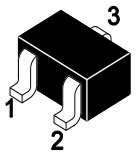
LMBT3904WT1G
S-LMBT3904WT1G

General Purpose Transistors NPN Silicon

1. FEATURES

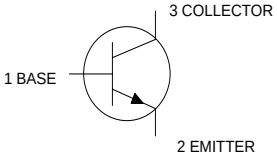
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.



SC70(SOT-323)

2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LMBT3904WT1G	AM	3000/Tape&Reel
LMBT3904WT3G	AM	10000/Tape&Reel



3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	40	Vdc
Collector–Base Voltage	VCBO	60	Vdc
Emitter–Base Voltage	VEBO	6	Vdc
Collector Current — Continuous	IC	200	mAdc

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	º C

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 mAdc, IB = 0)	VBR(CEO)	40	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μAdc, IE = 0)	VBR(CBO)	60	-	-	V
Emitter–Base Breakdown Voltage (IE = 10 μAdc, IC = 0)	VBR(EBO)	6	-	-	V
Collector Cutoff Current (VCE = 30 Vdc, VEB = 3.0Vdc)	ICEX	-	-	50	nA
Base Cutoff Current (VCE = 30 Vdc, VEB = 3.0Vdc)	IBL	-	-	50	nA

ON CHARACTERISTICS (Note 2.)

DC Current Gain	HFE				
(IC = 0.1 mAdc, VCE = 10 Vdc)		40	-	-	
(IC = 1.0 mAdc, VCE = 1.0 Vdc)		70	-	-	
(IC = 10 mAdc, VCE = 1.0 Vdc)		100	-	300	
(IC = 50 mAdc, VCE = 1.0 Vdc)		60	-	-	
(IC = 100 mAdc, VCE = 1.0 Vdc)		30	-	-	
Collector–Emitter Saturation Voltage	VCE(sat)				V
(IC = 10 mAdc, IB = 1.0 mAdc)		-	-	0.2	
(IC = 50 mAdc, IB = 5.0 mAdc)		-	-	0.3	
Base–Emitter Saturation Voltage	VBE(sat)				V
(IC = 10 mAdc, IB = 1.0 mAdc)		0.65	-	0.85	
(IC = 50 mAdc, IB = 5.0 mAdc)		-	-	0.95	

SMALL–SIGNAL CHARACTERISTICS

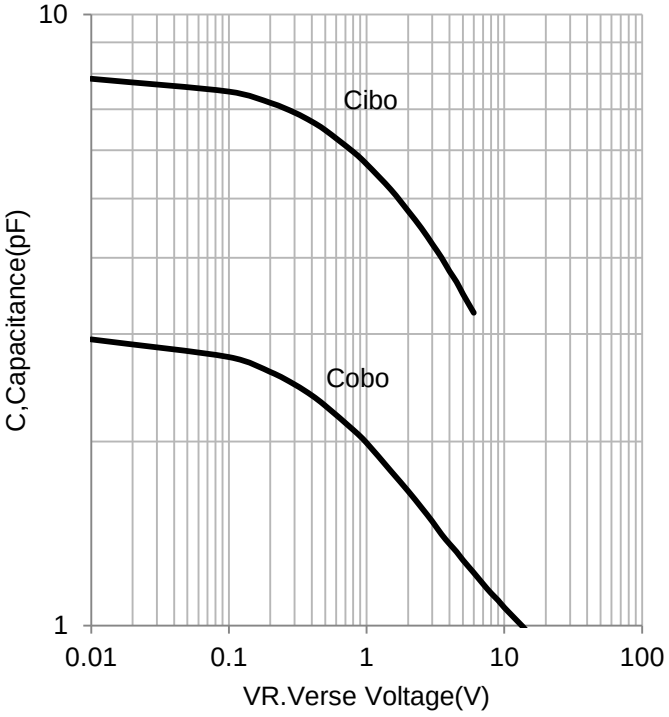
Current–Gain — Bandwidth Product (IC = 10mAdc, VCE= 20Vdc, f = 100MHz)	fT	300	-	-	MHz
Output Capacitance (VCB = 5.0 Vdc, IE = 0, f = 1.0 MHz)	Cobo	-	-	4	pF
Input Capacitance (VEB = 0.5 Vdc, IC = 0, f = 1.0 MHz)	Cibo	-	-	8	pF

SWITCHING CHARACTERISTICS

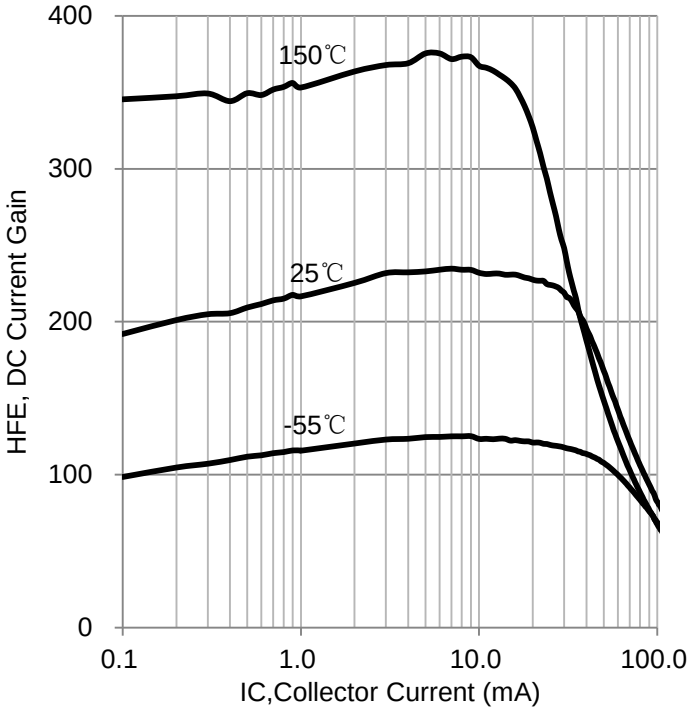
Delay Time	(VCC = 3.0 Vdc,VBE=-0.5Vdc, IC = 10mAdc, IB1 = 1.0 mAdc)	td	-	-	35	ns
Rise Time		tr	-	-	35	
Storage Time	(VCC = 3.0 Vdc, IC = 10 mAdc,IB1 = IB2 = 1.0 mAdc)	ts	-	-	200	
Fall Time		tf	-	-	50	

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

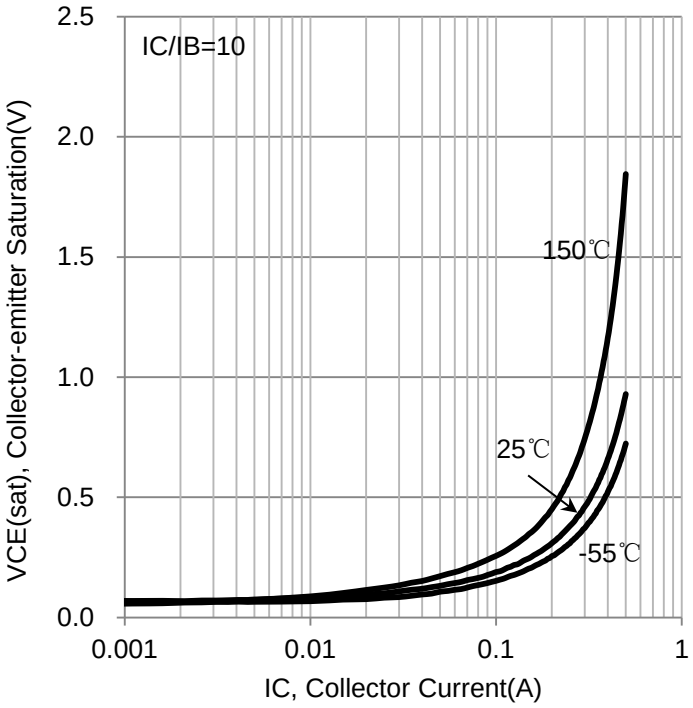
6. ELRCTRICAL CHARACTERISTICS CURVES



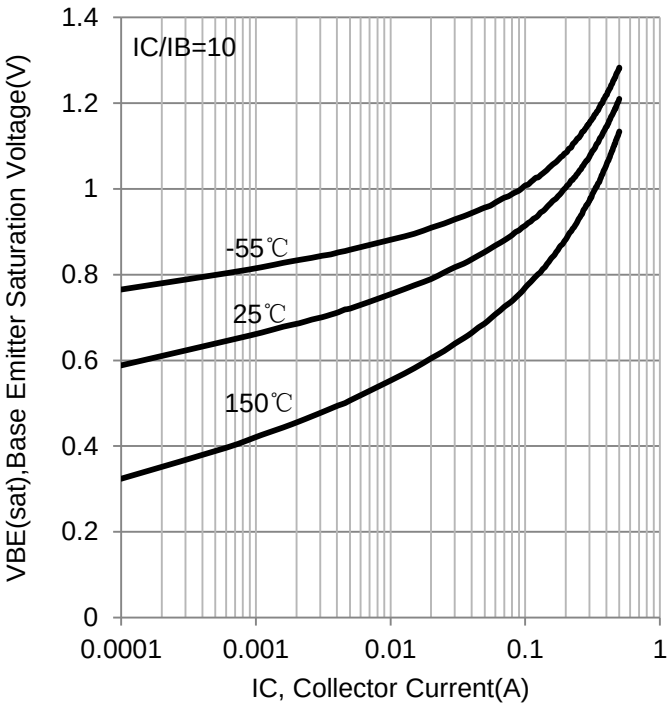
Capacitance



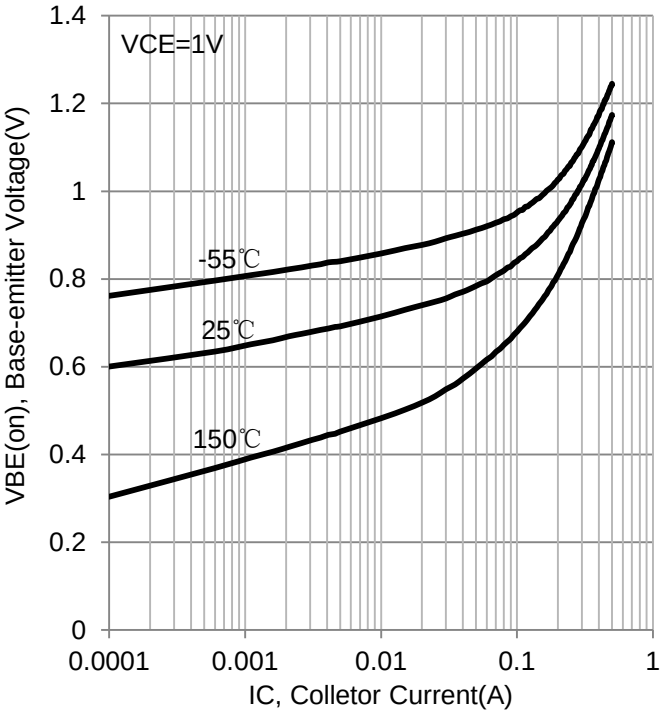
DC Current Gain



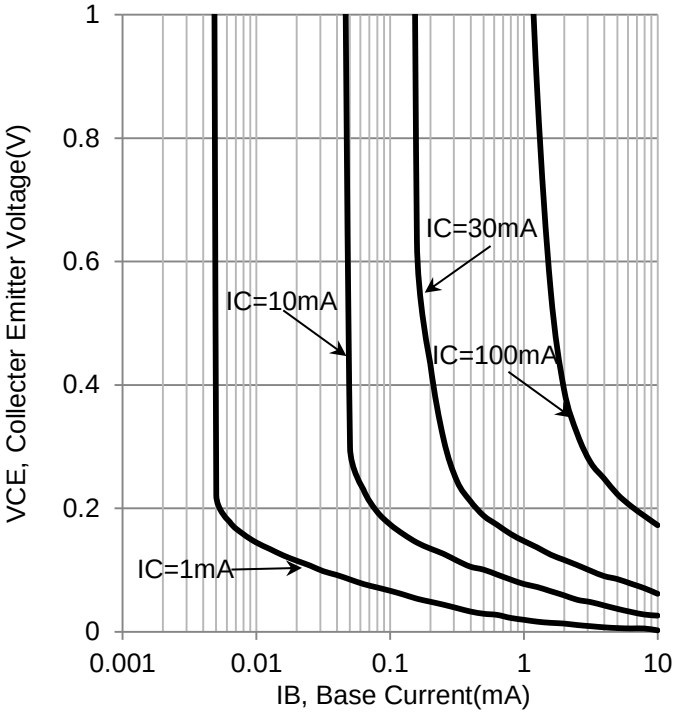
VCE(sat) vs. IC



VBE(sat) vs. IC

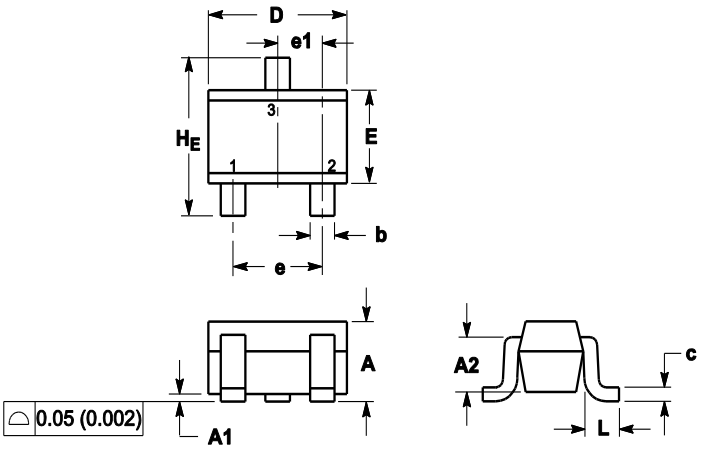


VBE(on) vs. IC



Collector Saturation Region

7.OUTLINE AND DIMENSIONS



Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.039
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70REF			0.028REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65REF			0.026REF		
L	0.20	0.38	0.56	0.008	0.015	0.022
H_E	2.00	2.10	2.40	0.079	0.083	0.095

8.SOLDERING FOOTPRINT