

# LBTN180Z4TZHG

## S-LBTN180Z4TZHG

80V NPN medium power transistors

### 1. FEATURES

- High current
- Three current gain selections
- High power dissipation capability
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

### 2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBTN180Z4TZHG	NA	1000/Tape&Reel

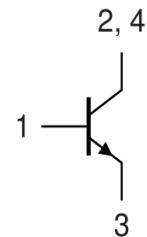
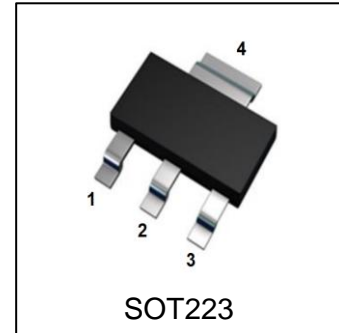
### 3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	80	V
Collector–Base Voltage	VCBO	100	V
Emitter–Base Voltage	VEBO	5	V
Collector Current	IC	1	A
Peak Collector Current (tp≤1 ms)	ICM	2	A
Base Current	IB	0.3	A
Peak Base Current (tp≤1 ms)	IBM	0.3	A
Junction and Storage temperature	TJ, Tstg	-55~+150	°C

### 4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-4 Board (Note 1) @ TA = 25°C	PD	833	mW
Thermal Resistance, Junction–to–Ambient(Note 1)	RθJA	150	°C/W

1. FR-4 = 30.0mm×25.0mm×1.6mm.

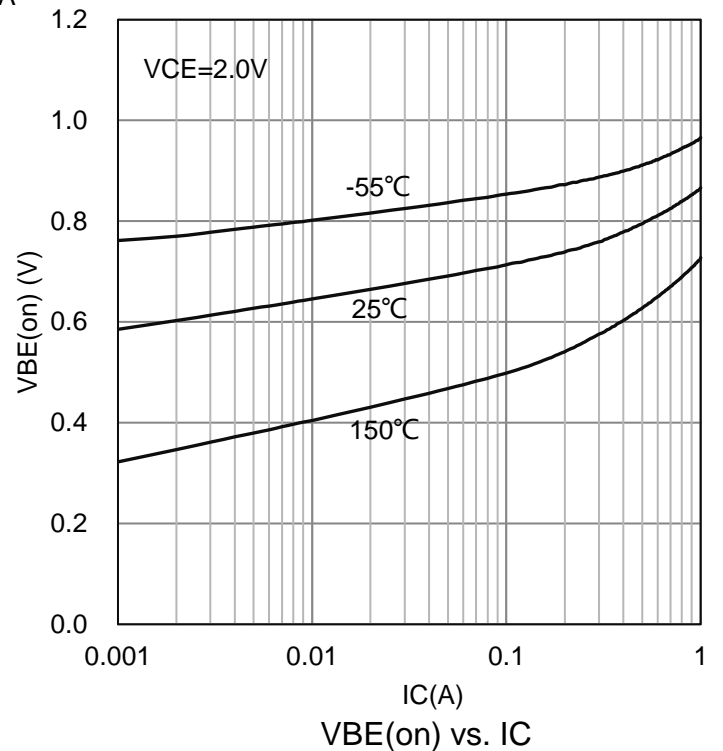
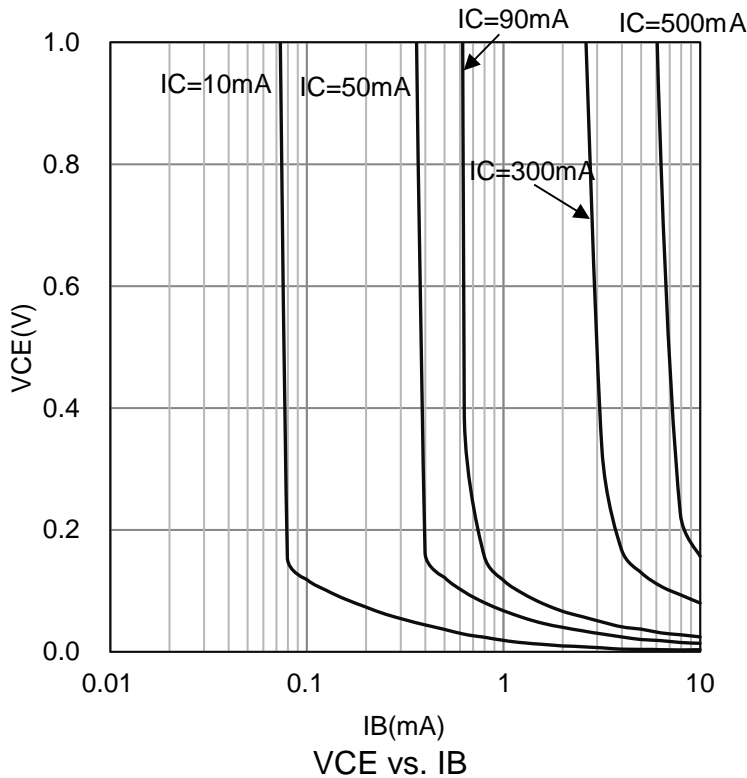
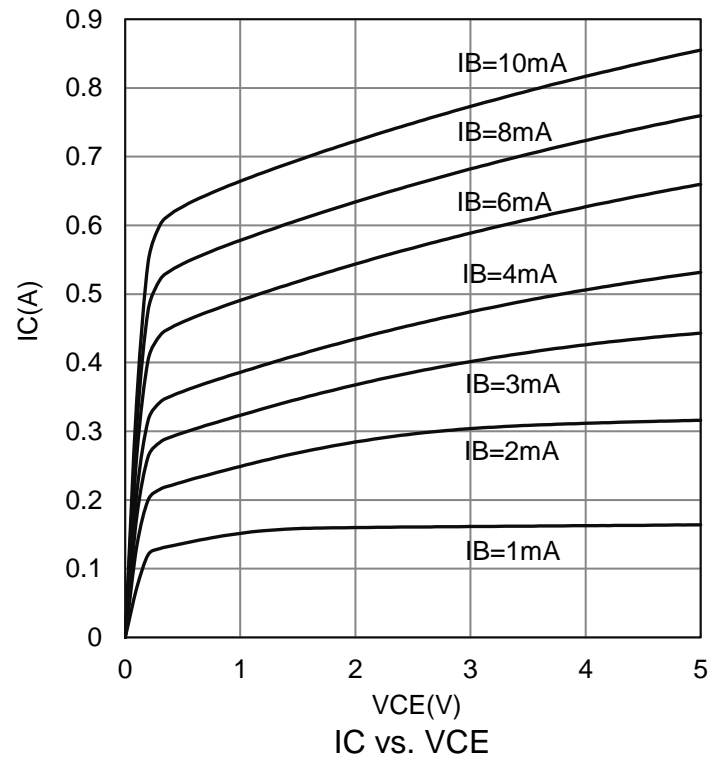
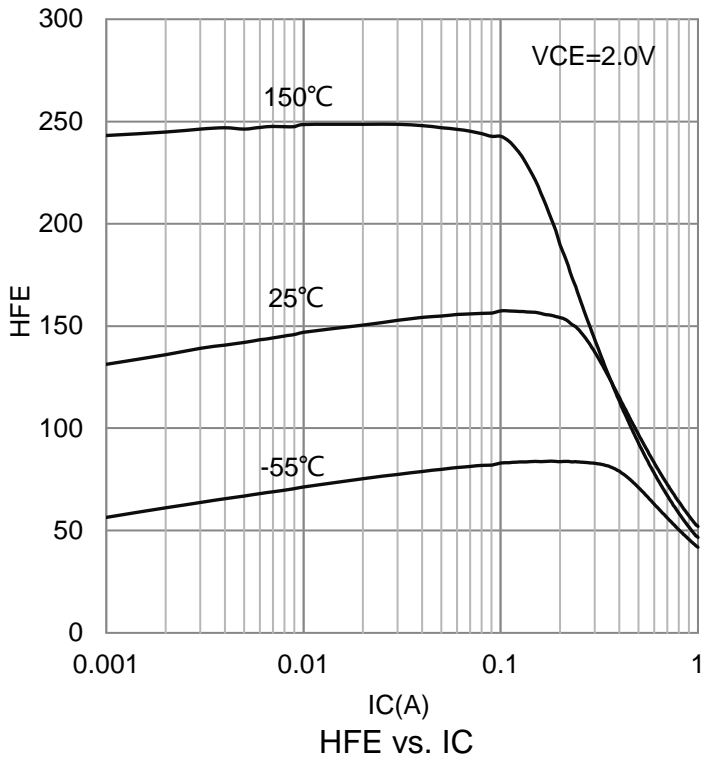


**5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

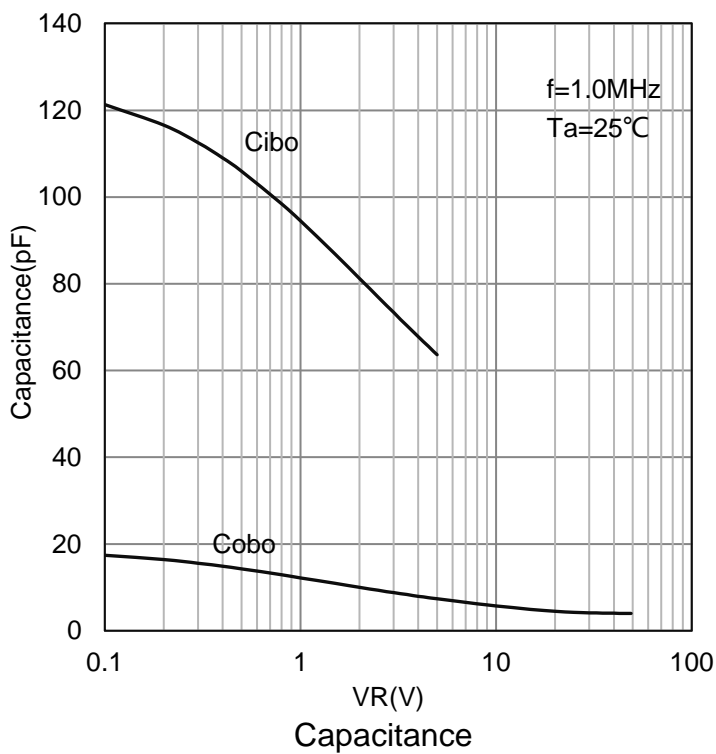
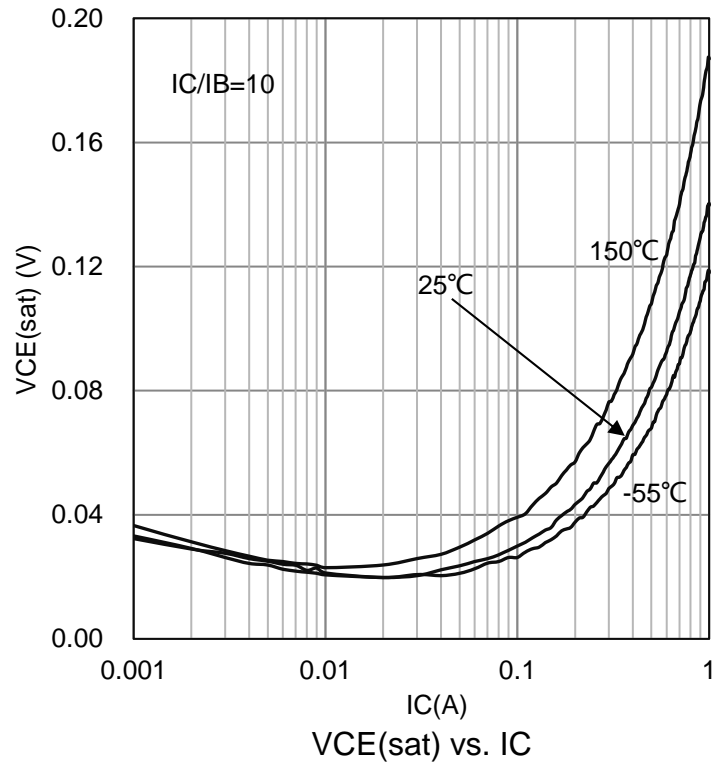
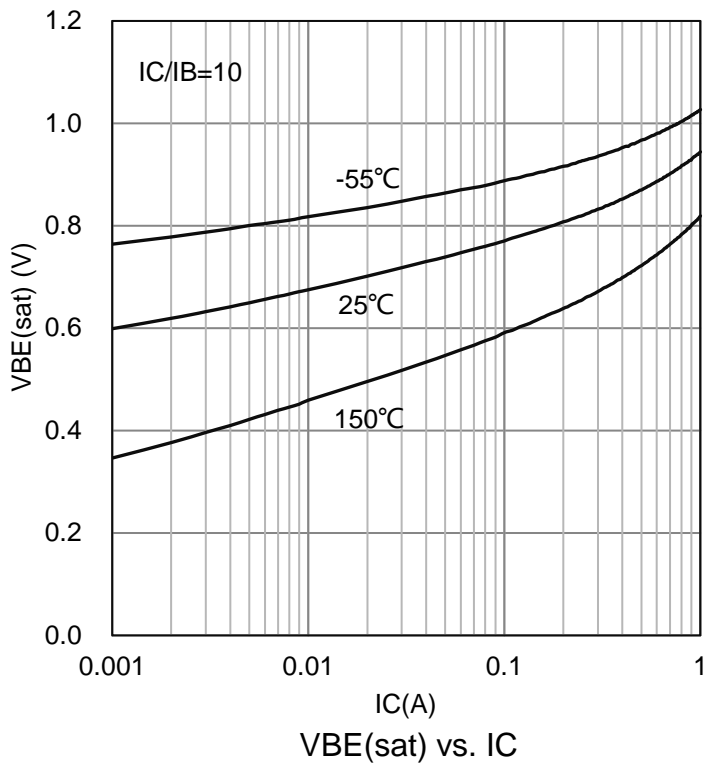
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 1.0 mA, IB = 0)	VBR(CEO)	80	-	-	V
Collector–Base Breakdown Voltage (IC = 100 μA, IE = 0)	VBR(CBO)	100	-	-	V
Emitter–Base Breakdown Voltage (IE = 100 μA, IC = 0)	VBR(EBO)	5	-	-	V
Collector-Base Cutoff Current (VCB = 30 V, IE = 0 A) (VCB = 30 V, IE = 0 A, Tj = 150°C)	ICBO	-	-	100 10	nA μA
Emitter-Base CutOff Current (VEB = 5 V, IC = 0 A)	IEBO	-	-	100	nA
Collector-Emitter cutoff Current (VCE= 80V, IB=0)	ICEO	-	-	10	μA
DC Current Gain (IC = 5mA, VCE =2V) (IC =150mA, VCE =2V) (IC =500mA, VCE = 2V)	HFE	63 100 40	- - -	- 250 -	
Collector–Emitter Saturation Voltage (IC = 500 mA, IB = 50 mA)	VCE(sat)	-	-	0.5	V
Base–Emitter Saturation Voltage (IC = 500 mA, IB = 50 mA)	VBE(sat)	-	-	1	V
Base–Emitter Voltage (VCE = 2 V, IC = 500 mA)	VBE	-	-	1	V
Transitional Frequency (VCE = 5 V, IC = 50 mA, f = 100 MHz)	fT	100	180	-	MHz
Collector Capacitance (VCB = 10 V, IE = ie = 0 A, f = 1 MHz)	Cc	-	6	-	pF

1. Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

**6.ELECTRICAL CHARACTERISTICS CURVES**

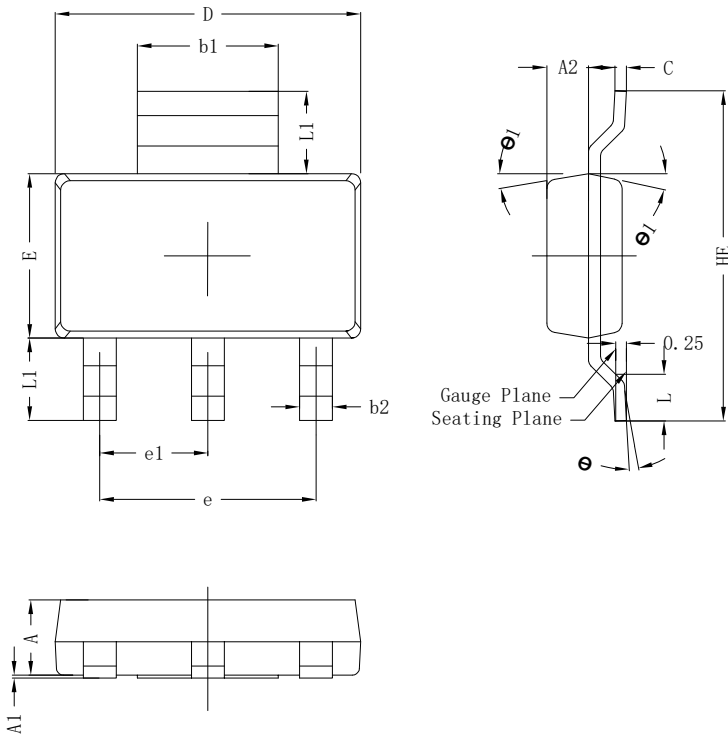


**6.ELECTRICAL CHARACTERISTICS CURVES(Con.)**



## 7. OUTLINE AND DIMENSIONS

### SOT223

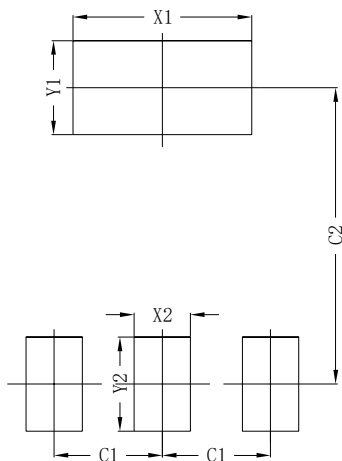


SOT223			
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ 1	8°	10°	12°
All Dimensions in mm			

#### 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.

## 8. SOLDERING FOOTPRINT



SOT223	
DIM	(mm)
X1	3.80
Y1	2.00
X2	1.20
Y2	2.00
C1	2.30
C2	6.30

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