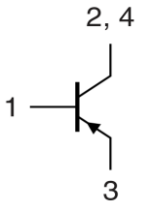
LBTP4140Z4TZHG
S-LBTP4140Z4TZHG

140V PNP MEDIUM POWER TRANSISTOR

SOT223

1. FEATURES

- BVCEO > -140V
- High Continuous Collector Current
- Low Saturation Voltage
- 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
Human Body Model Electrostatic Discharge	HBM	2000	V
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

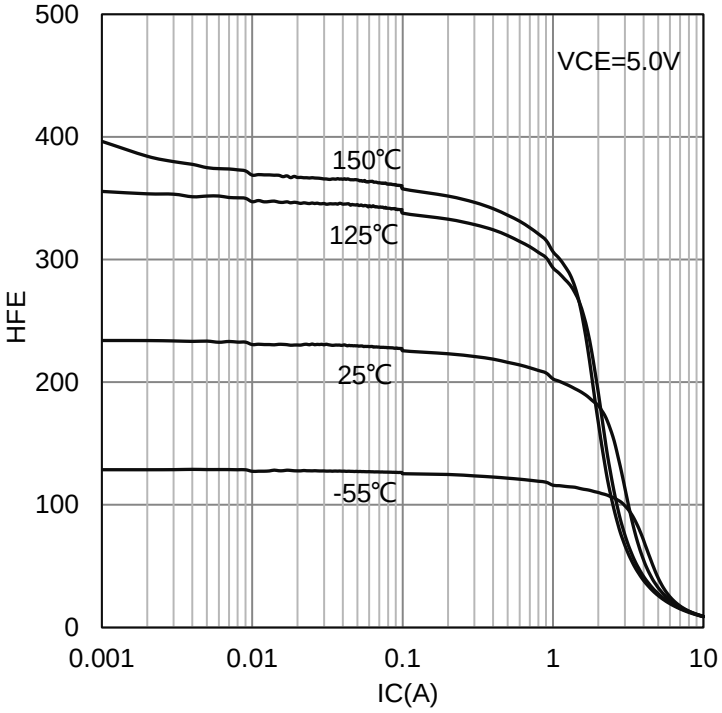
Transitional Frequency (IC = -100mA, VCE = -10V,f = 50MHz)	fT	-	110	-	MHz
Output Capacitance (VCB = -20V, f = 1MHz)	Cobo	-	40	-	pF

SWITCHING CHARACTERISTICS

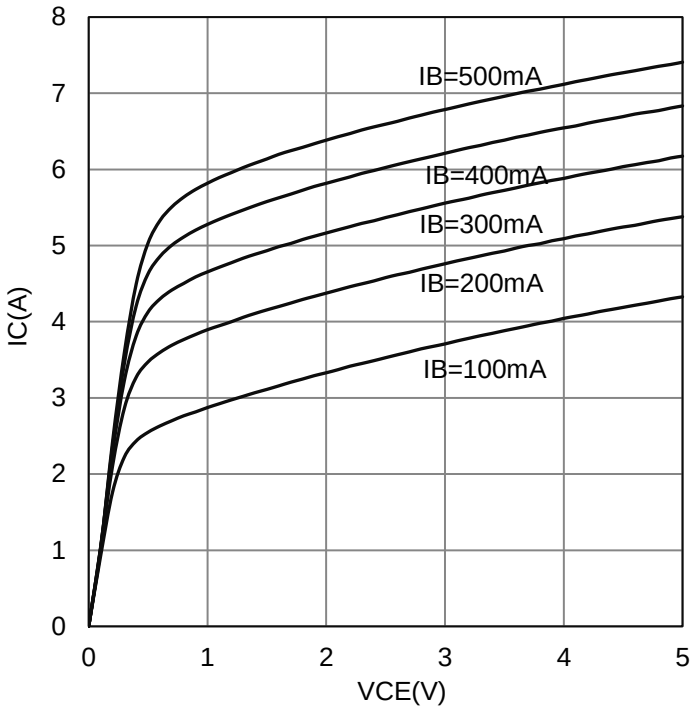
Switching Time	(VCC = -50V, IC = -1A,-IB1 = IB2 = -100mA)	t(on)	-	42	-	ns
		t(off)	-	764	-	

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

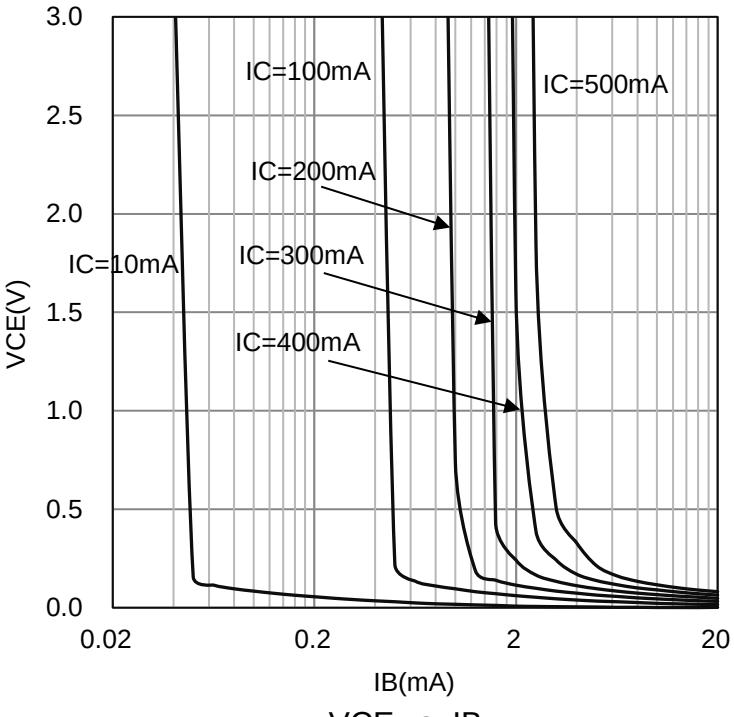
6.ELECTRICAL CHARACTERISTICS CURVES



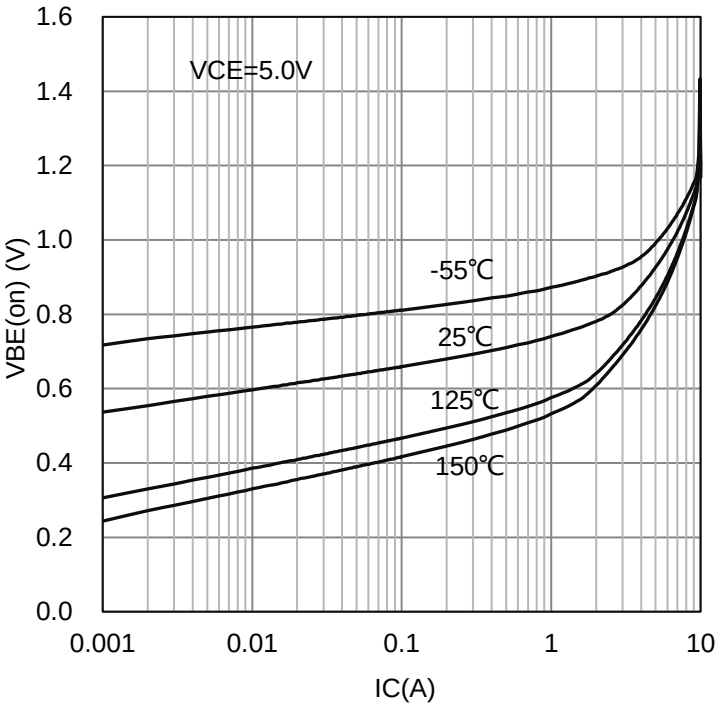
HFE vs. IC



IC vs. VCE

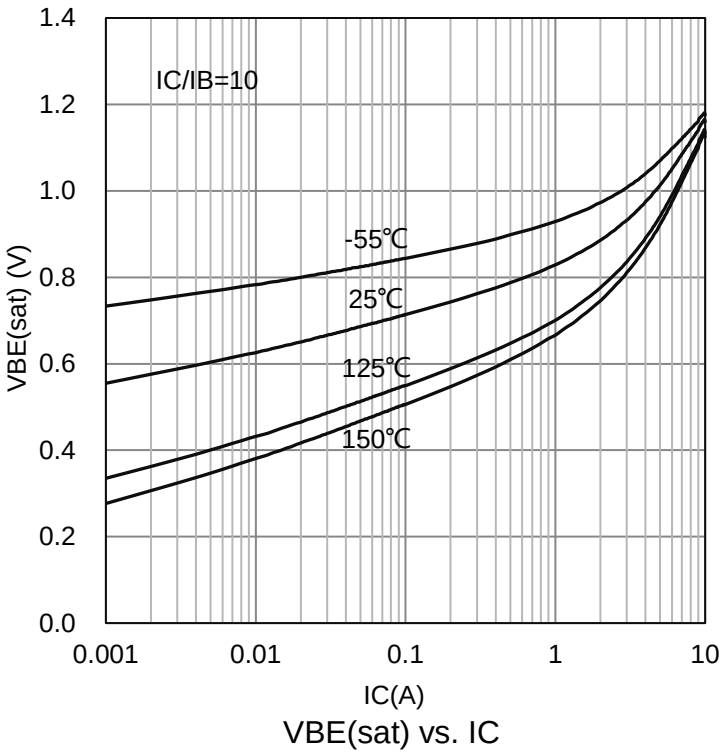


VCE vs. IB

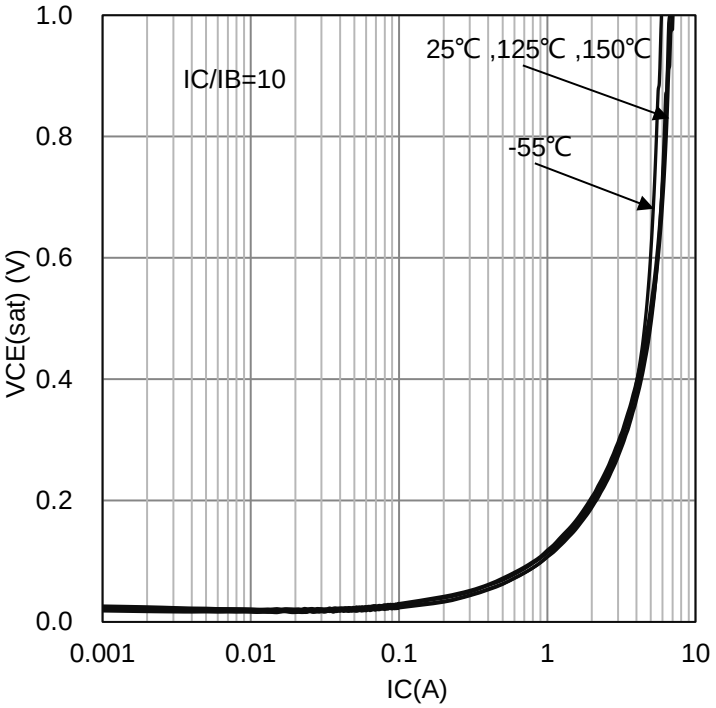


VBE(on) vs. IC

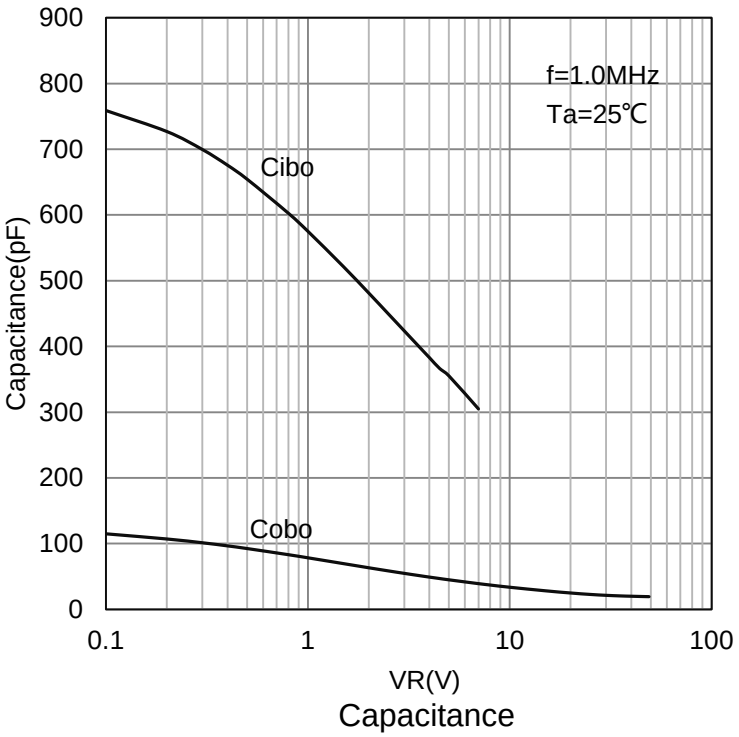
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



VBE(sat) vs. IC



VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

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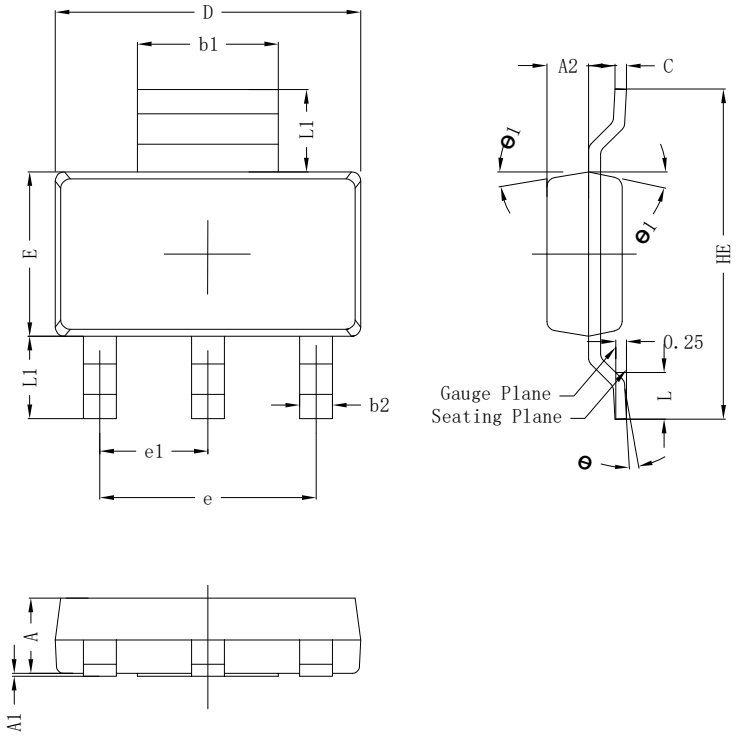

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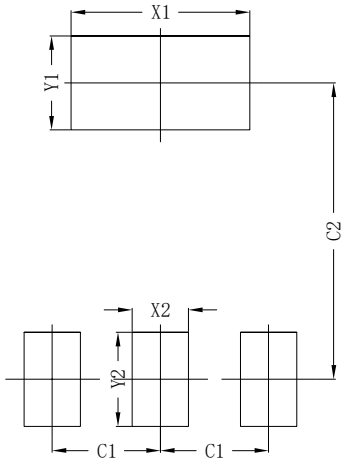
DIM	MIN	NOR	MAX
A	1.50	1.60	1.70
A1	0.00	0.05	0.10
A2	0.80	0.90	1.00
b1	2.90	3.02	3.10
b2	0.60	0.72	0.80
c	0.20	0.27	0.35
D	6.30	6.50	6.70
E	3.30	3.50	3.70
e	4.60BSC		
e1	2.30BSC		
HE	6.80	7.00	7.20
L	0.80	1.00	1.20
L1	1.75(REF)		
θ	0°~8°		
θ1	8°	10°	12°
All Dimensions in mm			

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

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