

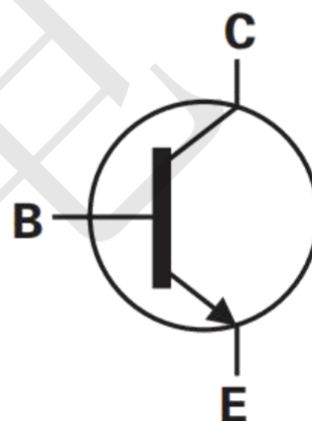
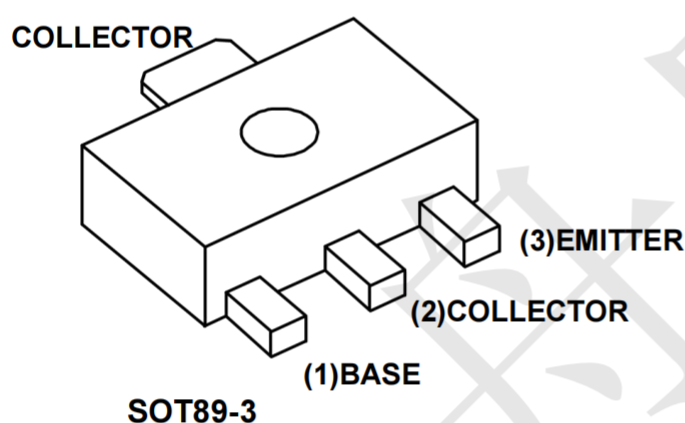
Product Summary

- $BVCBO \geq 40V (I_C=0.1mA)$
- $BVCEO \geq 40V (I_C=1mA)$
- $I_C = 2A$

Features

- Supply line switching circuits
- DC/DC converter applications
- Battery management applications

Circuit diagram and pin information



Absolute Maximum Ratings

($T_a=25^\circ C$ unless otherwise specified)

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	2	A
Power Total Dissipation @ $T_A=25^\circ C$ (Note 1)	P_D	1	W
Maximum Operating Junction Temperature	T_J	+150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ C$

Note:1.For a device surface mounted on 15mm x 15mm x 0.6mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions; the device is measured when operating in steady state condition

Electrical Characteristics

(TA=25°C unless otherwise specified)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static (Note 1)						
Collector-Base Breakdown Voltage	$I_C = 0.1\text{mA}, I_E = 0$	BV_{CBO}	40	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, I_B = 0$	BV_{CEO}	40	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 0.1\text{mA}, I_C = 0$	BV_{EBO}	6	--	--	V
Collector Cutoff Current	$V_{CB} = 40\text{V}, I_E = 0$	I_{CBO}	--	--	100	nA
Emitter Cutoff Current	$V_{EB} = 4\text{V}, I_C = 0$	I_{EBO}	--	--	100	nA
Collector-Emitter Saturation Voltage	$I_C = 100\text{mA}, I_B = 1\text{mA}$	$V_{CE(SAT)1}$	--	--	0.07	V
	$I_C = 500\text{mA}, I_B = 50\text{mA}$	$V_{CE(SAT)2}$	--	--	0.1	V
	$I_C = 1\text{A}, I_B = 50\text{mA}$	$V_{CE(SAT)3}$	--	--	0.18	V
	$I_C = 2\text{A}, I_B = 200\text{mA}$	$V_{CE(SAT)4}$	--	--	0.32	V
Base-Emitter Saturation Voltage	$I_C = 2\text{A}, I_B = 200\text{mA}$	$V_{BE(SAT)}$	--	--	1.1	V
DC Current Transfer Ratio	$V_{CE} = 2\text{V}, I_C = 100\text{mA}$	h_{FE1}	350	--	--	
	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	h_{FE2}	300	--	--	
	$V_{CE} = 2\text{V}, I_C = 1\text{A}$	h_{FE3}	300	--	--	
	$V_{CE} = 2\text{V}, I_C = 2\text{A}$	h_{FE4}	150	--	--	
Dynamic (Note 2)						
Transition Frequency	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 30\text{MHz}$	f_T	150	--	--	MHz
Collector Output Capacitance	$V_{CB} = 6\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$	C_{ob}	--	3	--	pF

Note:

1. Pulse test: $\leq 380\mu\text{s}$, duty cycle $\leq 2\%$

2. For DESIGN AID ONLY, not subject to production testing

Typical Performance Characteristics (TA=25°C)

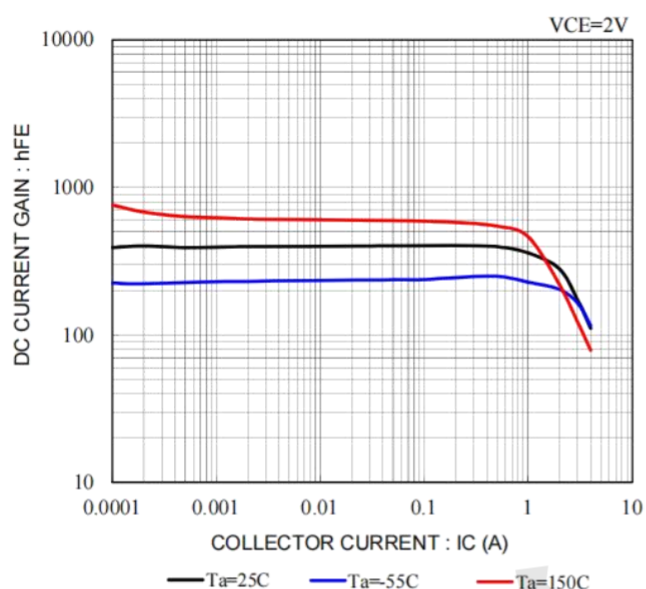


Fig.1 DC CURRENT GAIN VS. COLLECTOR CURRENT

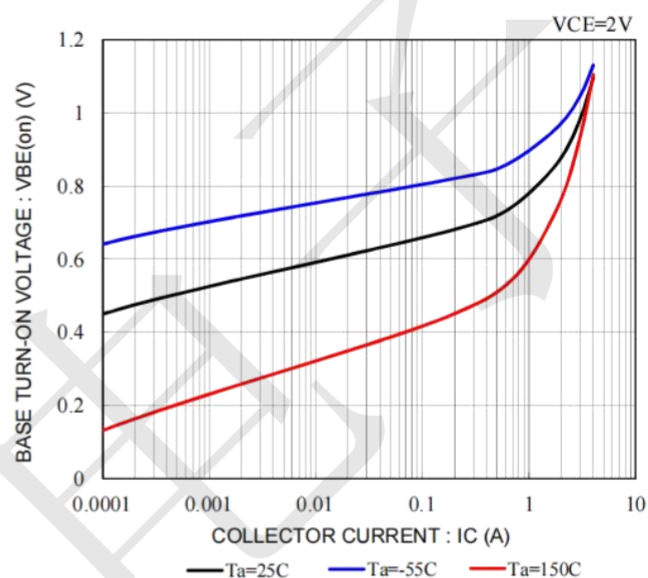


Fig.2 BASE-EMITTER TURN-ON VOLTAGE VS. COLLECTOR CURRENT

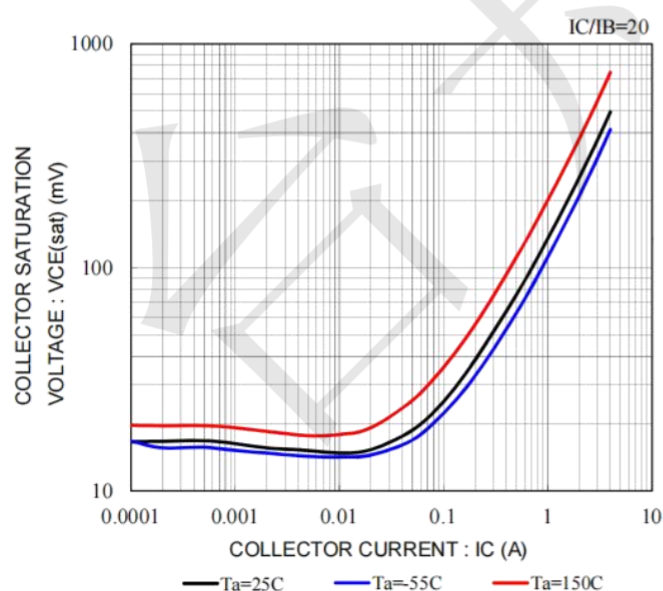


Fig.3 COLLECTOR-EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT

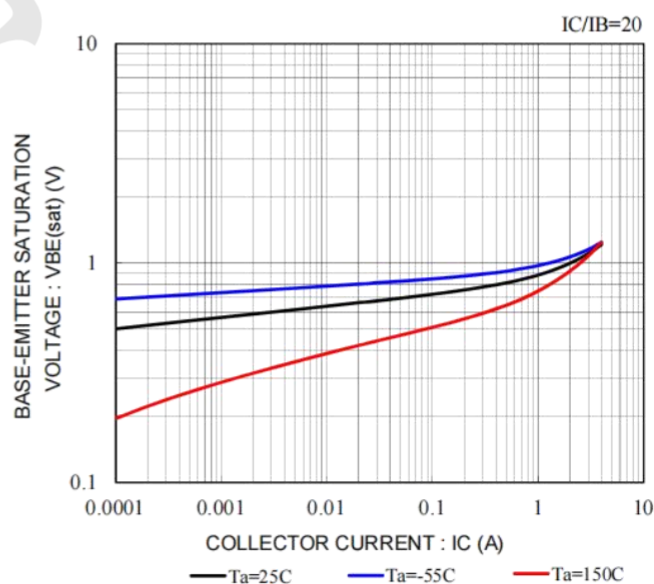
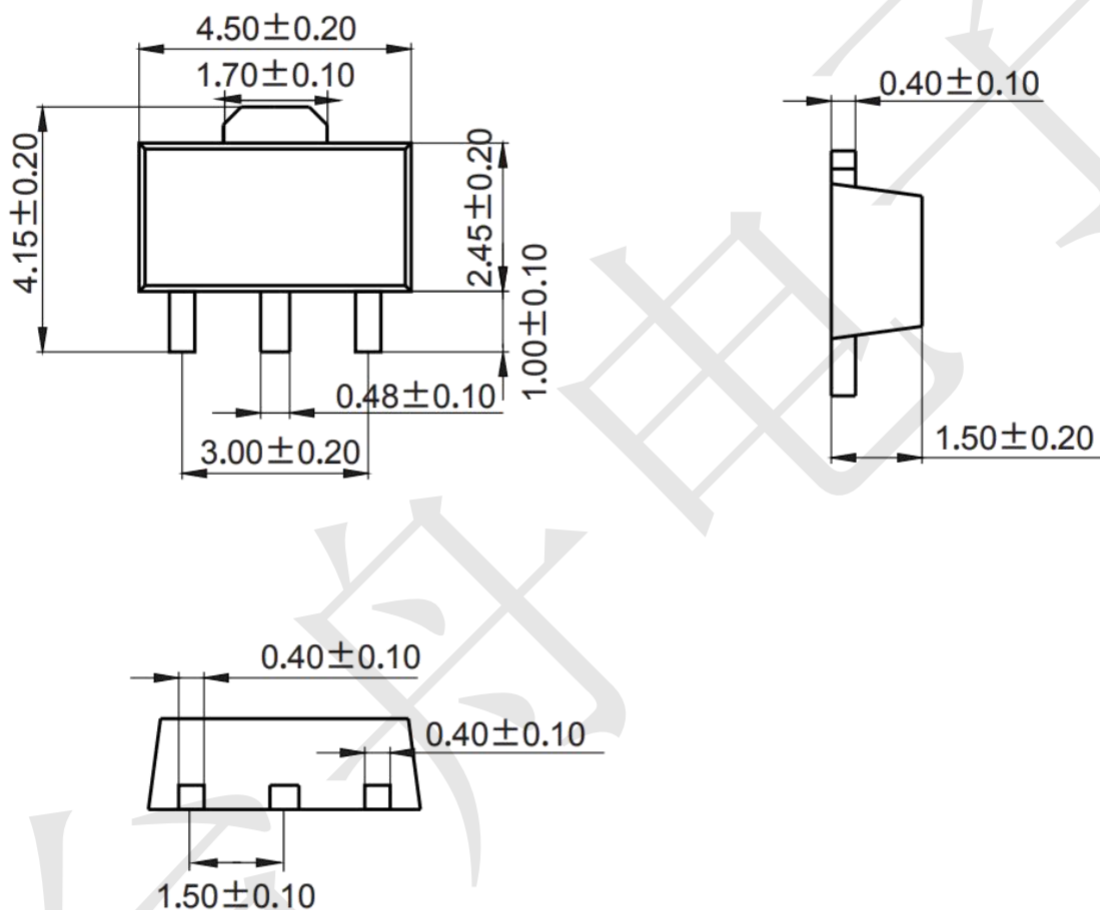


Fig.4 BASE-EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT

Package Outline Dimensions (unit: mm)

SOT89-3



Mounting Pad Layout (unit: mm)

