FR-4 board

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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	40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 2mA, I_B = 0	25	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 35V, I_E = 0	-	-	0.1	μA
Collector Cut-off Current	I_{CEO}	V_{CE} = 20V, I_B = 0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 6V, I_C = 0	-	-	0.1	μA
DC Current Gain	h_{FE}	V_{CE} = 1V, I_C = 0.1A	120	-	400	-
		V_{CE} = 1V, I_C = 0.8A	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 0.8A, I_B = 0.08A	-	0.28	0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 0.8A, I_B = 0.08A	-	0.98	1.2	V
Base-emitter on Voltage	$V_{BE(on)}$	V_{CE} = 1V, I_C = 10mA	-	0.66	1	V
Transition Frequency	f_T	I_C = 50mA, V_{CE} = 10V	100	-	-	MHz
Collector Output Capacitance	C_{OB}	V_{CB} = 10V, I_E = 0, f = 1MHZ	-	15	-	pF

Classification of h_{FE}

Rank	L	H	J
Range	120-200	200-350	300-400

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

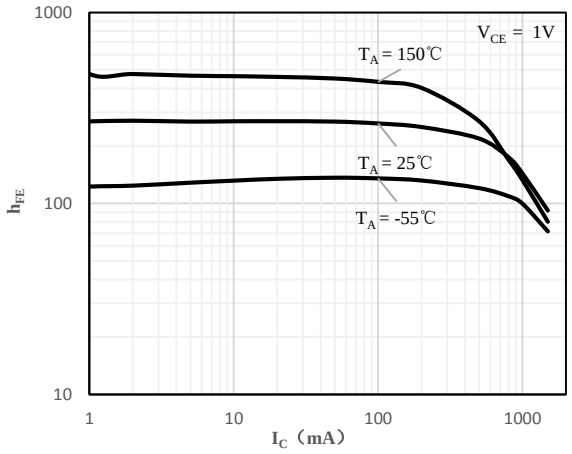

Fig 1 h_{FE} vs. I_C (H)

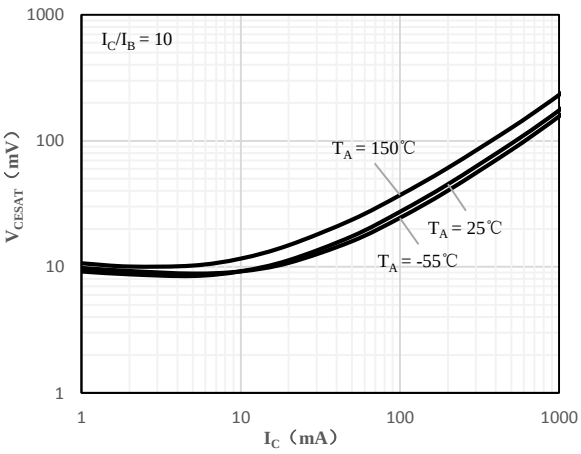

Fig 2 $V_{CE(sat)}$ vs. I_C

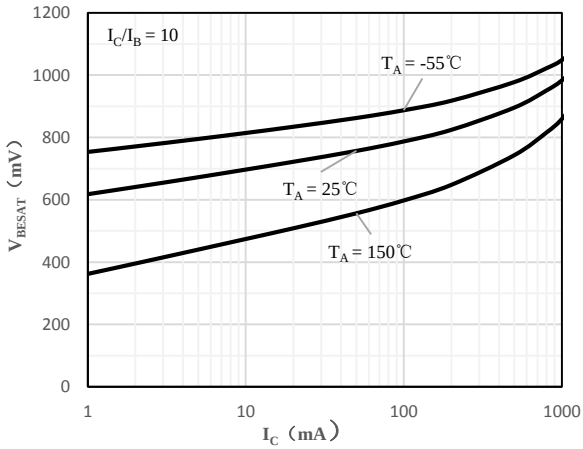

Fig 3 $V_{BE(sat)}$ vs. I_C

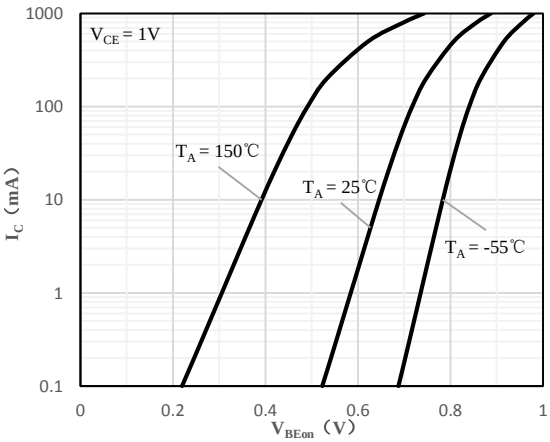

Fig 4 $V_{BE(ON)}$ vs. I_C

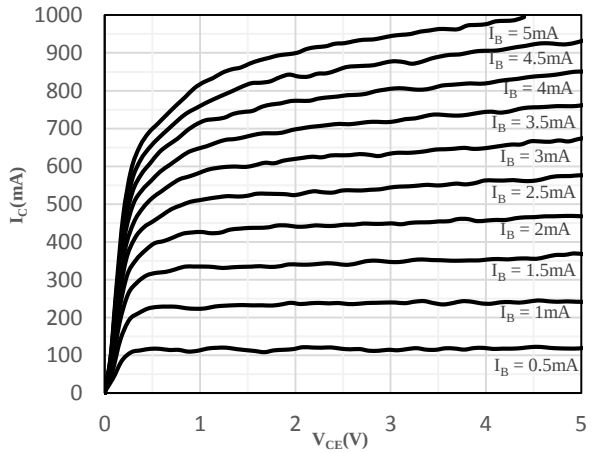

Fig 5 I_C vs. V_{CE}

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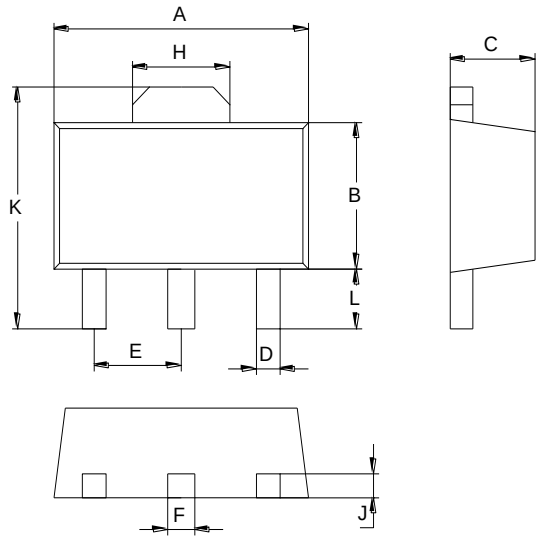
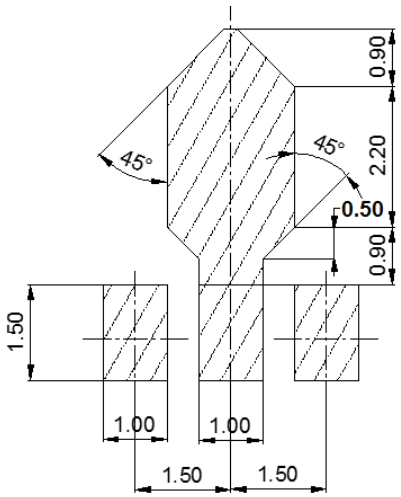
Package Outline Dimensions (Unit: mm)



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(SOT-89)(Unit: mm)



Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOT -89	1000pcs	7inch	10,000pcs	203×203×195	40,000pcs	438×438×220