LBTP4140Z4TZHG
S-LBTP4140Z4TZHG

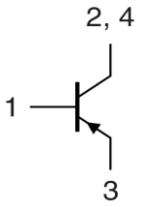
140V PNP MEDIUM POWER TRANSISTOR



SOT223

1. FEATURES

- BVCEO > -140V
- High Continuous Collector Current
- Low Saturation Voltage
- HBM＞4KV
- 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
LBTP4140Z4TZHG	PA	1000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	-140	V
Collector–Base Voltage	VCBO	-180	V
Emitter–Base Voltage	VEBO	-7	V
Collector Current — Continuous	IC	-4	A
Peak Pulse Current	ICM	-10	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	1	W
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	125	ºC/W

1. FR–4 = 30.0mm×25.0mm×1.6mm.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = -10 mA, IB = 0)	VBR(CEO)	-140	-170	-	V
Collector–Base Breakdown Voltage (IC = -100 μA, IE = 0)	VBR(CBO)	-180	-210	-	V
Emitter–Base Breakdown Voltage (IE = -100 μA, IC = 0)	VBR(EBO)	-7	-8	-	V
Collector Cutoff Current (VCB = -150V)	ICBO	-	-	-50	nA
(VCB = -150V, Ta = 100°C)		-	-	-1	μA
Emitter CutOff Current (VEB = -6V)	IEBO	-	-	-10	nA

ON CHARACTERISTICS (Note 2.)

DC Current Gain					
(IC = -10mA, VCE = -5V)	HFE	100	200	-	
(IC = -1A, VCE = -5V)		100	200	300	
(IC = -3A, VCE = -5V)		45	-	-	
(IC = -10A, VCE = -5V)		-	10	-	
Collector–Emitter Saturation Voltage					mV
(IC = -100mA, IB = -5mA)	VCE(sat)	-	-30	-60	
(IC = -500mA, IB = -50mA)		-	-70	-120	
(IC = -1A, IB = -100mA)		-	-110	-150	
(IC = -3A, IB = -300mA)		-	-275	-370	
Base–Emitter Saturation Voltage (IC = -3A, IB = -300mA)	VBE(sat)	-	-970	-1110	mV
Base-Emitter Turn-On Voltage (IC = -3A, VCE = -5V)	VBE(on)	-	-830	-950	mV

SMALL–SIGNAL CHARACTERISTICS

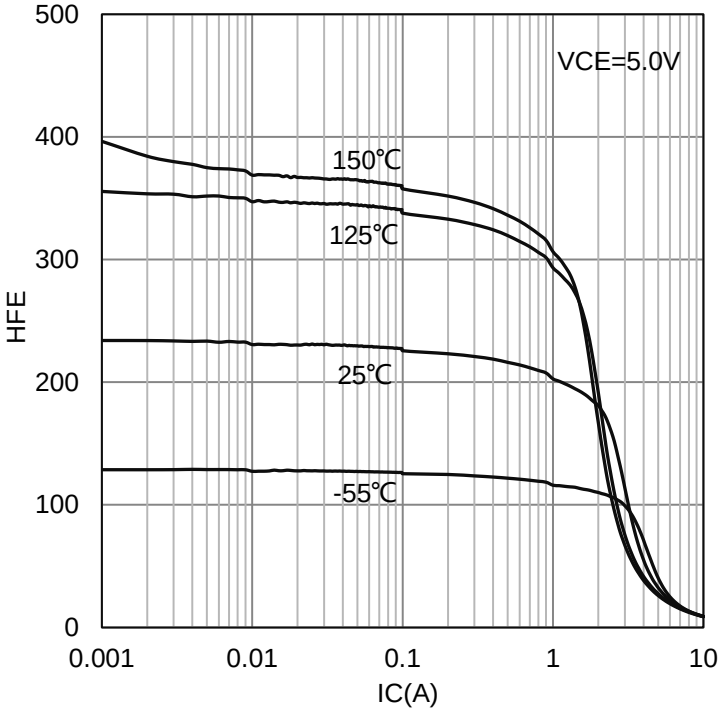
Transitional Frequency (IC = -100mA, VCE = -10V,f = 50MHz)	fT	-	110	-	MHz
Output Capacitance (VCB = -20V, f = 1MHz)	Cobo	-	40	-	pF

SWITCHING CHARACTERISTICS

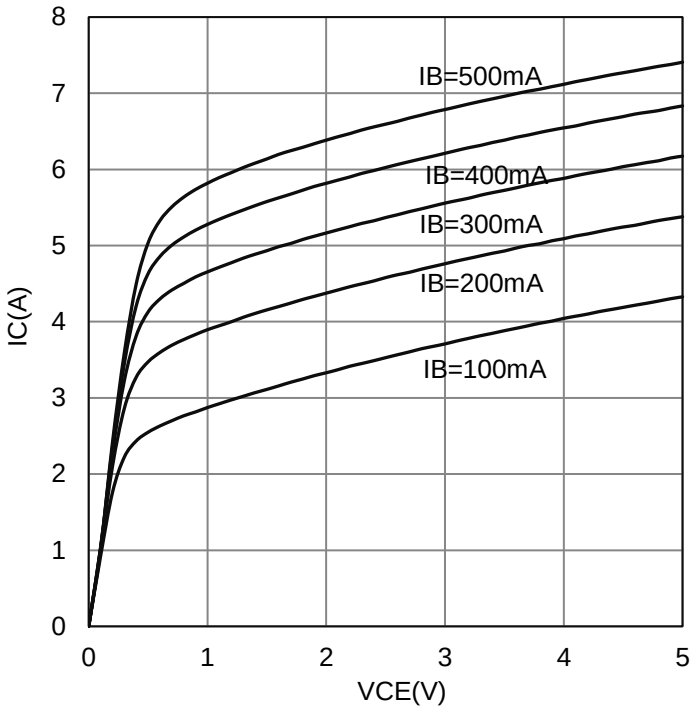
Switching Time	(VCC = -50V, IC = -1A,-IB1 = IB2 = -100mA)	t(on)	-	42	-	ns
		t(off)	-	764	-	

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

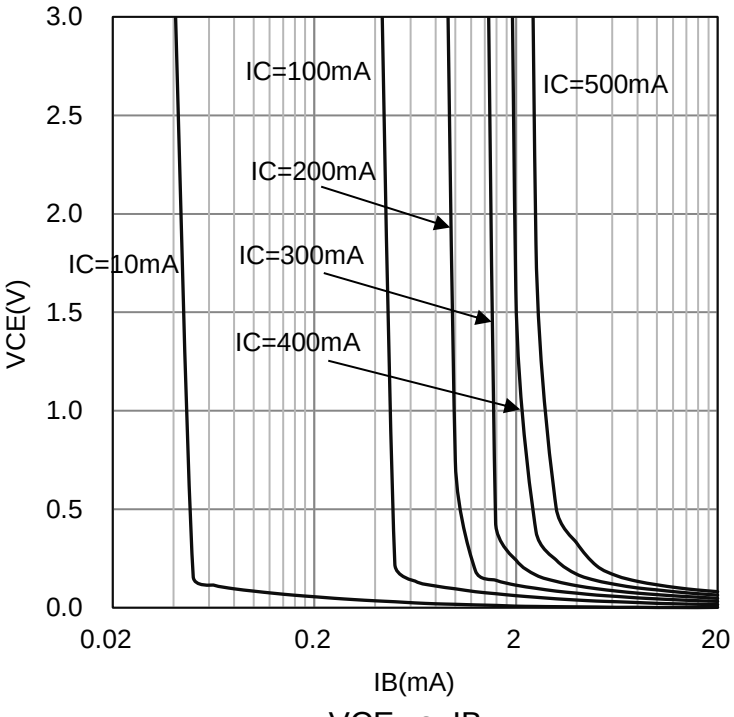
6.ELECTRICAL CHARACTERISTICS CURVES



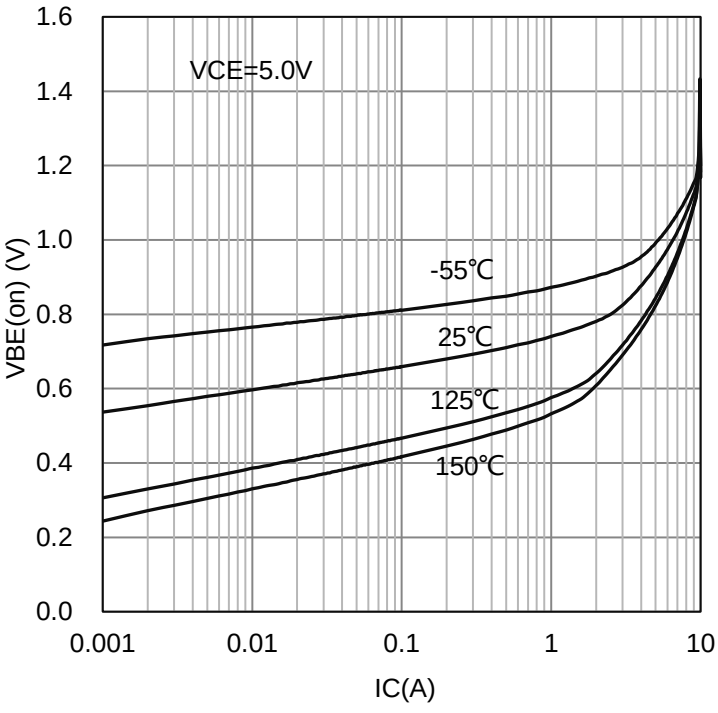
HFE vs. IC



IC vs. VCE

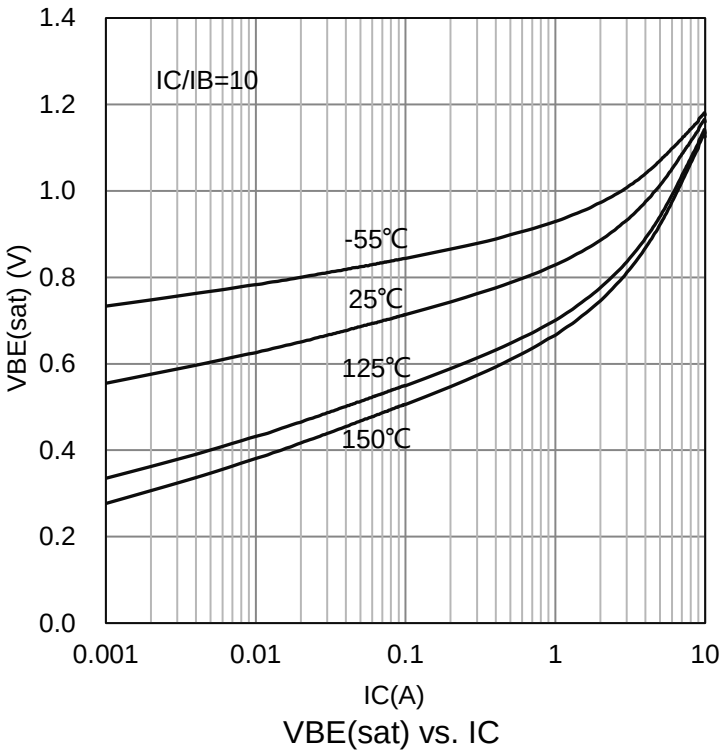


VCE vs. IB

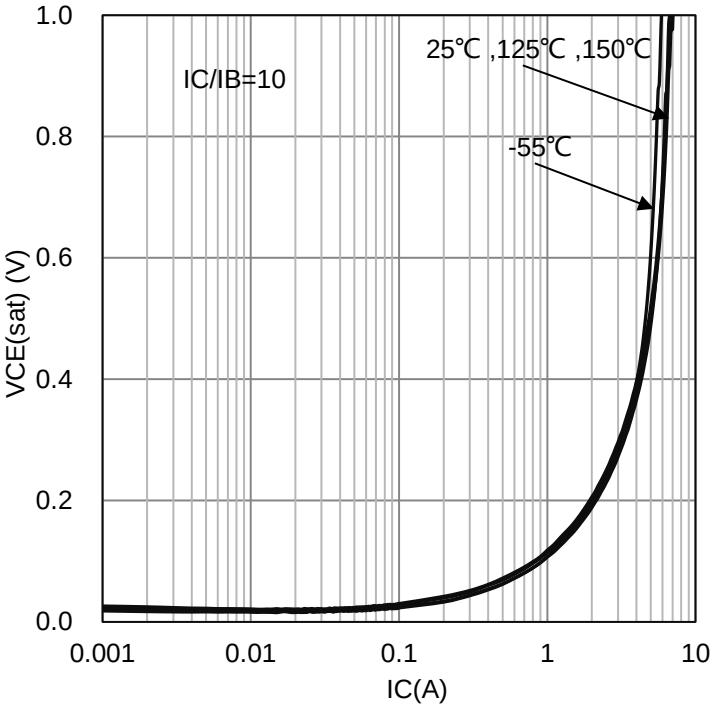


VBE(on) vs. IC

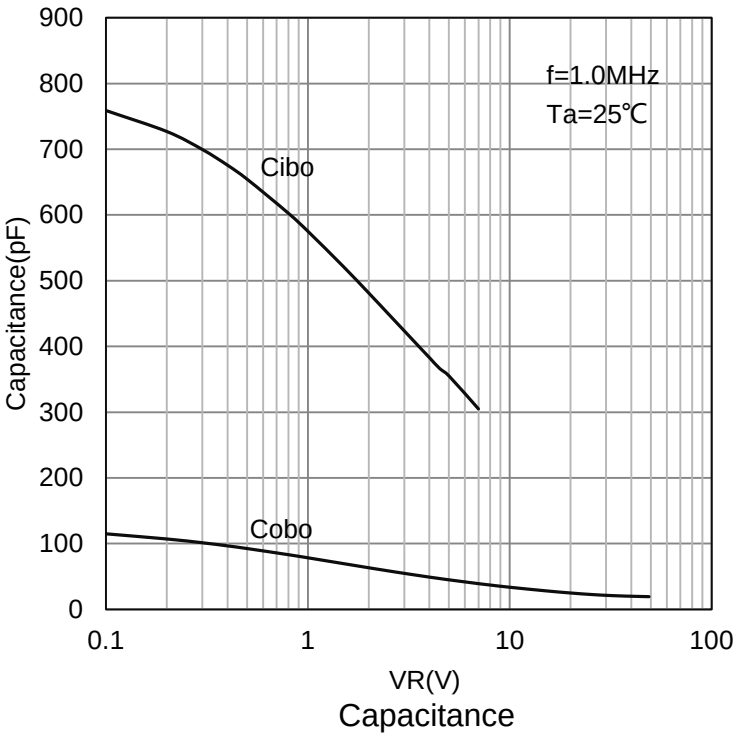
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



VBE(sat) vs. IC



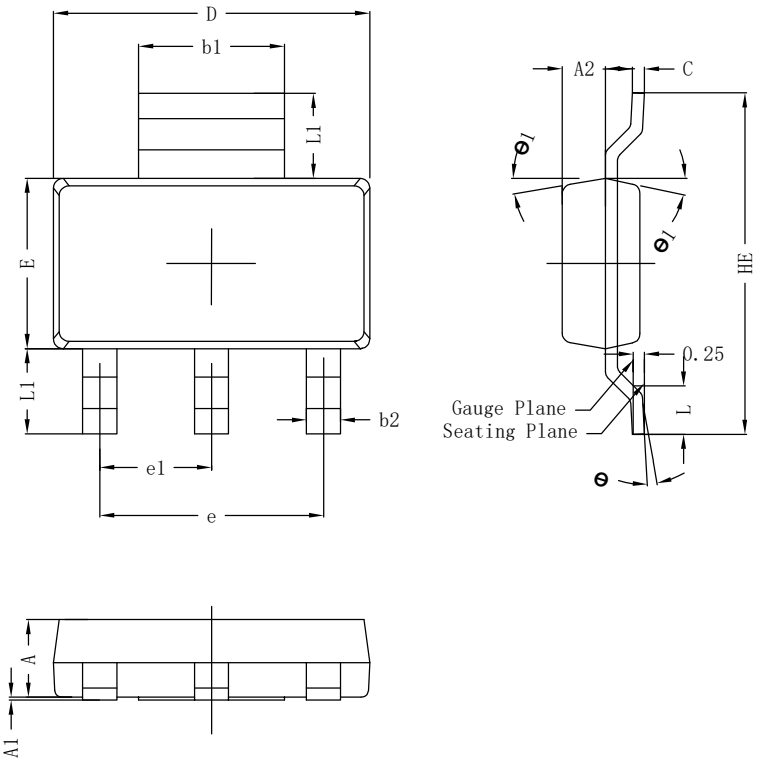
VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

SOT223

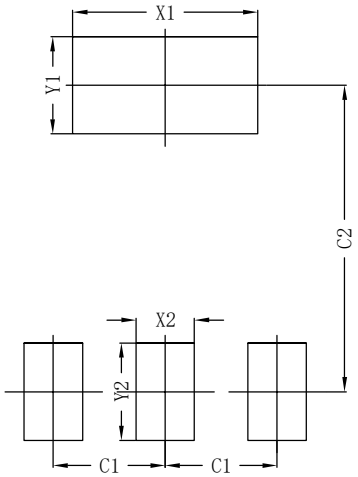


SOT223			
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.30
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ 1	8°	10°	12°
All Dimensions in mm			

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