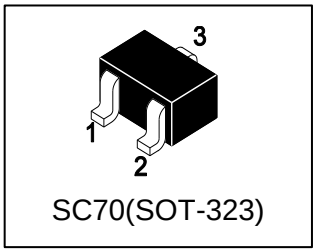
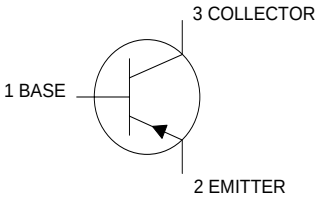
LMBT3906WT1G
S-LMBT3906WT1G

General Purpose Transistors PNP Silicon



SC70(SOT-323)



1. FEATURES

- 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
LMBT3906WT1G	2A	3000/Tape&Reel
LMBT3906WT3G	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, FR−5 Board (Note 1) @ TA = 25ºC Derate above 25ºC	PD	 150 1.2	 mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	833	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

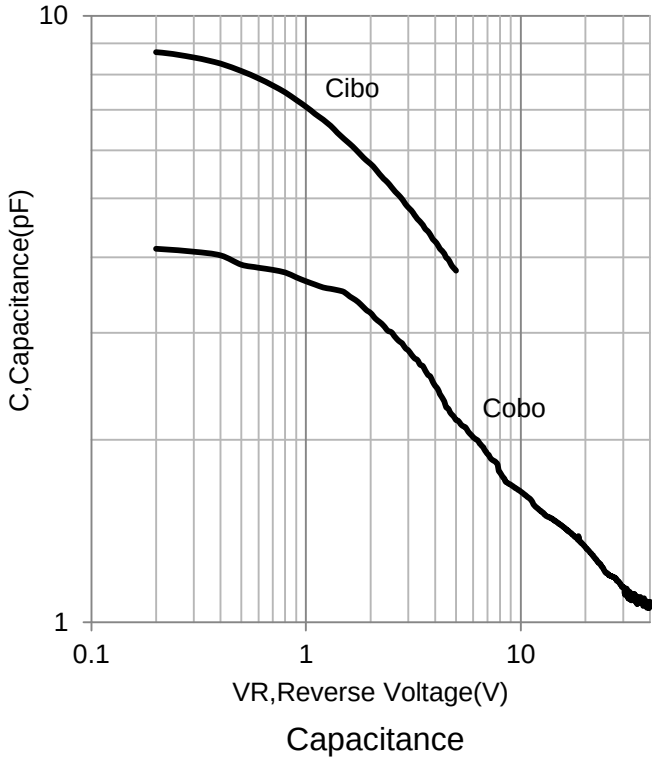
Current–Gain — Bandwidth Product (IC = -10mA, VCE= -20V, f = 100MHz)	fT	250	-	-	MHz
Output Capacitance (VCB = -5.0 V, IE = 0, f = 1.0 MHz)	Cobo	-	-	4.5	pF
Input Capacitance (VEB = -0.5 V, IC = 0, f = 1.0 MHz)	Cibo	-	-	10	pF

SWITCHING CHARACTERISTICS

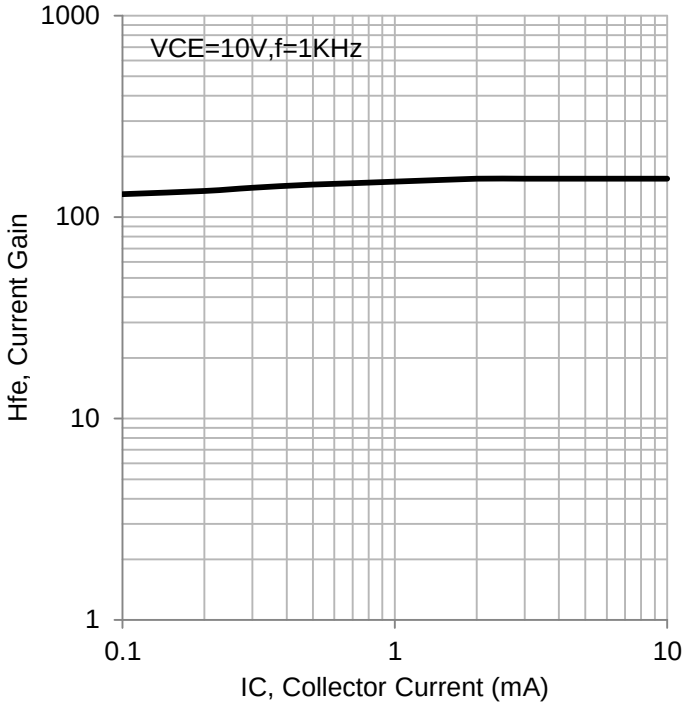
Delay Time	(VCC = -3.0 V,VBE=0.5V, IC = -10mA, IB1 = -1.0 mA)	td	-	-	35	ns
Rise Time		tr	-	-	35	
Storage Time	(VCC = -3.0 V, IC = -10 mA,IB1 = IB2 = -1.0 mA)	ts	-	-	225	
Fall Time		tf	-	-	75	

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

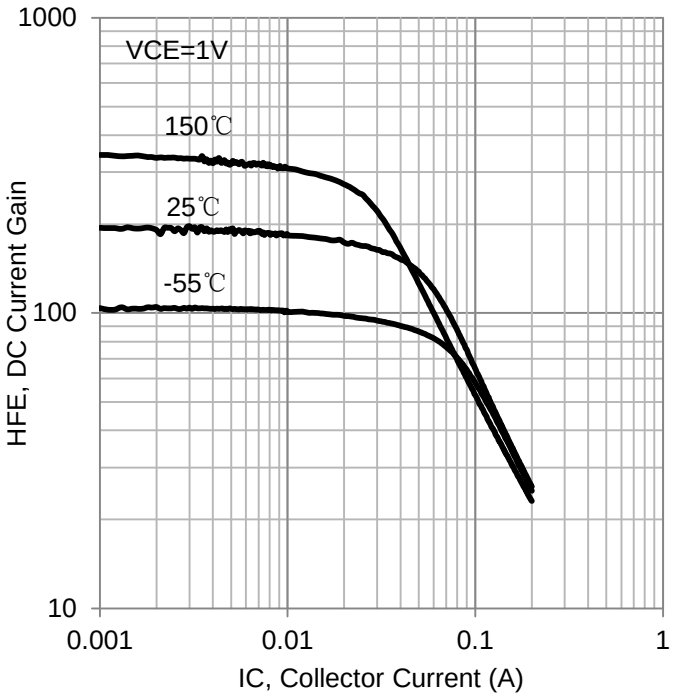
6. ELECTRICAL CHARACTERISTICS CURVES



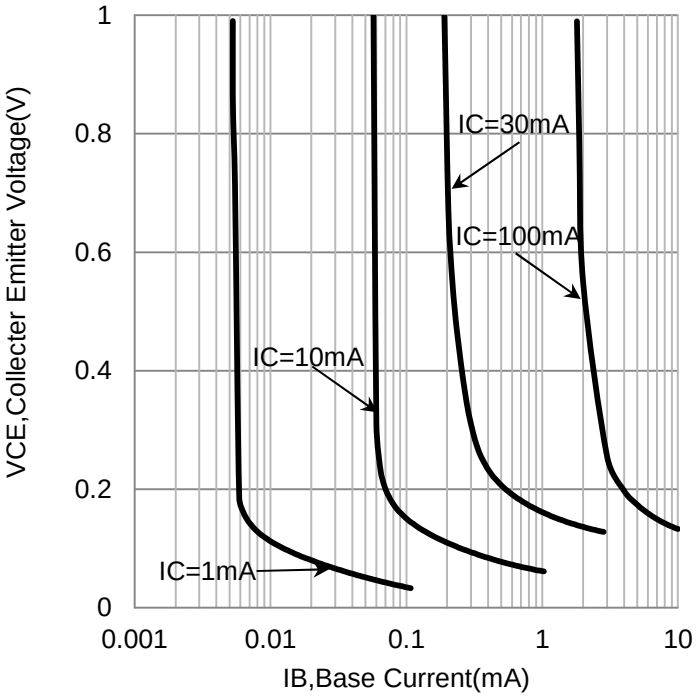
Capacitance



Current Gain

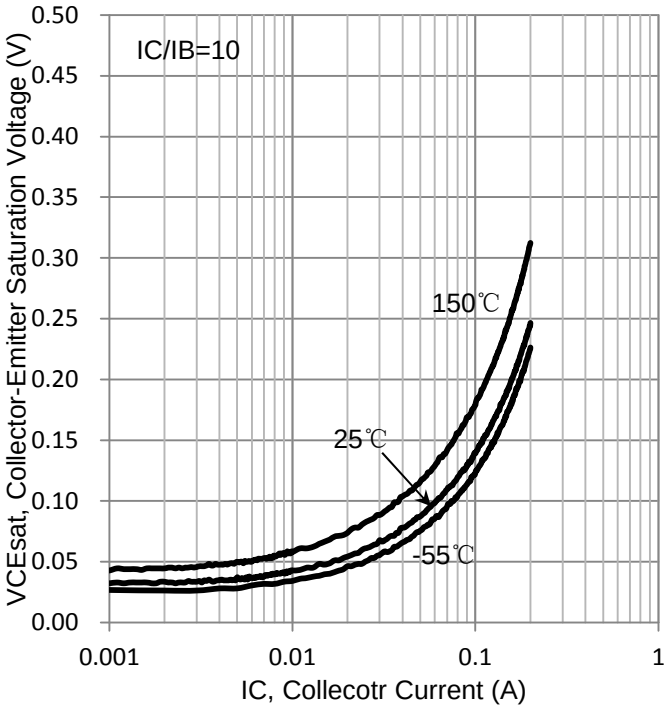


DC Current Gain

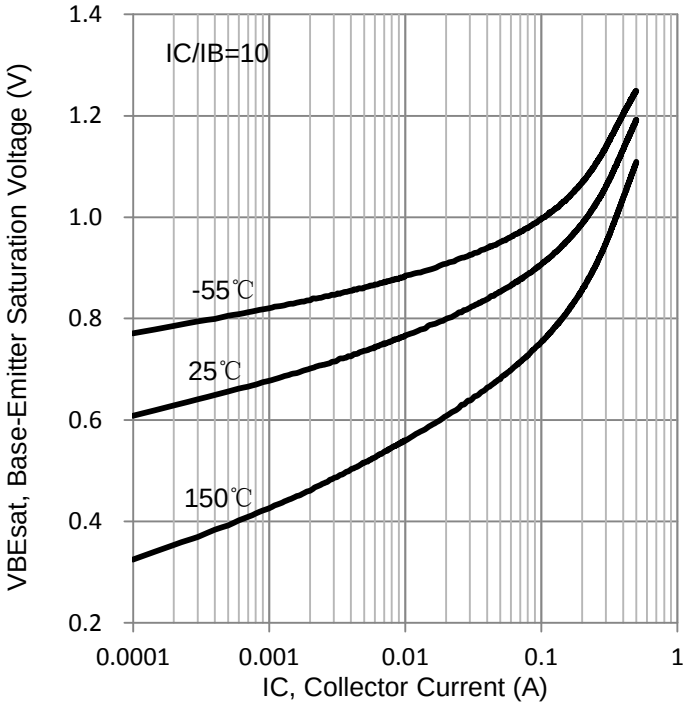


Collector Saturation Region

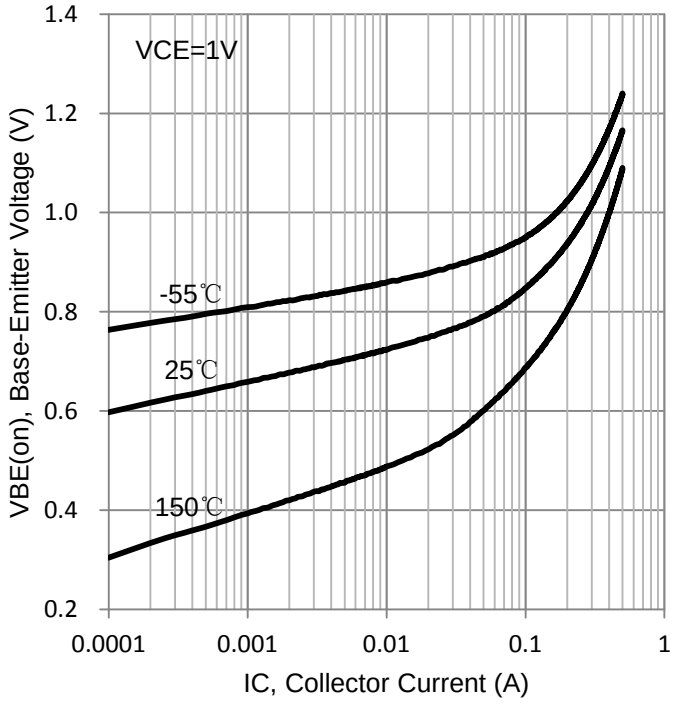
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



VCE(sat) vs. IC

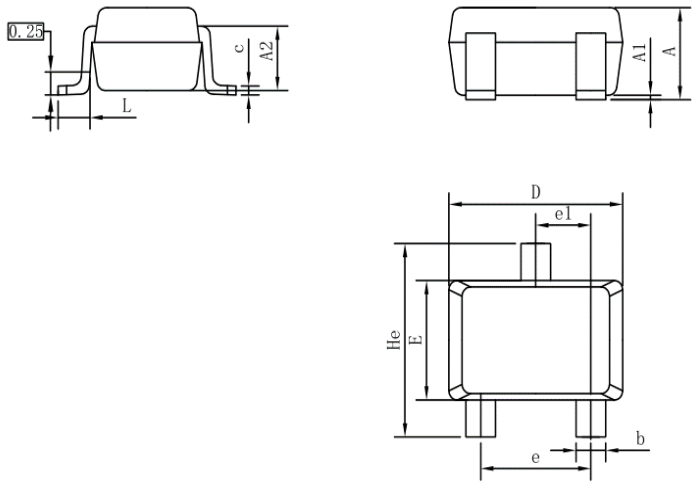


VBE(sat) vs. IC



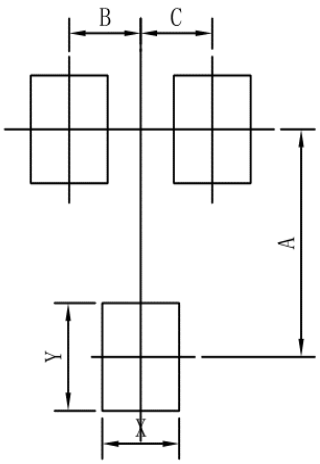
VBE(on) vs. IC

7.OUTLINE AND DIMENSIONS



SC70			
DIM	MIN	NOR	MAX
A	0.80	0.95	1.00
A1	0.00	0.05	0.10
A2		0.7 REF	
b	0.30	0.35	0.40
c	0.10	0.15	0.25
D	1.80	2.05	2.20
E	1.15	1.30	1.35
e	1.20	1.30	1.40
e1		0.65 BSC	
L	0.20	0.35	0.56
He	2.00	2.10	2.40
ALL Dimension in mm			

8.SOLDERING FOOTPRINT



SC70	
DIM	(mm)
A	1.90
B	0.65
C	0.65
X	0.70
Y	0.90

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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