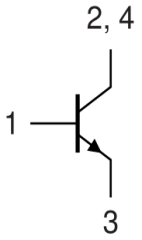
LBTN180Z4TZHG
S-LBTN180Z4TZHG

80V NPN medium power transistors

SOT223



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 = 25ºC)

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 = 25ºC	PD	833	mW
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	150	ºC/W

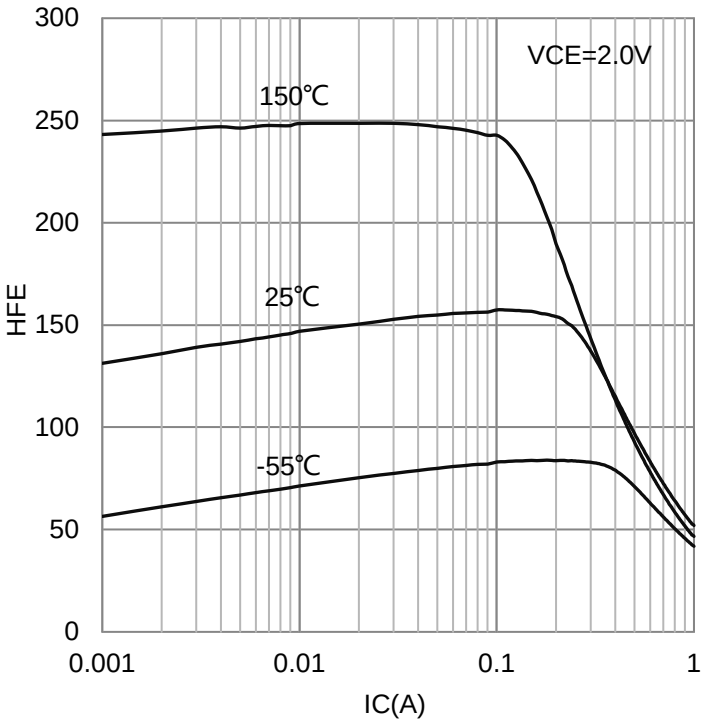
1. FR–4 = 30.0mm×25.0mm×1.6mm.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

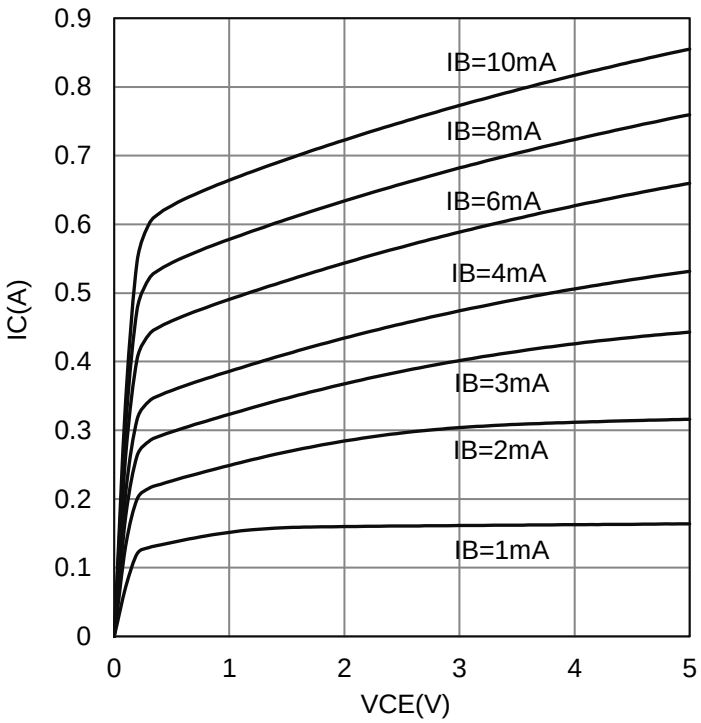
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 1.0 mA, IB = 0)	VBR(CEO)	80	-	-	V
Collector–Base Breakdown Voltage (IC = 100 μA, IE = 0)	VBR(CBO)	100	-	-	V
Emitter–Base Breakdown Voltage (IE = 100 μA, IC = 0)	VBR(EBO)	5	-	-	V
Collector-Base Cutoff Current (VCB = 30 V, IE = 0 A) (VCB = 30 V, IE = 0 A,Tj = 150℃)	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%.

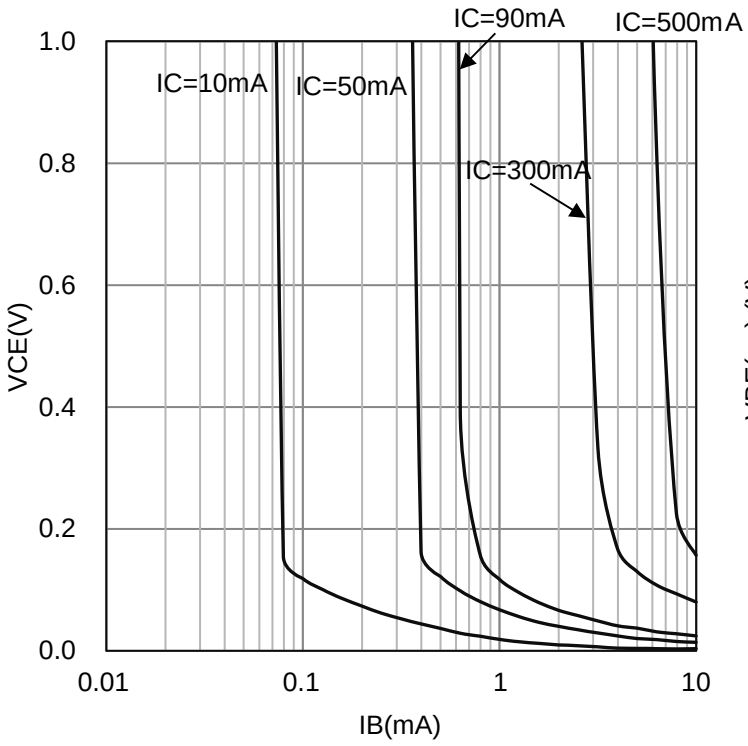
6.ELECTRICAL CHARACTERISTICS CURVES



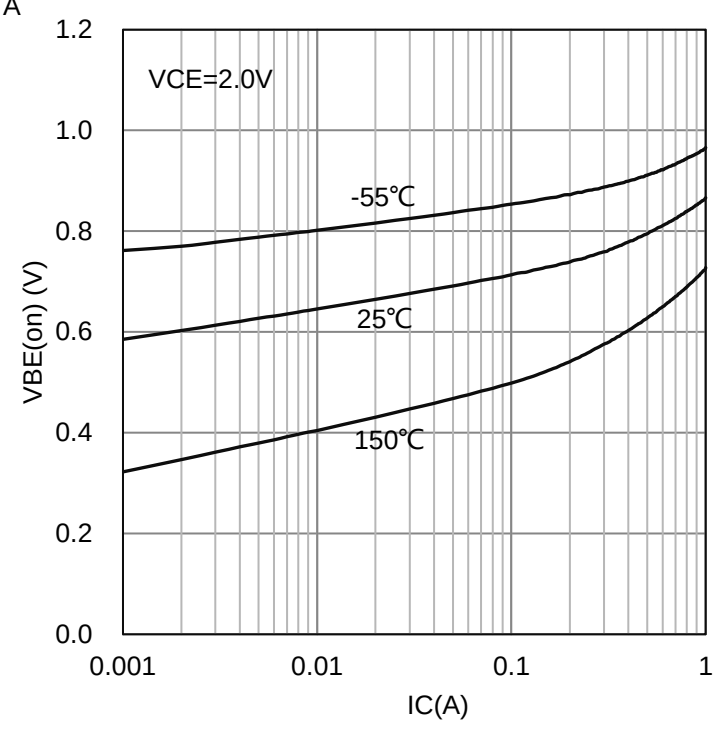
HFE vs. IC



IC vs. VCE

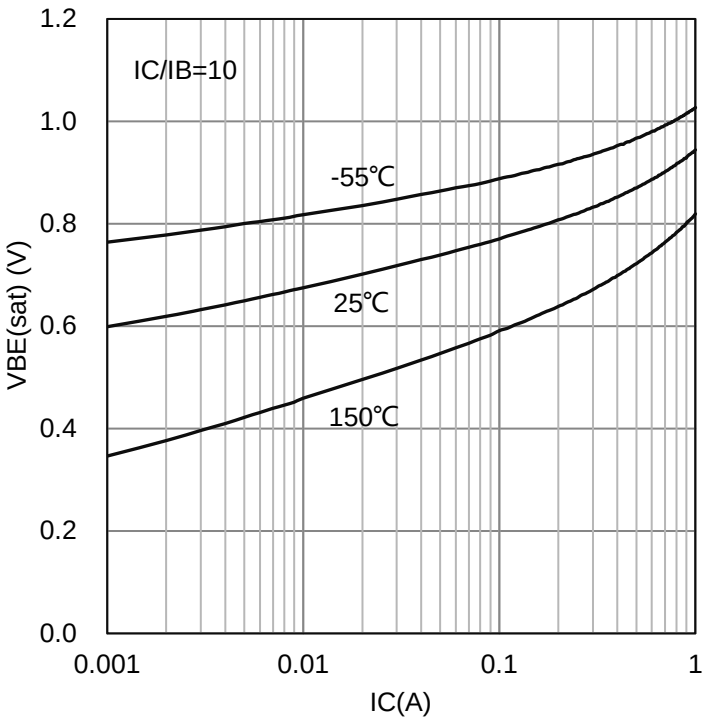


VCE vs. IB

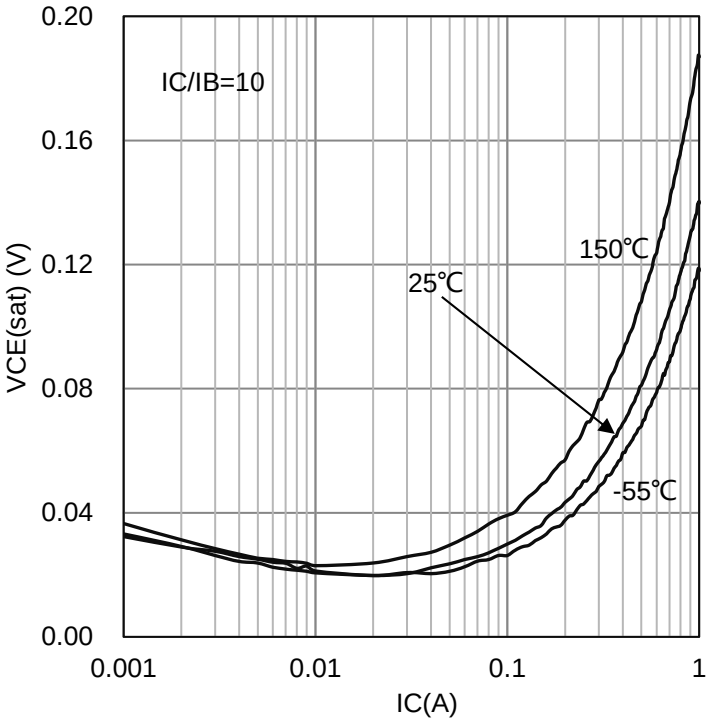


VBE(on) vs. IC

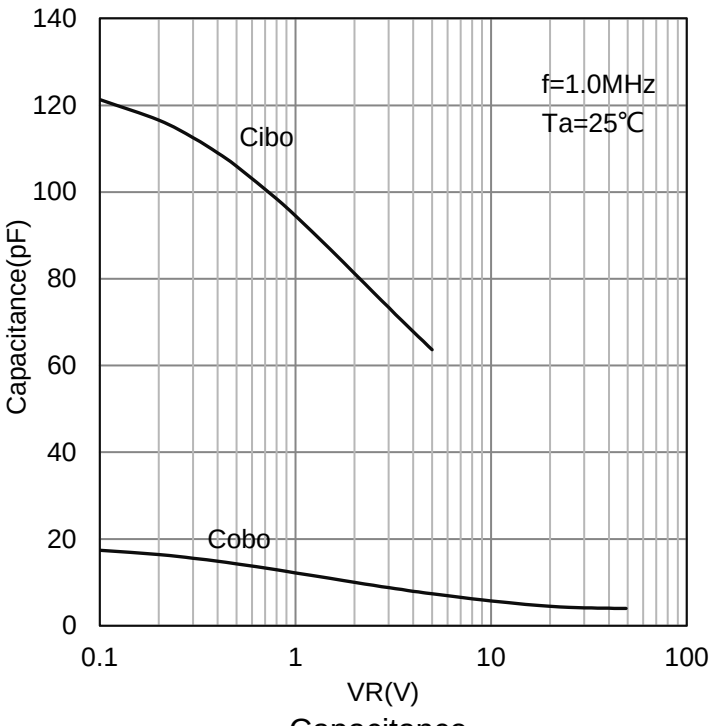
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



VBE(sat) vs. IC



VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

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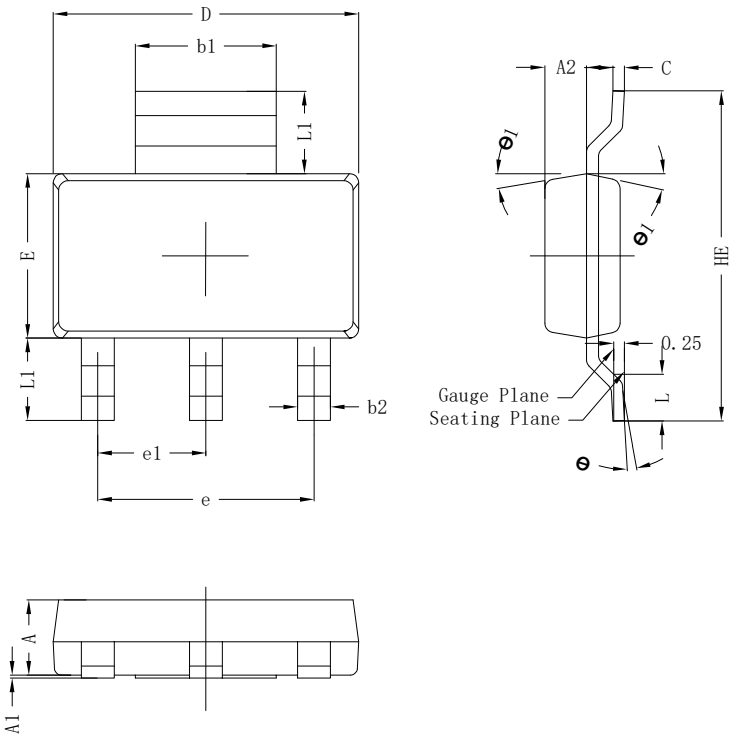

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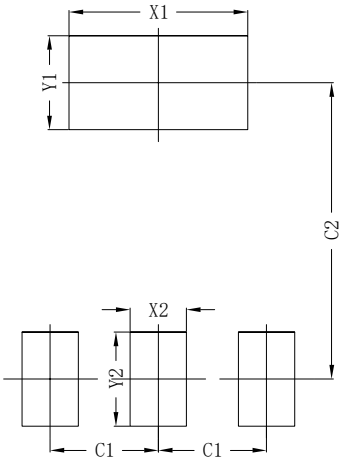
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ 1	8°	10°	12°
All Dimensions in mm			

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

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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