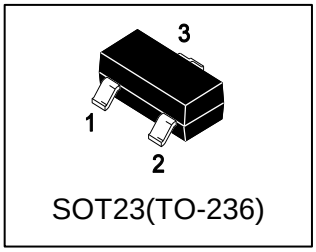
LMBT3906LT1G

General Purpose Transistors PNP Silicon



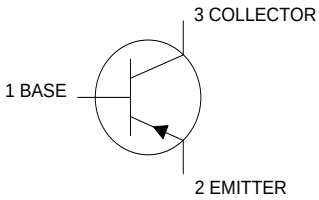
SOT23(TO-236)

1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LMBT3906LT1G	2A	3000/Tape&Reel
LMBT3906LT3G	2A	13000/Tape&Reel



3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	-40	V
Collector–Base Voltage	VCBO	-40	V
Emitter–Base Voltage	VEBO	-5	V
Collector Current — Continuous	IC	-200	mA

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation,	PD		
FR−5 Board (Note 1) @ TA = 25ºC		225	mW
Derate above 25ºC		1.8	mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	ºC

1. FR–5 = 1.0×0.75×0.062 in.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = -1.0 mA, IB = 0)	VBR(CEO)	-40	-	-	V
Collector–Base Breakdown Voltage (IC = -10 μA, IE = 0)	VBR(CBO)	-40	-	-	V
Emitter–Base Breakdown Voltage (IE = -10 μA, IC = 0)	VBR(EBO)	-5	-	-	V
Collector Cutoff Current (VCE = -30 V, VEB = -3.0V)	ICEX	-	-	-50	nA
Base Cutoff Current (VCE = -30 V, VEB = -3.0V)	IBL	-	-	-50	nA

ON CHARACTERISTICS (Note 2.)

DC Current Gain	HFE				
(IC = -0.1 mA, VCE = -1.0 V)		60	-	-	
(IC = -1.0 mA, VCE = -1.0 V)		80	-	-	
(IC = -10 mA, VCE = -1.0 V)		100	-	300	
(IC = -50 mA, VCE = -1.0 V)		60	-	-	
(IC = -100 mA, VCE = -1.0 V)		30	-	-	
Collector–Emitter Saturation Voltage	VCE(sat)				V
(IC = -10 mA, IB = -1.0 mA)		-	-	-0.25	
(IC = -50 mA, IB = -5.0 mA)		-	-	-0.4	
Base–Emitter Saturation Voltage	VBE(sat)				V
(IC = -10 mA, IB = -1.0 mA)		-0.65	-	-0.85	
(IC = -50 mA, IB = -5.0 mA)		-	-	-0.95	

SMALL–SIGNAL CHARACTERISTICS

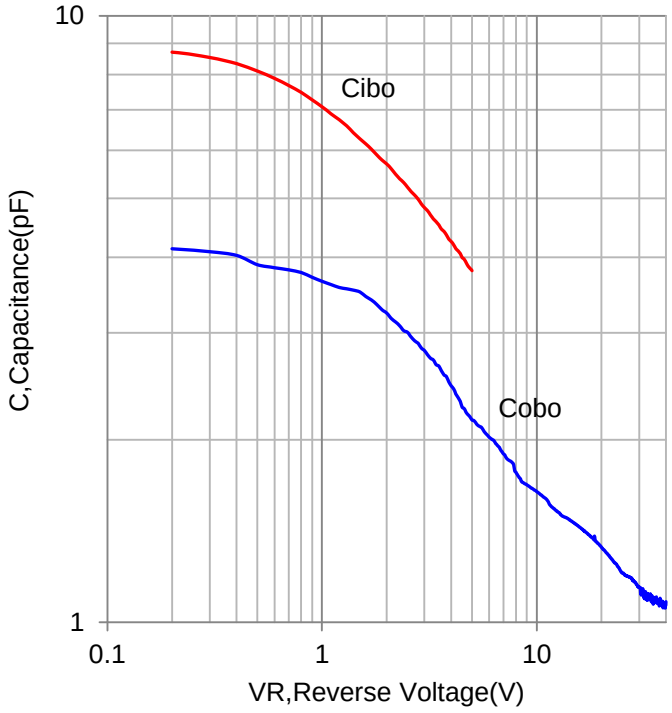
Current–Gain — Bandwidth Product (IC = -10mA, VCE= -20V, f = 100MHz)	fT	250	-	-	MHz
Output Capacitance (VCB = -5.0 V, IE = 0, f = 1.0 MHz)	Cobo	-	-	4.5	pF
Input Capacitance (VEB = -0.5 V, IC = 0, f = 1.0 MHz)	Cibo	-	-	10	pF

SWITCHING CHARACTERISTICS

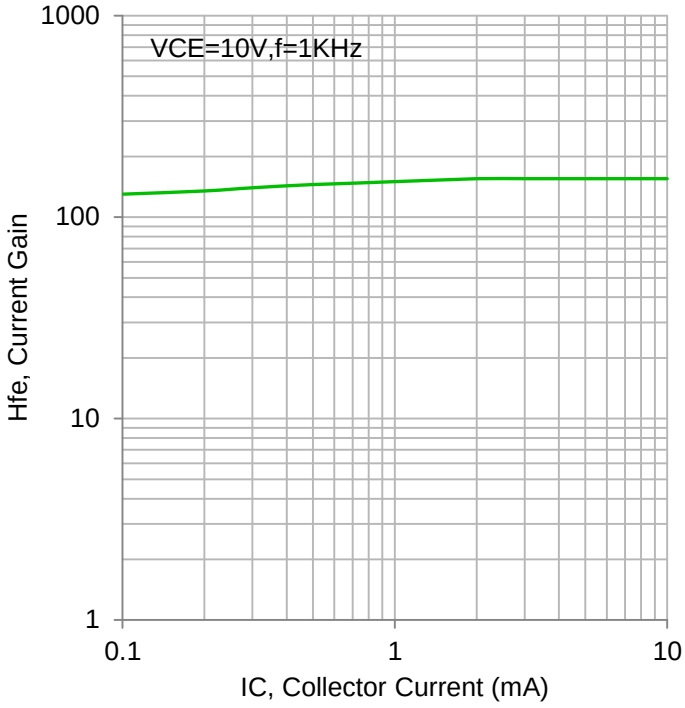
Delay Time	(VCC = -3.0 V,VBE=0.5V, IC = -10mA, IB1 = -1.0 mA)	td	-	-	35	ns
Rise Time		tr	-	-	35	
Storage Time	(VCC = -3.0 V, IC = -10 mA,IB1 = IB2 = -1.0 mA)	ts	-	-	225	
Fall Time		tf	-	-	75	

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

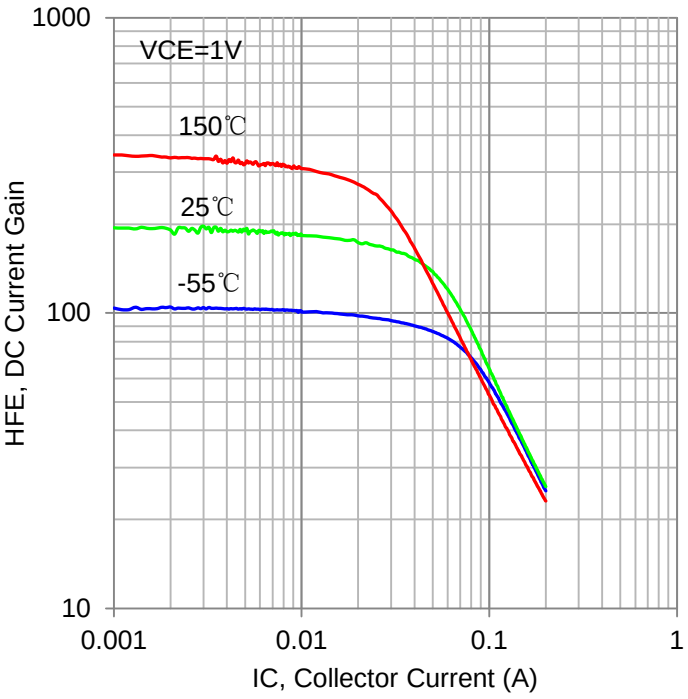
6. ELECTRICAL CHARACTERISTICS CURVES



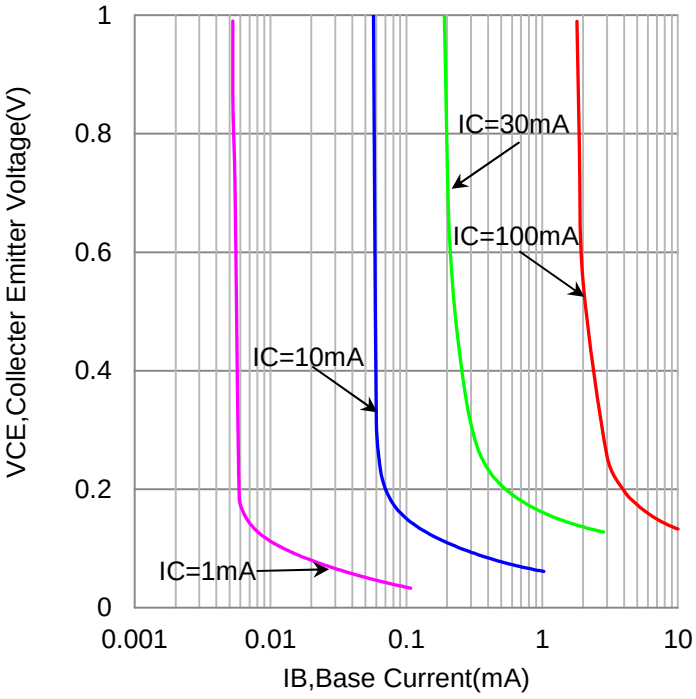
Capacitance



Current Gain

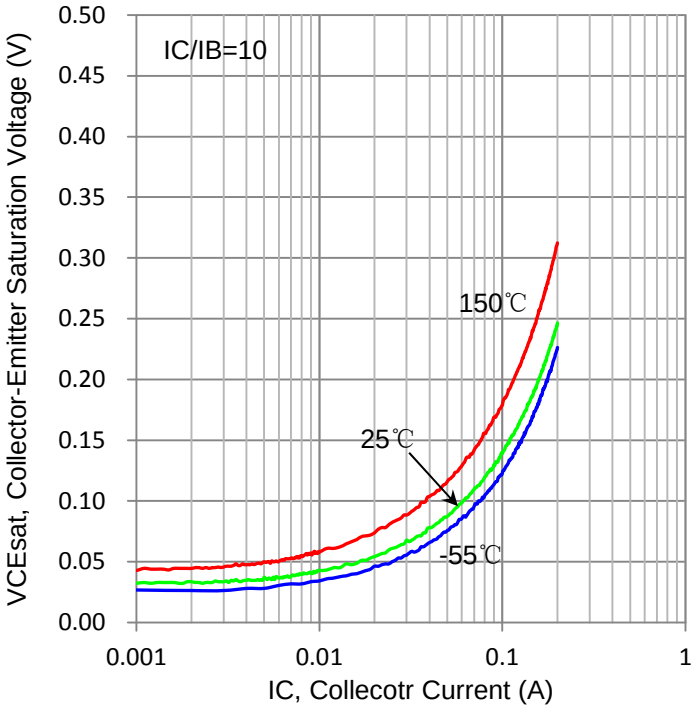


DC Current Gain

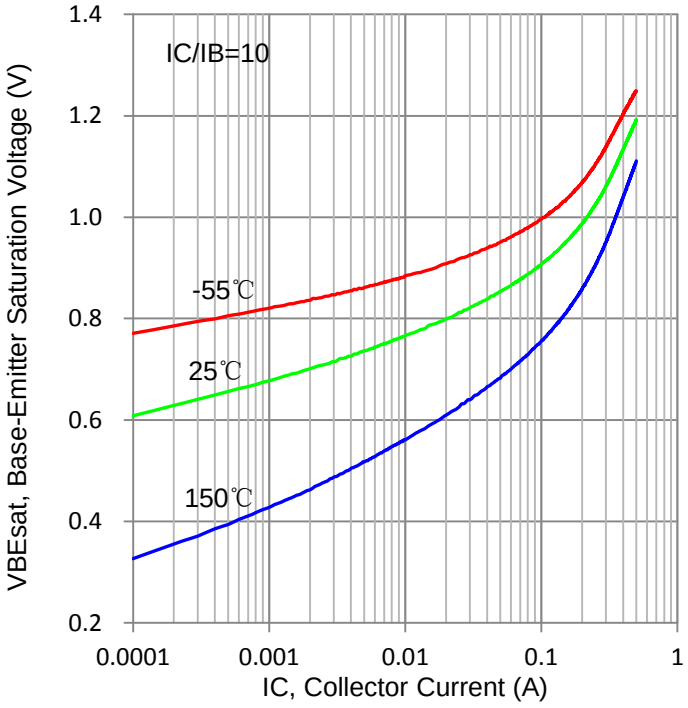


Collector Saturation Region

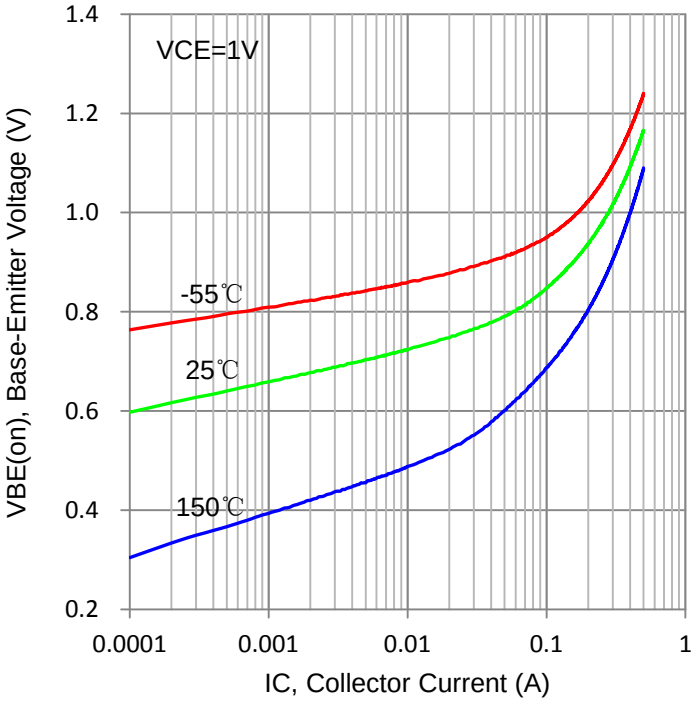
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



VCE(sat) vs. IC

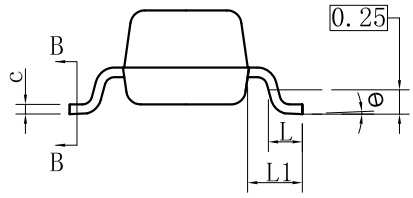


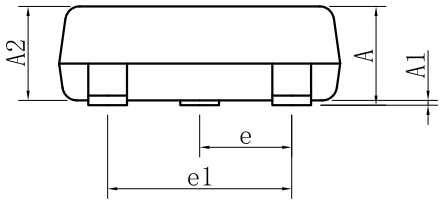
VBE(sat) vs. IC

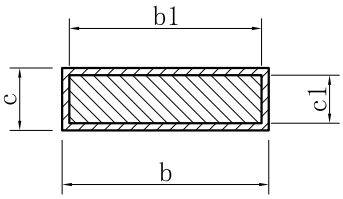


VBE(on) vs. IC

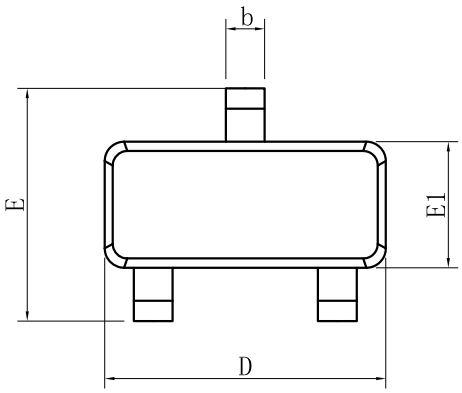
7.OUTLINE AND DIMENSIONS







SECTION B-B

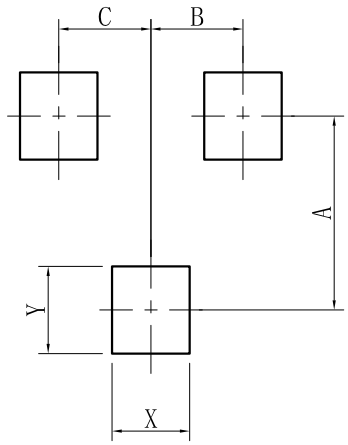


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

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

8.SOLDERING FOOTPRINT



SOT-23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

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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