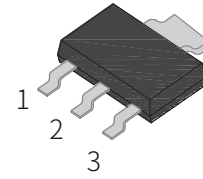


FEATURES

Low collector-emitter saturation voltage



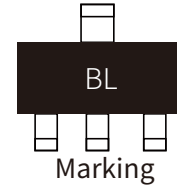
SOT-89

MECHANICAL DATA

SOT-89 small outline plastic package

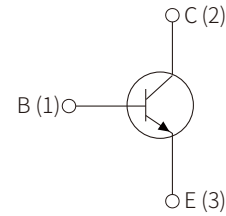
Epoxy UL: 94V-0

Mounting position: Any



APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

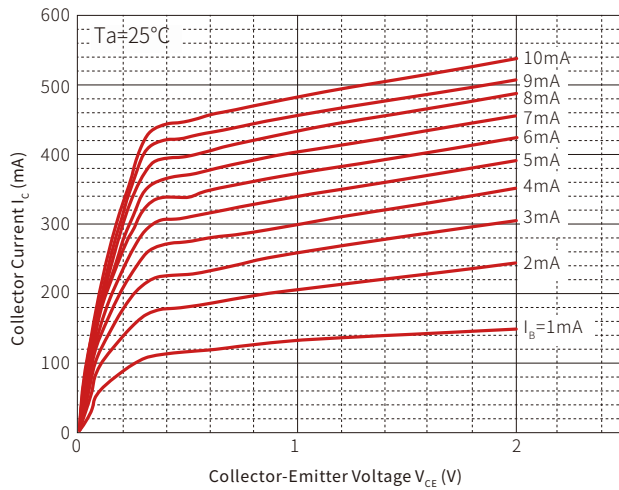
Parameter	Symbol	Conditions	Value	Unit
Minimum Collector-Emitter Voltage	V_{CEO}	$I_C=10\text{mA}$, $I_B=0$	80	V
Minimum Collector-Base Voltage	V_{CBO}	$I_C=100\mu\text{A}$, $I_E=0$	100	
Minimum Emitter-Base Voltage	V_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	5	
Collector Current	I_C		1	A
Collector Power Dissipation	P_C		500	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$		250	$^{\circ}\text{C}/\text{W}$
Storage Operation Junction and Storage Temperature Range	T_J, T_{STG}		-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

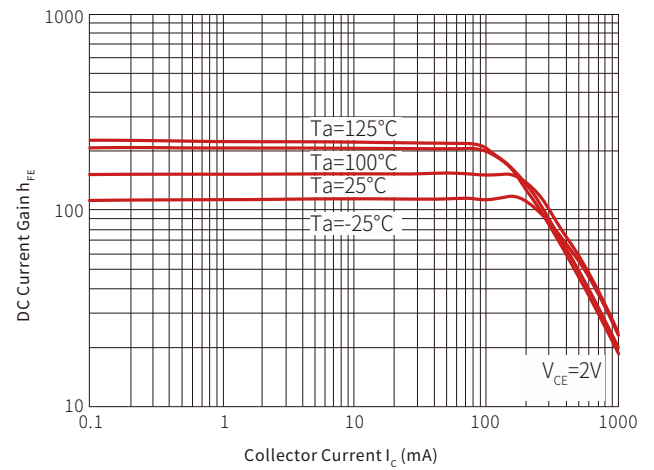
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Emitter Voltage	V_{CEO}	$I_C=10\text{mA}, I_B=0$	80			V
Collector-Base Voltage	V_{CBO}	$I_C=100\mu\text{A}, I_E=0$	100			
Emitter-Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	5			
Collector-Base cut-off current	I_{CBO}	$V_{CB}=30\text{V}$			100	nA
Emitter-Base cut-off current	I_{EBO}	$V_{EB}=5\text{V}$			100	
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	100		250	
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	40			
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	25			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=2\text{V}, I_C=500\text{mA}$			1	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$		130		MHz

TYPICAL CHARACTERISTICS

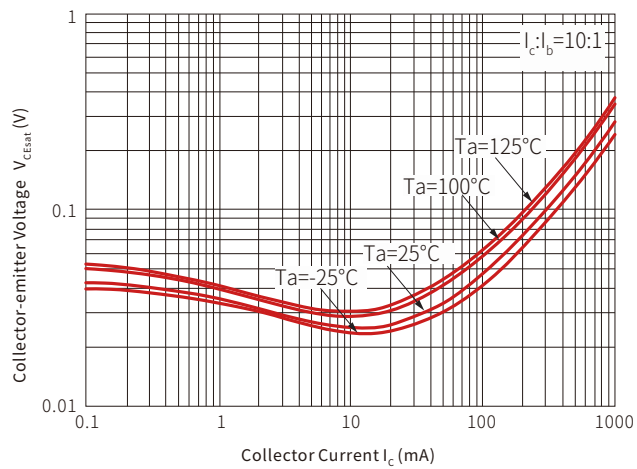
Static Characteristic



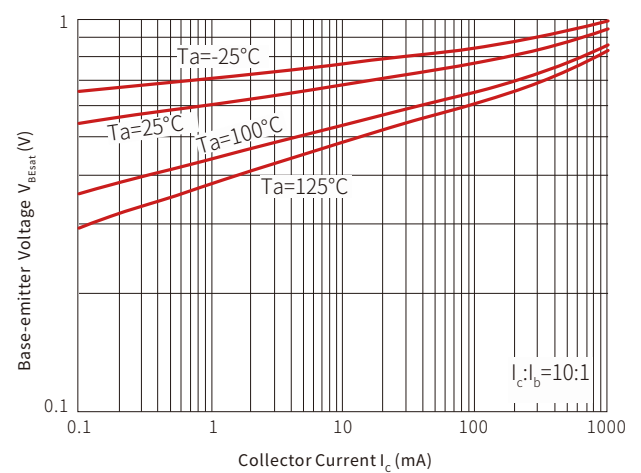
DC Current Gain



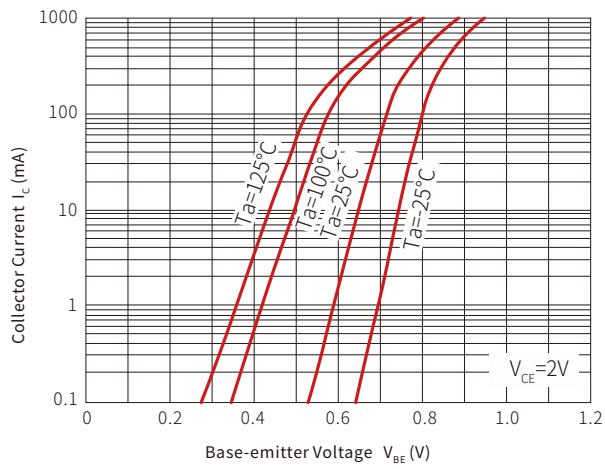
Collector-Emitter Saturation Voltage



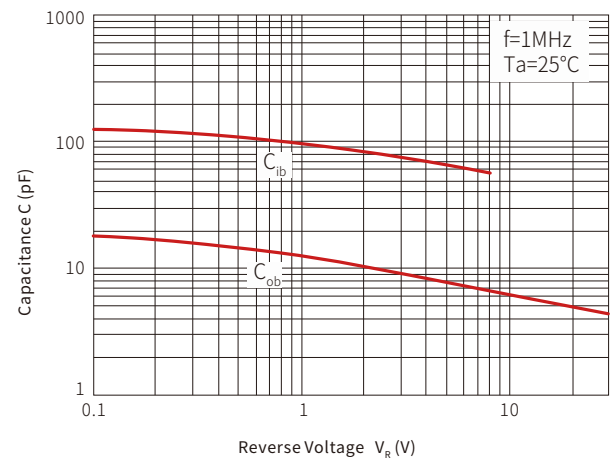
Base-Emitter Saturation Voltage



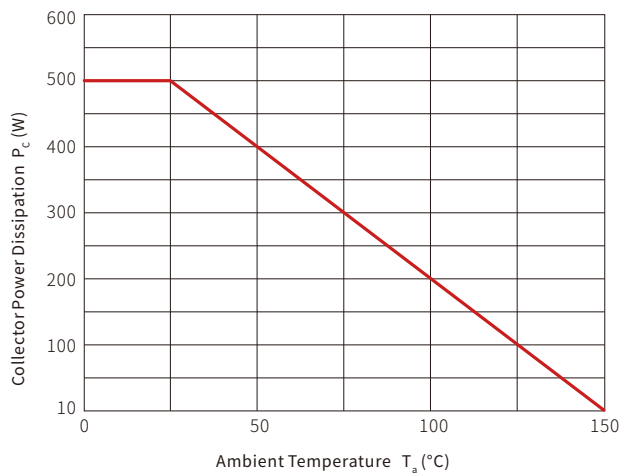
Base-Emitter On Voltage



$C_{ob}/C_{ib} \text{ — } V_{CB}/V_{EB}$

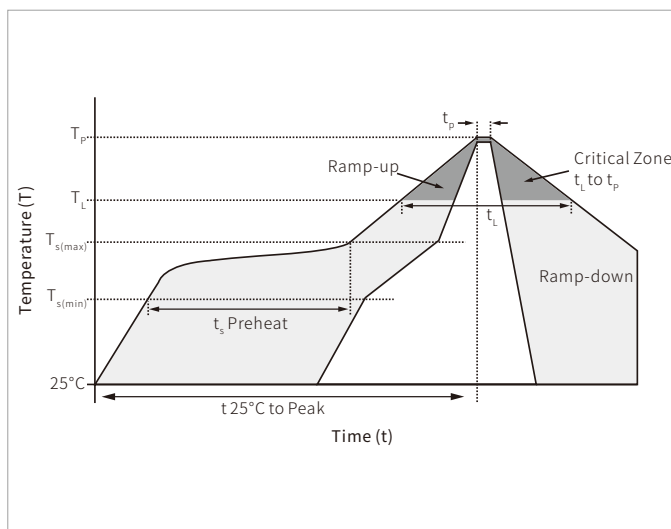


Collector Power Derating Curve

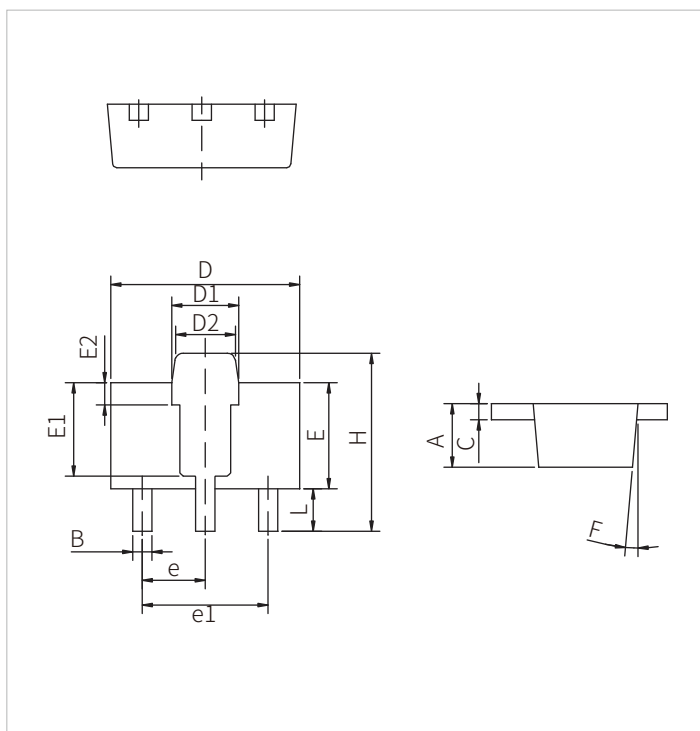


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



SOT-89 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.40		0.52	0.016		0.020
C	0.35		0.41	0.014		0.016
D	4.40		4.60	0.173		0.181
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.40		2.60	0.094		0.102
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5.00			5.000	
H	4.05		4.25	0.159		0.167
L	0.89		1.20	0.035		0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Box	Carton	Reel Size
BCX56-16	SOT-89	1000PCS	8000PCS	32000PCS	7"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.