

## General Purpose Transistors PNP Silicon

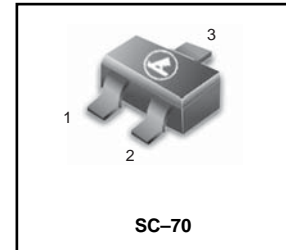
### LMBT3906WT1G S-LMBT3906WT1G

#### ● FEATURES

- 1) We declare that the material of product compliance with RoHS requirements.
- 2) S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

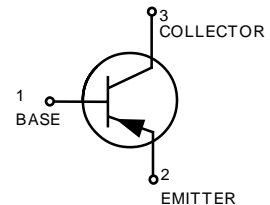
#### ● DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LMBT3906WT1G	2A	3000/Tape&Reel
LMBT3906WT3G	2A	10000/Tape&Reel



#### ● MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V <sub>CEO</sub>	–40	Vdc
Collector–Base Voltage	V <sub>CBO</sub>	–40	Vdc
Emitter–Base Voltage	V <sub>EBO</sub>	–5	Vdc
Collector Current — Continuous	I <sub>C</sub>	–200	mAdc



#### ● THERMAL CHARACTERISTICS

Total Device Dissipation, (Note 1) @ TA = 25°C	P <sub>D</sub>	150	mW
Thermal Resistance, Junction–to–Ambient	R <sub>θJA</sub>	833	°C/W
Junction and Storage temperature	T <sub>J</sub> , T <sub>stg</sub>	–55 ~ +150	°C

1. Device mounted on FR4 glass epoxy printed circuit board using the minimum recommended footprint.

#### ● ELECTRICAL CHARACTERISTICS (Ta= 25°C)

##### OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage(Note 2) (I <sub>C</sub> = –1.0 mAdc, I <sub>B</sub> = 0)	V <sub>BR(CEO)</sub>	–40	–	–	V
Collector–Base Breakdown Voltage (I <sub>C</sub> = –10 μAdc, I <sub>E</sub> = 0)	V <sub>BR(CBO)</sub>	–40	–	–	V
Emitter–Base Breakdown Voltage (I <sub>E</sub> = –10 μAdc, I <sub>C</sub> = 0)	V <sub>BR(EBO)</sub>	–5	–	–	V
Collector Cutoff Current (V <sub>CE</sub> = –30 Vdc, V <sub>EB</sub> = –3.0Vdc)	I <sub>CEX</sub>	–	–	–50	nA
Base Cutoff Current (V <sub>CE</sub> = –30 Vdc, V <sub>EB</sub> = –3.0Vdc)	I <sub>BL</sub>	–	–	–50	nA

2.Pulse Test: Pulse Width ≦ 300 μs; Duty Cycle ≦ 2.0%.

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**● ELECTRICAL CHARACTERISTICS (Ta= 25°C)(Continued)**
**ON CHARACTERISTICS (Note 1.)**

Characteristic	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain (I <sub>C</sub> = -0.1 mA <sub>dc</sub> , V <sub>CE</sub> = -1.0 V <sub>dc</sub> ) (I <sub>C</sub> = -1.0 mA <sub>dc</sub> , V <sub>CE</sub> = -1.0 V <sub>dc</sub> ) (I <sub>C</sub> = -10 mA <sub>dc</sub> , V <sub>CE</sub> = -1.0 V <sub>dc</sub> ) (I <sub>C</sub> = -50 mA <sub>dc</sub> , V <sub>CE</sub> = -1.0 V <sub>dc</sub> ) (I <sub>C</sub> = -100 mA <sub>dc</sub> , V <sub>CE</sub> = -1.0 V <sub>dc</sub> )	h <sub>FE</sub>	60 80 100 60 30	- - - - -	- - 300 - -	
Collector-Emitter Saturation Voltage(3) (I <sub>C</sub> = -10 mA <sub>dc</sub> , I <sub>B</sub> = -1.0 mA <sub>dc</sub> ) (I <sub>C</sub> = -50mA <sub>dc</sub> , I <sub>B</sub> = -5.0 mA <sub>dc</sub> )	V <sub>CE(sat)</sub>	- -	- -	-0.25 -0.4	V
Base-Emitter Saturation Voltage (I <sub>C</sub> = -10 mA <sub>dc</sub> , I <sub>B</sub> = -1.0 mA <sub>dc</sub> ) (I <sub>C</sub> = -50mA <sub>dc</sub> , I <sub>B</sub> = -5.0 mA <sub>dc</sub> )	V <sub>BE(sat)</sub>	-0.65 -	- -	-0.85 -0.95	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain — Bandwidth Product (I <sub>C</sub> = -10mA <sub>dc</sub> , V <sub>CE</sub> = -20V <sub>dc</sub> , f = 100MHz)	f <sub>T</sub>	250	-	-	MHz
Output Capacitance (V <sub>CB</sub> = -5.0 V <sub>dc</sub> , I <sub>E</sub> = 0, f = 1.0 MHz)	C <sub>obo</sub>	-	-	4.5	pF
Input Capacitance (V <sub>EB</sub> = -0.5 V <sub>dc</sub> , I <sub>C</sub> = 0, f = 1.0 MHz)	C <sub>ibo</sub>	-	-	10	pF
Input Impedance (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -1.0 mA <sub>dc</sub> , f = 1.0 kHz)	h <sub>ie</sub>	2	-	12	kΩ
Voltage Feedback Ratio (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -1.0 mA <sub>dc</sub> , f = 1.0 kHz)	h <sub>re</sub>	0.1	-	10	X 10 <sup>-4</sup>
Small-Signal Current Gain (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -1.0 mA <sub>dc</sub> , f = 1.0 kHz)	h <sub>fe</sub>	100	-	400	
Output Admittance (V <sub>CE</sub> = -10 V <sub>dc</sub> , I <sub>C</sub> = -1.0 mA <sub>dc</sub> , f = 1.0 kHz)	h <sub>oe</sub>	3	-	60	μmhos
Noise Figure (V <sub>CE</sub> = -5V, I <sub>C</sub> = -100μA, R <sub>S</sub> = 1.0kΩ, f = 1.0kHz)	NF	-	-	4	dB

**SWITCHING CHARACTERISTICS**

Delay Time	(V <sub>CC</sub> = -3.0 V <sub>dc</sub> , V <sub>BE</sub> = 0.5 V <sub>dc</sub> , I <sub>C</sub> = -10 mA <sub>dc</sub> , I <sub>B1</sub> = -1.0 mA <sub>dc</sub> )	t <sub>d</sub>	-	-	35	ns
Rise Time		t <sub>r</sub>	-	-	35	
Storage Time		t <sub>s</sub>	-	-	225	
Fall Time		t <sub>f</sub>	-	-	75	

3.Pulse Test: Pulse Width ≤ 300 μs; Duty Cycle ≤ 2.0%.

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## Electrical Characteristics Curves

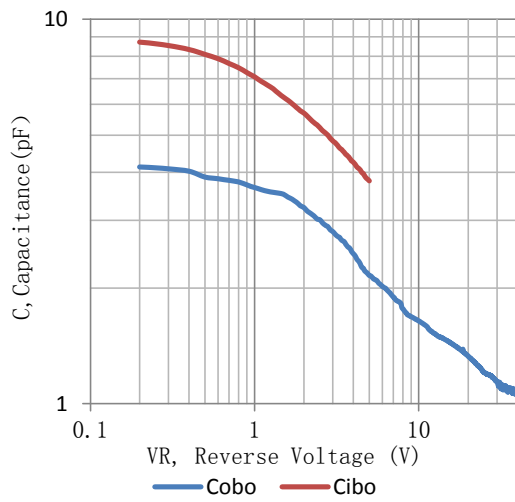


Figure 1. Capacitance

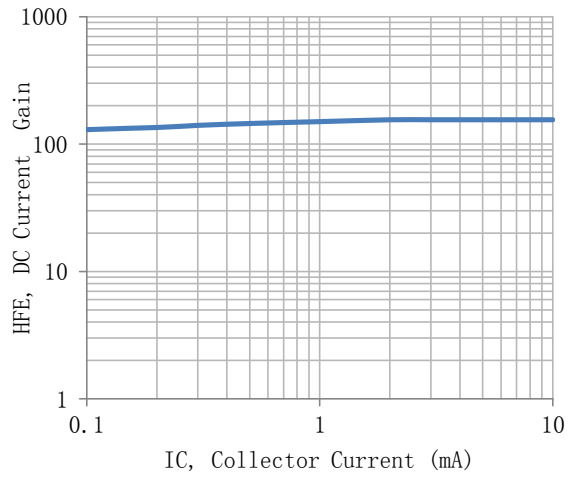


Figure 2. Current Gain

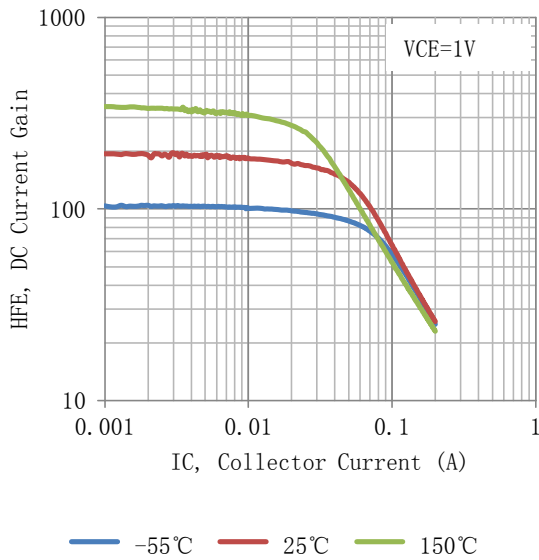


Figure 3. DC Current Gain

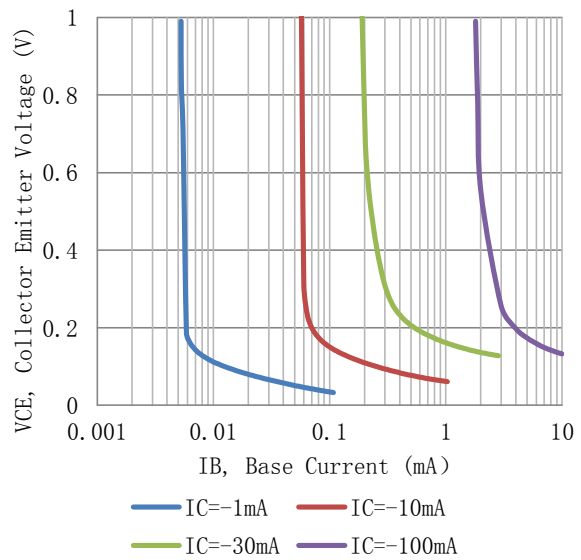


Figure 4. Collector Saturation Region

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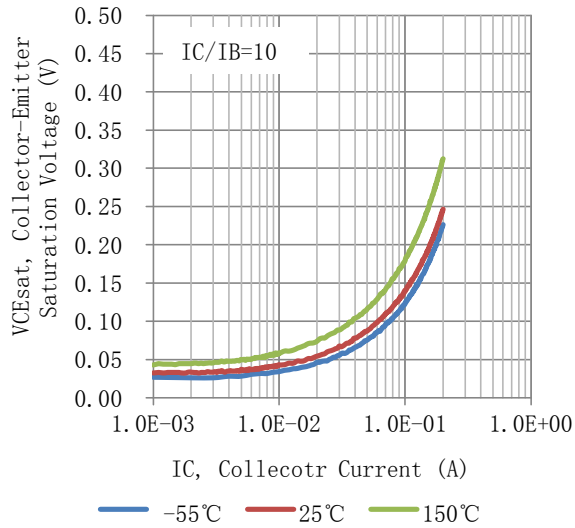


Figure 5. Collector Emitter Saturation Voltage vs. Collector Current

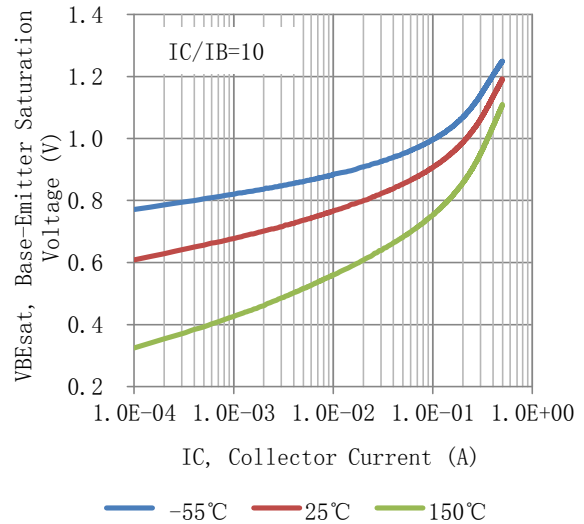


Figure 6. Base Emitter Saturation Voltage vs. Collector Current

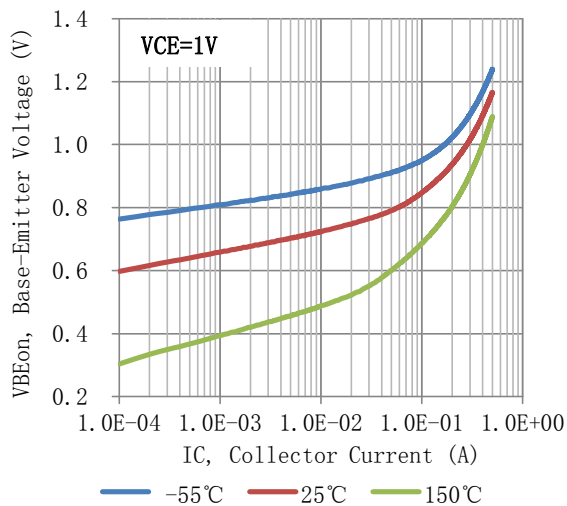
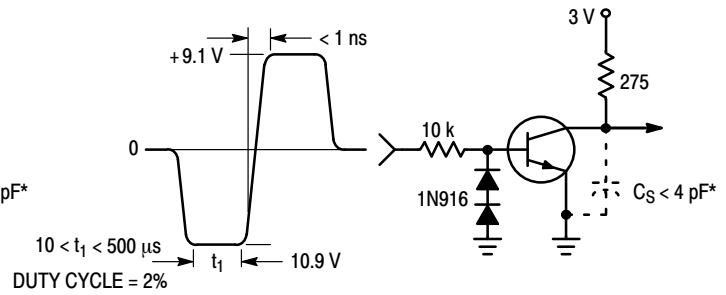
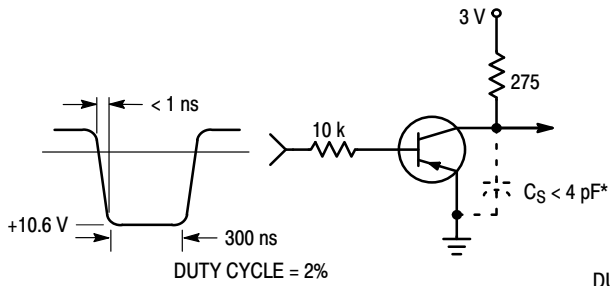


Figure 7. Base Emitter Voltage vs. Collector Current

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\* Total shunt capacitance of test jig and connectors

Figure 8. Delay and Rise Time Equivalent Test

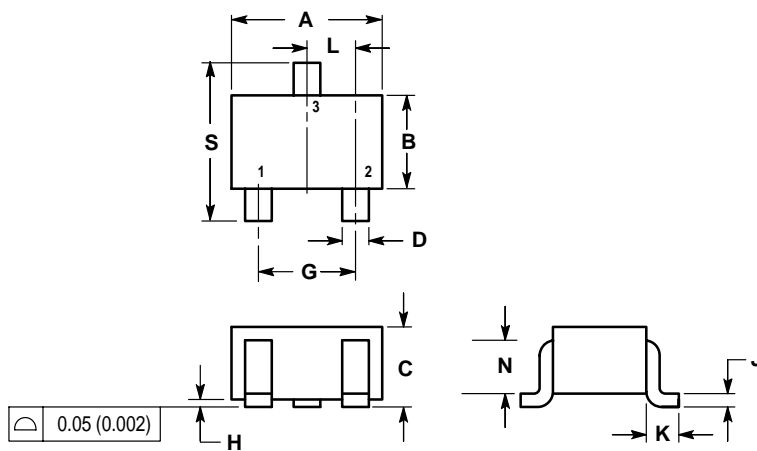
Figure 9. Storage and Fall Time Equivalent Test

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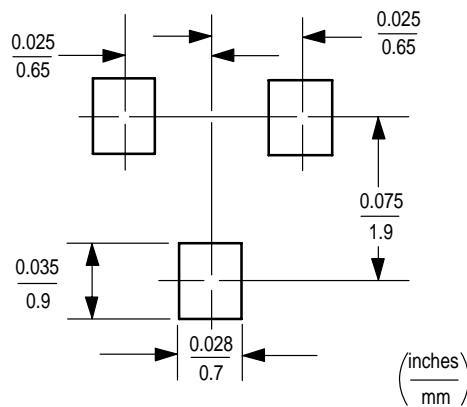
## SC-70

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40



单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)