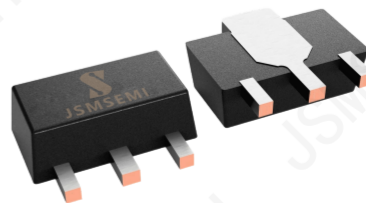


Applications

- Supply line switching
- Battery charger
- DC/DC converter
- LCD backlighting.



SOT-89

Features

- Low collector-to-emitter saturation voltage.
- High current capability
- Higher efficiency leading to less heat generation
- Reduced printed-circuit board requirements.
- Complement the PBSS4350X,115

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Value	Unit
Collector-base voltage		BV_{CBO}	-50	V
Collector-emitter voltage		BV_{CEO}	-50	V
Emitter-base voltage		BV_{EBO}	-5	V
Collector current (DC)		I_C	-3	A
Collector current (Pulse)		I_{CP}	-5	A
Base current (DC)		I_B	-0.5	A
Total power dissipation	Note1	P_{tot}	0.55	W
	Note2		1	
	Note3		1.4	
	Note4		1.6	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	-55~150	°C

Characteristics **Electrical Characteristics** ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = -100\mu\text{A}, I_E = 0$	-50			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}, I_B = 0$	-50			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -100\mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$			-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-100	nA
DC current gain	h_{FE}	$V_{CE} = -2\text{V}, I_B = -0.1\text{A}$	200			
		$V_{CE} = -2\text{V}, I_B = -0.5\text{A}$	200			
		$V_{CE} = -2\text{V}, I_B = -1\text{A}$	200		450	
		$V_{CE} = -2\text{V}, I_B = -2\text{A}$	130			
		$V_{CE} = -2\text{V}, I_B = -3\text{A}$	80			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$			-90	mV
		$I_C = -1\text{A}, I_B = -50\text{mA}$			-180	
		$I_C = -2\text{A}, I_B = -100\text{mA}$			-320	
		$I_C = -2\text{A}, I_B = -200\text{mA}$			-270	
		$I_C = -3\text{A}, I_B = -300\text{mA}$			-390	
Equivalent on-resistance	$R_{CE(sat)}$	$I_C = -2\text{A}, I_B = -200\text{mA}$			135	m Ω
Base-emitter saturation voltage*	$V_{BE(sat)}$	$I_C = -2\text{A}, I_B = -100\text{mA}$			-1.1	V
		$I_C = -3\text{A}, I_B = -300\text{mA}$			-1.2	
Base-emitter turn on voltage	$V_{BE(on)}$	$V_{CE} = -2\text{V}, I_B = -1\text{A}$			-1.1	V
Transition frequency	f_T	$V_{CE} = -10\text{V}, I_E = -100\text{mA}$ $f=100\text{MHz}$	100			MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f=1\text{MHz}$			35	pF

* Pulse Test: $PW=300\mu\text{s}$, duty Cycle=2% Pulsed

Thermal Characteristics

Parameter	Symbol	Conditions	Value	Unit
Thermal resistance from junction to ambient	$R_{th(j-a)}$	in free air; Note1	225	$^{\circ}\text{C} / \text{W}$
		Note2	125	
		Note3	90	
		Note4	80	
Thermal resistance from junction to soldering point	$R_{th(j-s)}$		16	$^{\circ}\text{C} / \text{W}$

Notes

1. Device mounted on a printed-circuit board, single sided copper, tinplated and standard footprint.
2. Device mounted on a printed-circuit board, single sided copper, tinplated and mounting pad for collector 1 cm^2
3. Device mounted on a printed-circuit board, single sided copper, tinplated and mounting pad for collector 6 cm^2
4. Device mounted on a ceramic printed-circuit board 7 cm^2 , single-sided copper, tinplated.

RATING AND CHARACTERISTIC CURVES

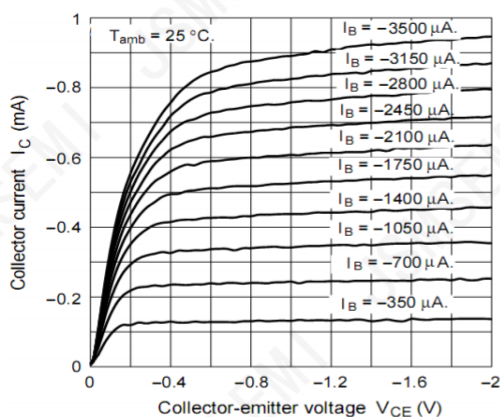


Figure 1. Static Characteristic

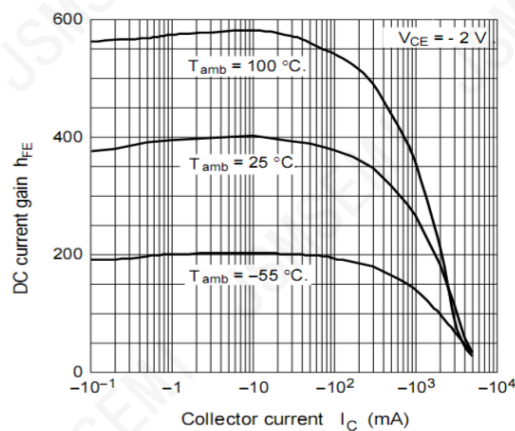


Figure 2. DC current Gain

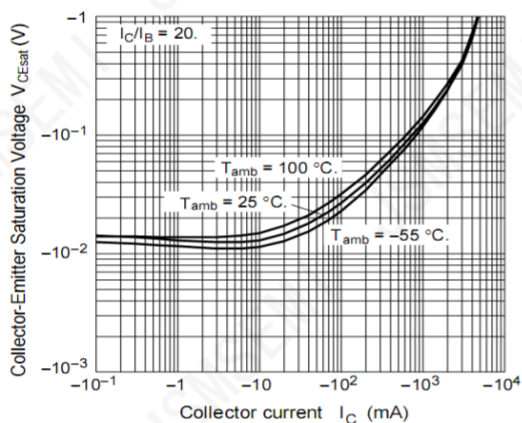


Figure 3. Collector-Emitter Saturation Voltage

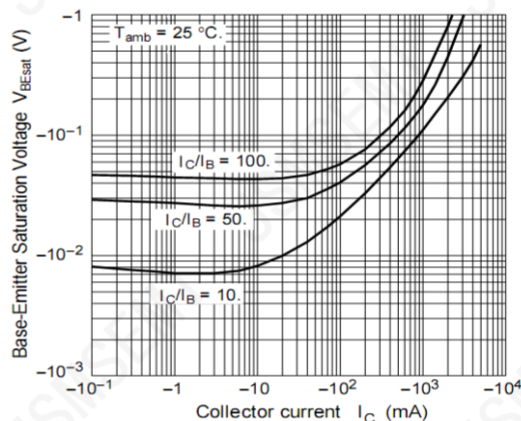


Figure 4. Base-Emitter Saturation Voltage

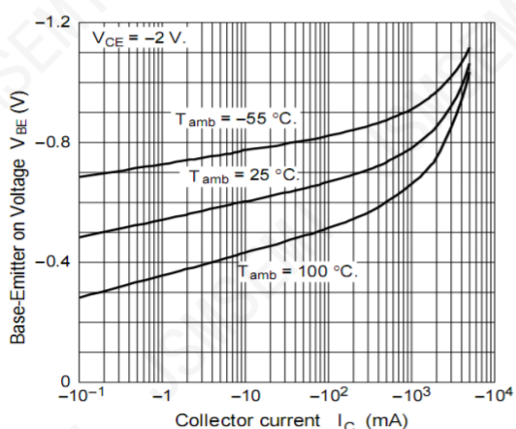


Figure 5. Base-Emitter on Voltage

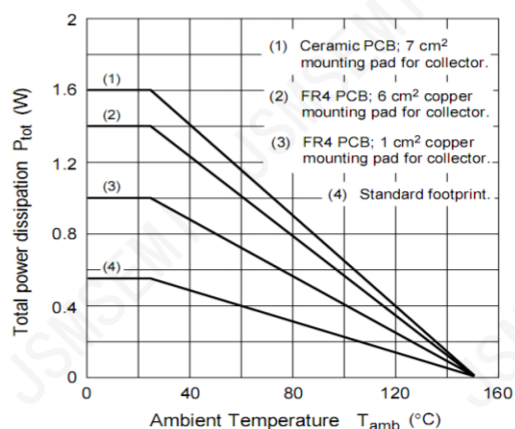
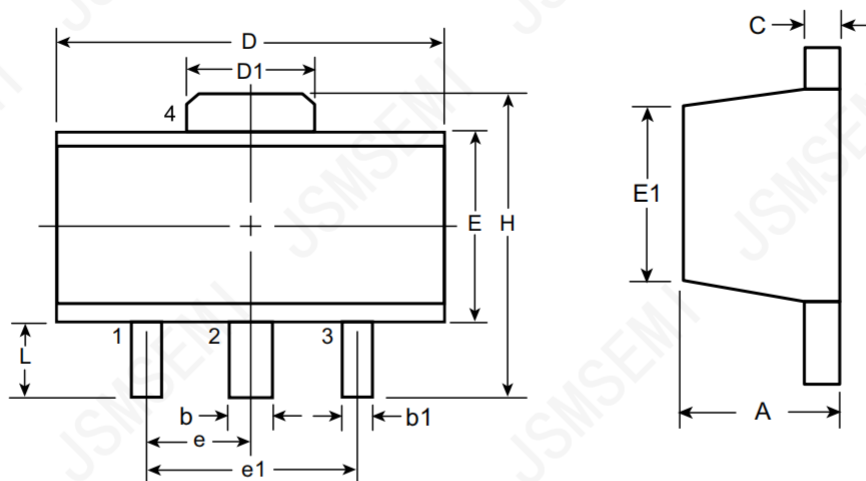


Figure 6. Power derating curves.

SOT-89 PACKAGE OUTLINE



Top View

Side View

Symbol		A	b	b1	C	D	D1	E	E1	e	e1	H	L
Dimensions (mm)	MIN	1.40	0.44	0.36	0.3	4.40	1.50	2.29	2.00 ^r	1.50B SC	3.00B SC	3.94	0.89
	NOM	-	-	-	-	-	-	-	-	-	-	-	-
	MAX	1.60	0.56	0.48	0.5	4.60	1.75	2.60	2.29	-	-	4.25	1.20

Dimensions in mm

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2021

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