

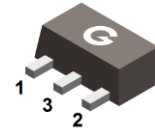
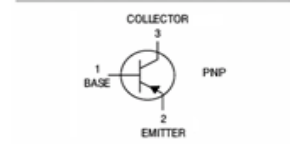
Features

- High collector to emitter voltage
- RoHS compliant with Halogen-free

HF

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
2SB806-R	SOT-89	1000 pcs / Tape & Reel	KR
2SB806-Q	SOT-89	1000 pcs / Tape & Reel	KQ
2SB806-P	SOT-89	1000 pcs / Tape & Reel	KP

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	-0.7	A
Peak Collector Current	I _{CM}	-1.4	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	0.5	W
Power Dissipation *1		2	W
Thermal Resistance Junction-to-Air *1	R _{θJA}	60	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	20	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	15	°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 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	$V_{(BR)CBO}$	$I_C = -10\text{mA}, I_E = 0$	-120	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-120	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -0.1\text{mA}, I_C = 0$	-5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -120\text{V}, I_E = 0$	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-	-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = -1\text{V}, I_C = -5\text{mA}$	45	-	-	-
		$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	90	-	400	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-0.4	-0.6	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-0.9	-1.5	V
Base-Emitter Voltage	$V_{BE(on)}$	$I_C = -10\text{mA}, V_{CE} = -10\text{V}$	-0.55	-0.62	-0.65	V
Transition Frequency	f_T	$I_C = -10\text{mA}, V_{CE} = -10\text{V}$	-	75	-	MHz
Collector Output Capacitance	C_{OBO}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	14	-	pF

Classification of h_{FE}

Rank	R	Q	P
Range	90 ~ 180	135 ~ 270	200 ~ 400
Marking	KR	KQ	KP

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

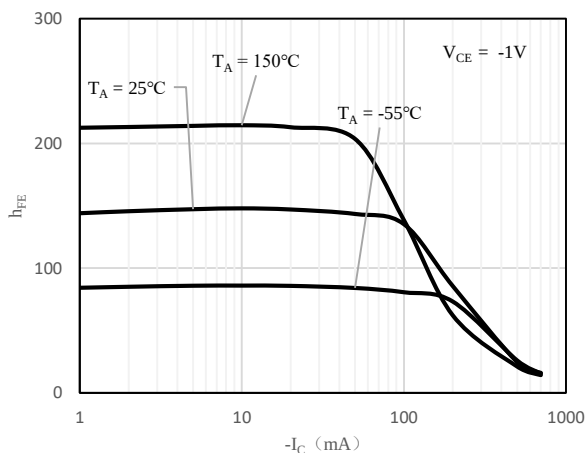


Fig 1 h_{FE} vs. I_C

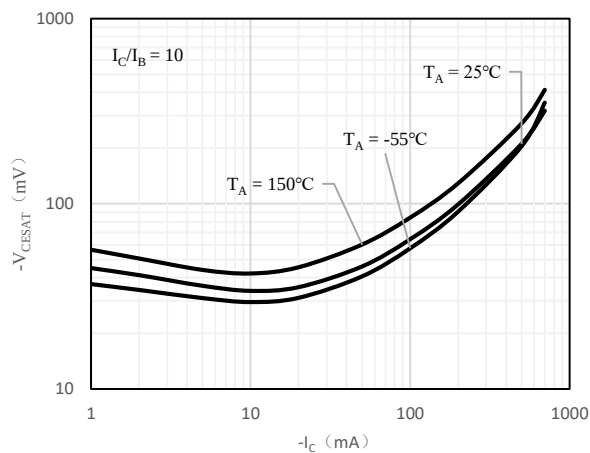


Fig 2 $V_{CE(sat)}$ vs. I_C

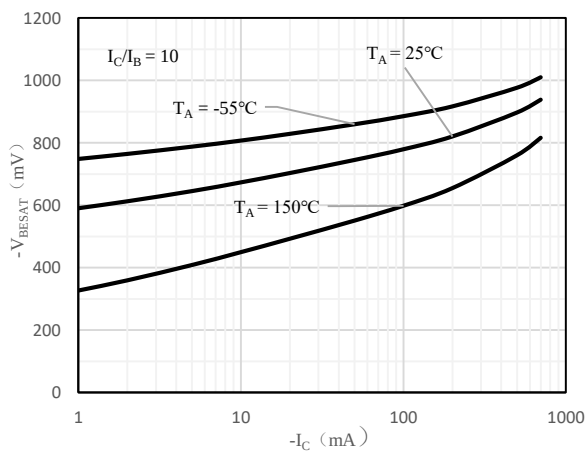


Fig 3 $V_{BE(sat)}$ vs. I_C

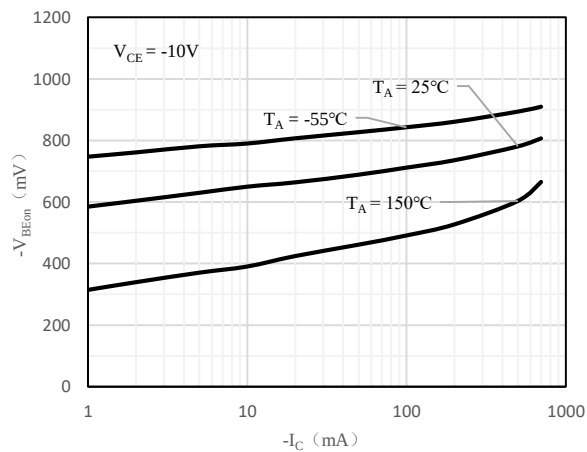


Fig 4 $V_{BE(on)}$ vs. I_C

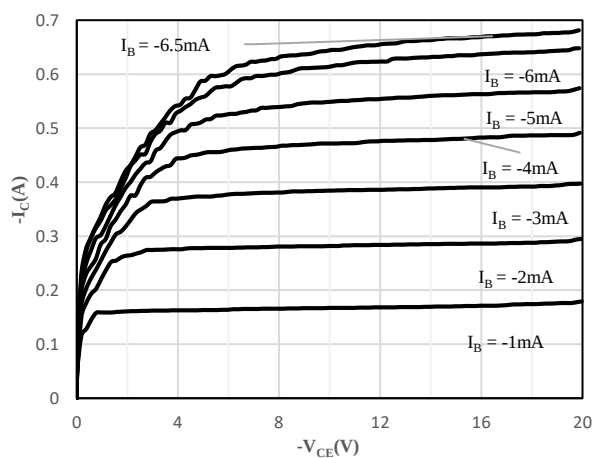


Fig 5 I_C vs. V_{CE}

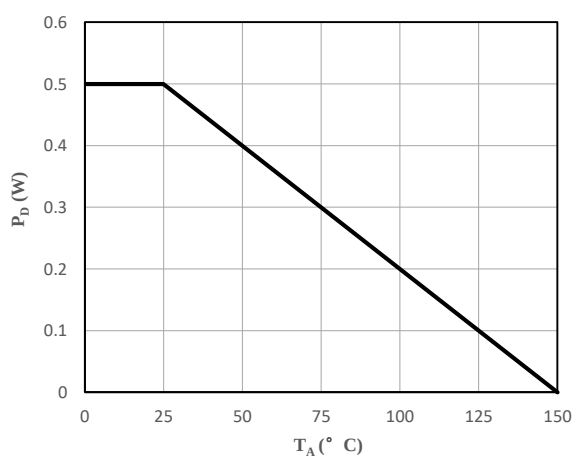


Fig 6 P_D vs. T_A

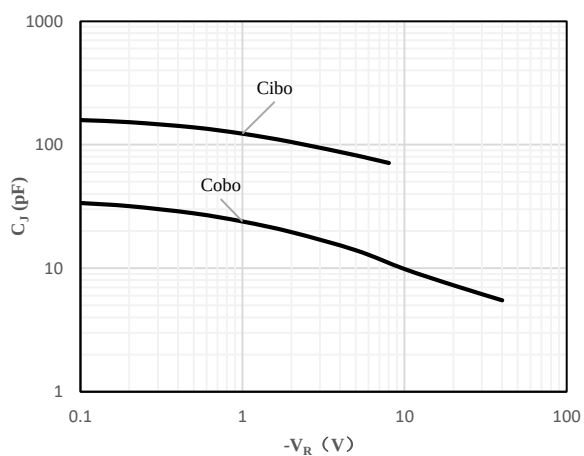
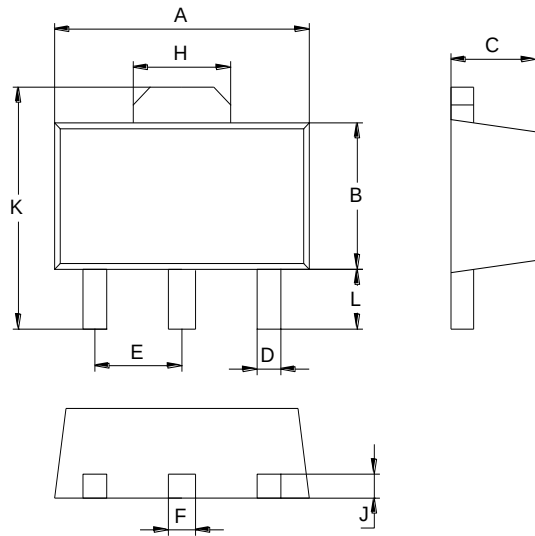


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



SOT-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)

SOT-89

