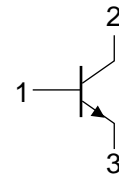
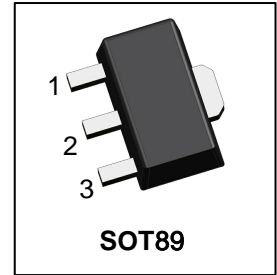


# LBTN4100TZLG

NPN low VCEsat (BISS) transistor



## 1. FEATURES

- Low collector-emitter saturation voltage  $V_{CEsat}$
- High collector current capability  $I_C$  and  $I_{CM}$
- High collector current gain ( $h_{FE}$ ) at high  $I_C$
- High efficiency due to less heat generation
- Smaller required Printed-Circuit Board (PCB) area than for conventional transistors
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

## 2. APPLICATIONS

- High-voltage DC-to-DC conversion
- High-voltage MOSFET gate driving
- High-voltage motor control
- High-voltage power switches
- Automotive applications

## 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBTN4100TZLG	C	1000/Tape&Reel

## 4. MAXIMUM RATINGS( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	$V_{CEO}$	100	V
Collector–Base Voltage	$V_{CBO}$	100	V
Emitter–Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	4.5	A
Peak collector current( $t_p \leq 1$ ms)	$I_{CM}$	9	A

## 5. THERMAL CHARACTERISTICS

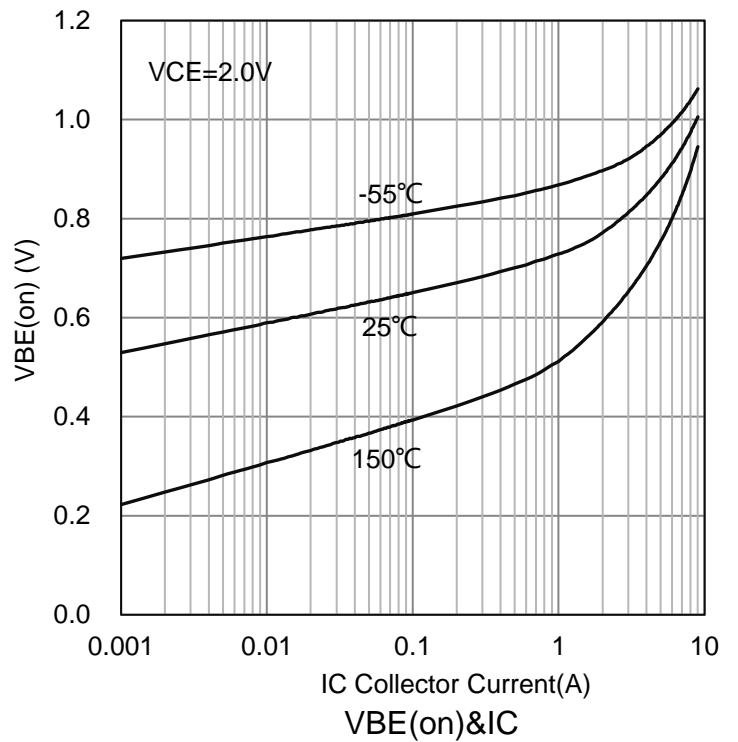
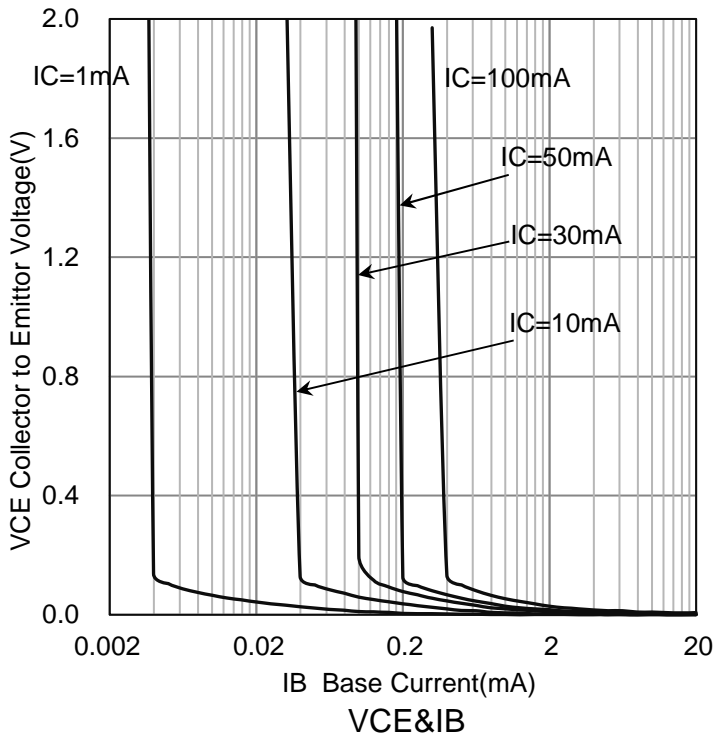
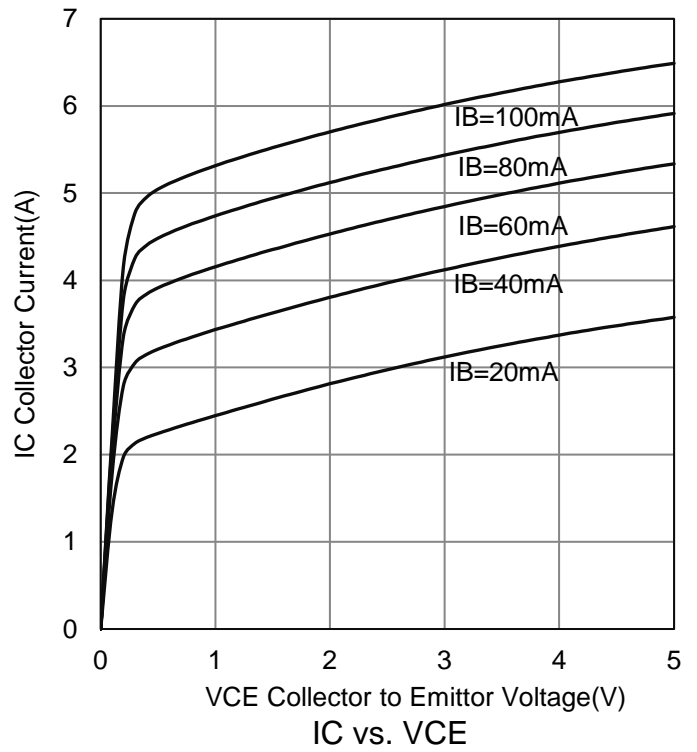
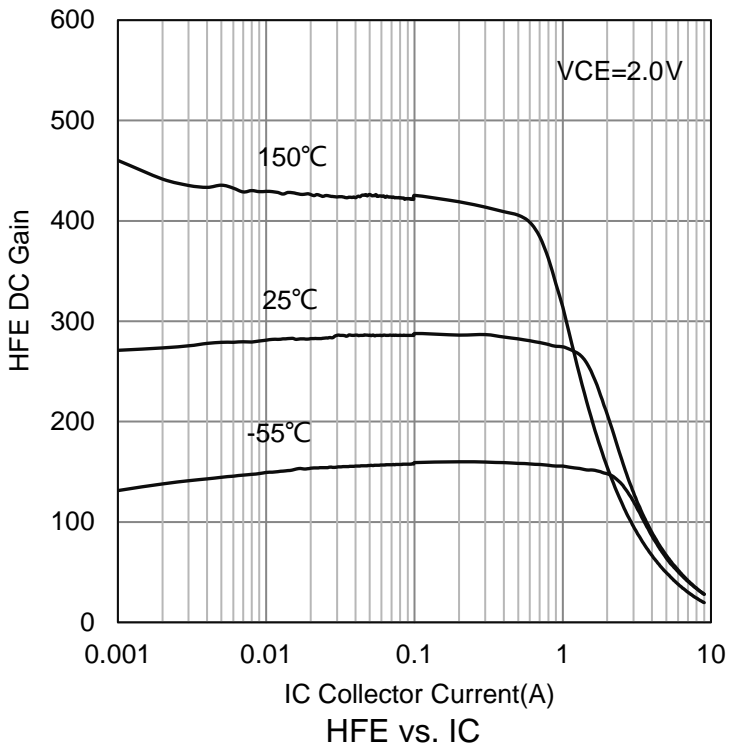
Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-4 Board (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	PD	550	mW
		4.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	225	$^\circ\text{C}/\text{W}$
Junction and Storage temperature	$T_J, T_{stg}$	$-65 \sim +150$	$^\circ\text{C}$

1.PCB Size:30.0mm×25.0mm×1.6mm,FR-4 Board;

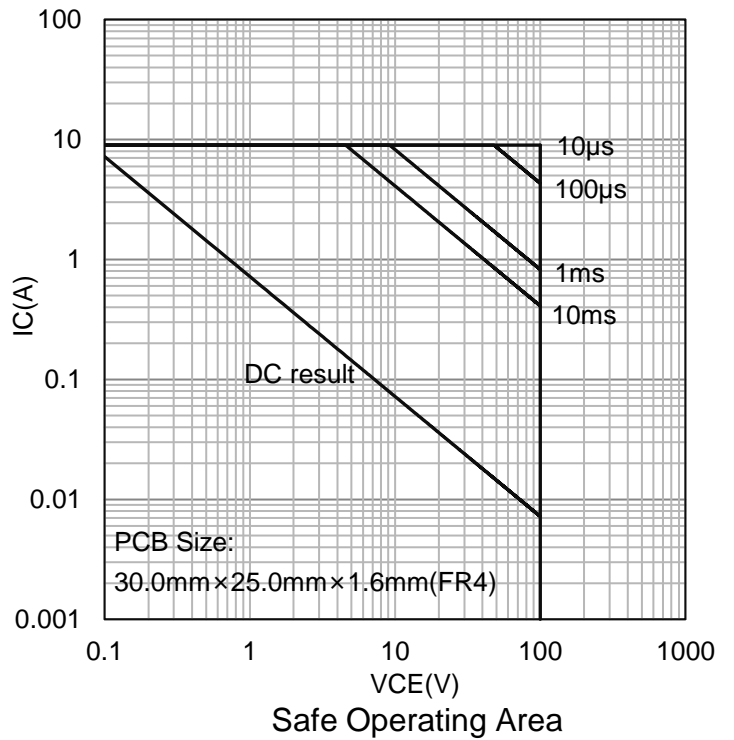
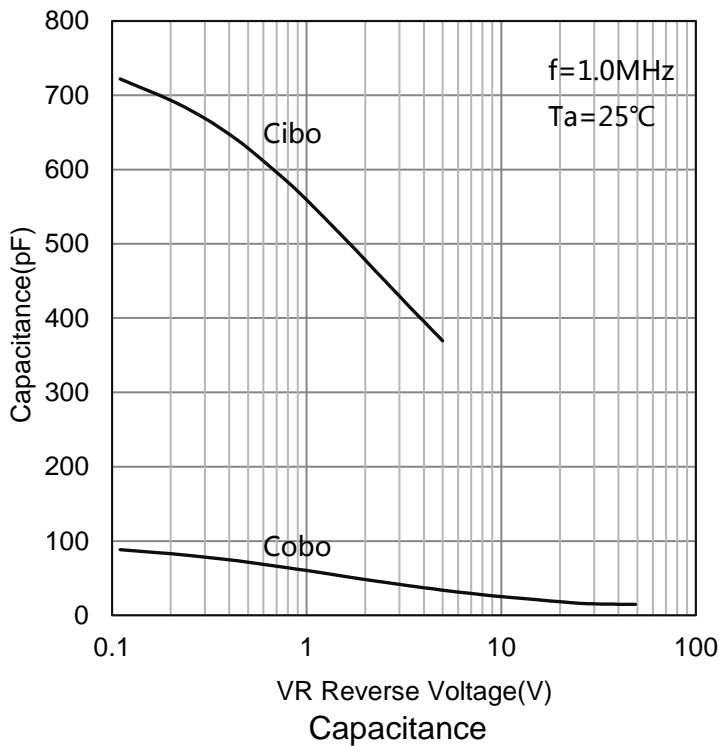
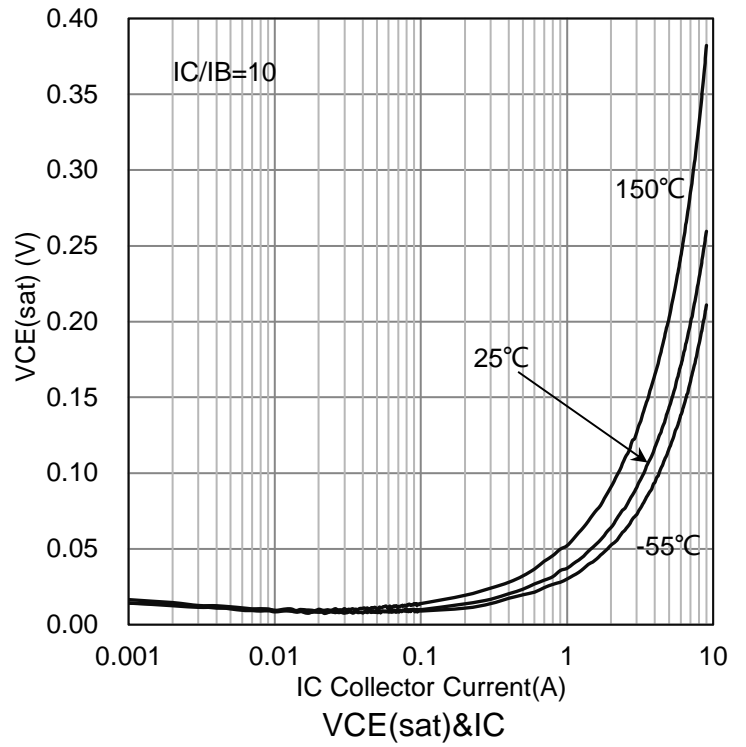
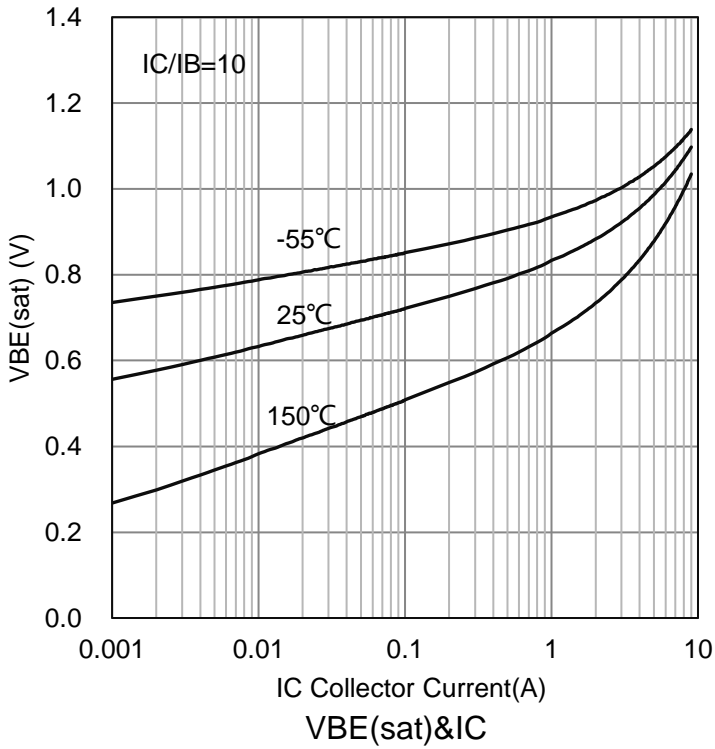
### 6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC=1mA,IB=0)	VBR(CEO)	100	-	-	V
Collector–Base Breakdown Voltage (IC=100μ A,IE=0)	VBR(CBO)	100	-	-	V
Emitter–Base Breakdown Voltage (IE=100μ A,IC=0)	VBR(EBO)	5	-	-	V
Collector Cutoff Current (VCB = 80 V,IE = 0 A) (VCB = 80 V,IE = 0 A,Tj = 150°C)	ICBO	- -	- -	100 50	nA μA
Emitter Cut-off Current (VEB =5V, IC =0)	IEBO	-	-	100	nA
Collector-Emitter cutoff Current (VCE = 80V, IB=0)	ICEO	-	-	10	μA
DC Current Gain (VCE = 2 V,IC = 0.5A) (VCE = 2 V,IC = 1A) (VCE = 2 V,IC = 2A) (VCE = 2 V,IC = 4A) (VCE = 2 V,IC = 5A)	HFE	200 150 100 50 40	330 270 175 85 70	- - - - -	
Collector–Emitter Saturation Voltage (IC = 0.5 A, IB = 50 mA) (IC = 1 A,IB = 50 mA) (IC = 1 A, IB = 10 mA) (IC = 2 A, IB = 40 mA) (IC = 4 A, IB = 200 mA) (IC = 4 A, IB = 400 mA) (IC = 4.5 A, IB = 225 mA)	VCE(sat)	- - - - - - -	27 53 100 115 160 140 170	40 75 150 160 225 220 245	mV
Base-Emitter saturation voltage (IC = 1 A, IB = 100 mA) (IC = 4 A, IB = 400 mA)	VBE(sat)	- -	0.81 0.94	0.9 1.05	V
Transition Frequency (VCE = 10 V, IC = 100 mA,f = 100 MHz)	fT	-	110	-	MHz
Collector Capacitance (VCB = 10 V,IE = ie = 0 A,f = 1 MHz)	Cc	-	23	40	pF

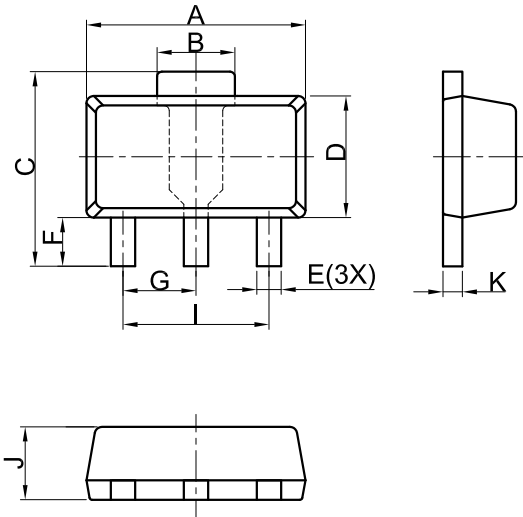
**7.ELECTRICAL CHARACTERISTICS CURVES**



**7.ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 8.OUTLINE AND DIMENSIONS

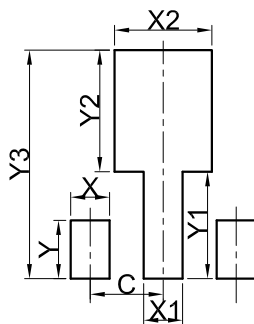


SOT89			
DIM	MIN	NOR	MAX
A	4.30	4.50	4.70
B	1.40	1.60	1.80
C	3.90	4.00	4.25
D	2.30	2.50	2.70
E	0.40	0.50	0.58
F	0.90	1.00	1.20
G	1.50 BSC		
I	3.00 BSC		
J	1.40	1.50	1.60
K	0.34	0.40	0.50
All Dimensions in mm			

#### GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um
4. Protrusion or Gate Burrs shall not exceed 0.10mm per side.

### 9.SOLDERING FOOTPRINT



SOT89	
DIM	(mm)
X	0.80
Y	1.20
X1	0.80
Y1	2.20
X2	2.00
Y2	2.50
C	1.50
Y3	4.70

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