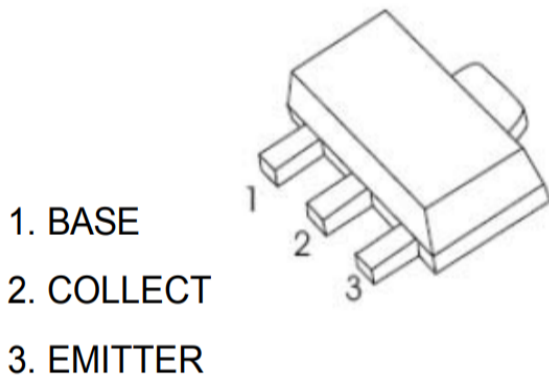


Features

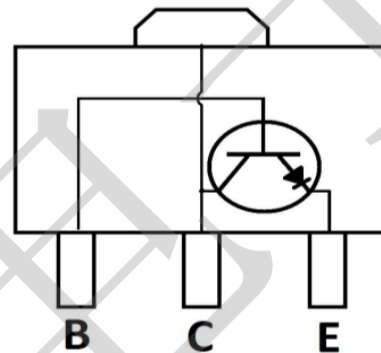
- RoHS compliant with Halogen-free

Mechanical Data

- Case: SOT-89



SOT-89



Maximum Ratings (@ $T_A = 25^\circ\text{C}$ 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 ($T_A = 25^\circ\text{C}$)	P_D	0.5	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	250	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	40	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 0.1\text{mA}, I_B = 0$	25	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 40\text{V}, I_E = 0$	-	-	0.1	μA
Collector Cut-off Current	I_{CEO}	$V_{CE} = 20\text{V}, I_B = 0$	-	-	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}	$V_{CE} = 1\text{V}, I_C = 0.1\text{A}$	85	-	400	-
		$V_{CE} = 1\text{V}, I_C = 0.8\text{A}$	40	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 0.8\text{A}, I_B = 0.08\text{A}$	-	-	0.5	V
Base-emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 0.8\text{A}, I_B = 0.08\text{A}$	-	-	1.2	V
Base-emitter on Voltage	$V_{BE(on)}$	$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	-	-	1	V
Transition Frequency	f_T	$I_C = 50\text{mA}, V_{CE} = 10\text{V}$ $f = 30\text{MHz}$	100	-	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	-	15	pF

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

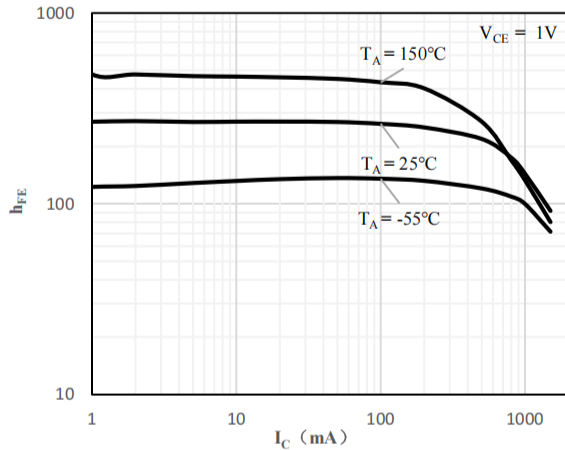


Fig 1 h_{FE} vs. I_C (H)

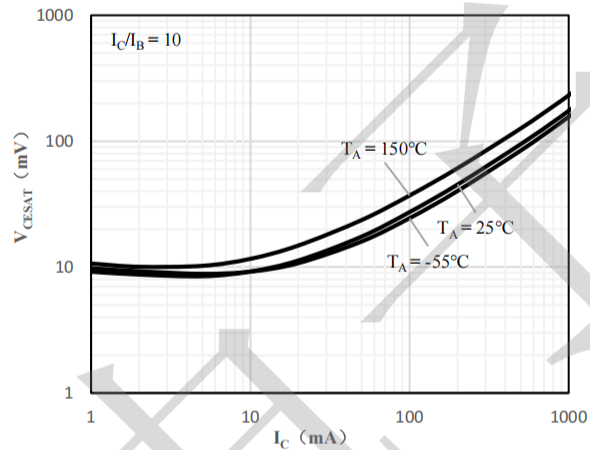


Fig 2 $V_{CE(sat)}$ vs. I_C

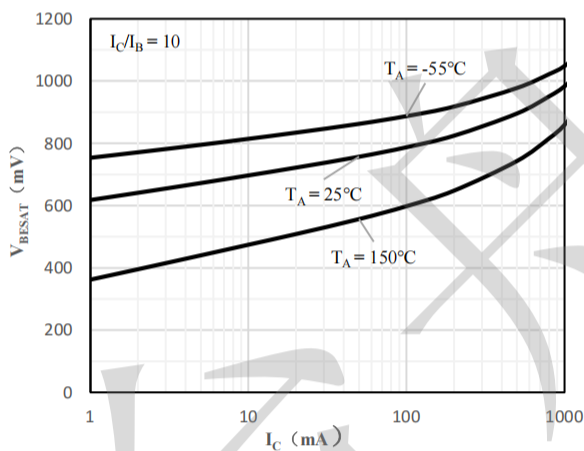


Fig 3 $V_{BE(sat)}$ vs. I_C

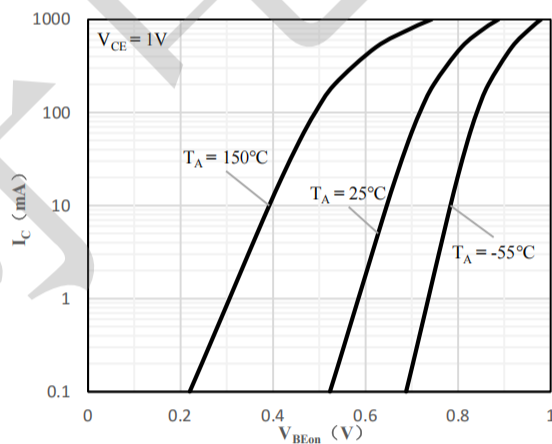


Fig 4 $V_{BE(on)}$ vs. I_C

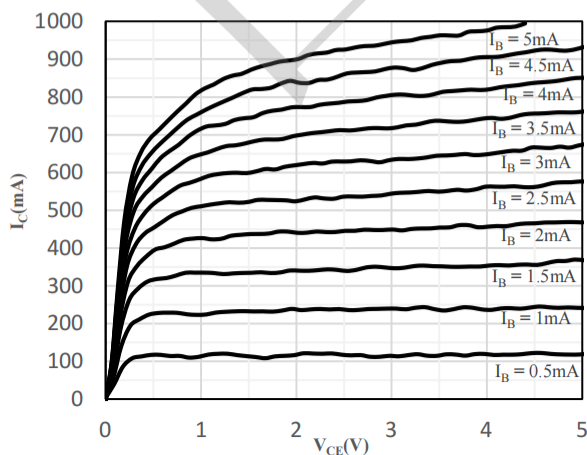
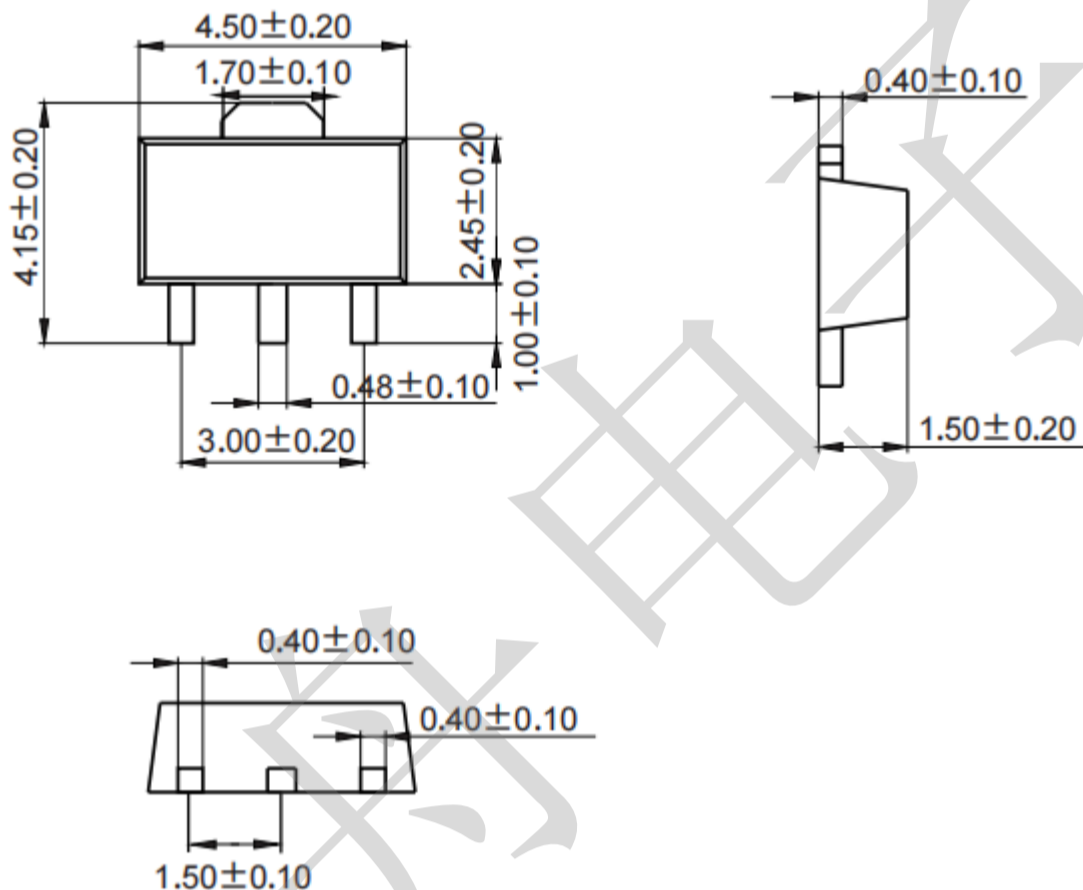


Fig 5 I_C vs. V_{CE}

Package Outline Dimensions (unit:mm)

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Mounting Pad Layout (unit: mm)

