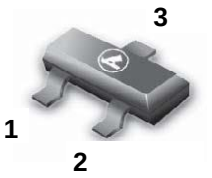
General Purpose Transistors
PNP Silicon

LMBT2907ALT1G
S-LMBT2907ALT1G

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



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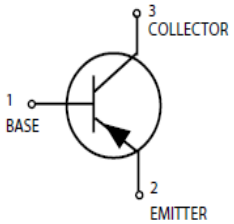

●DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LMBT2907ALT1G	2F	3000/Tape&Reel
LMBT2907ALT3G	2F	10000/Tape&Reel

●MAXIMUM RATINGS(Ta = 25℃)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V_{CEO}	–60	Vdc
Collector–Base Voltage	V_{CBO}	–60	Vdc
Emitter–Base Voltage	V_{EBO}	–5	Vdc
Collector Current — Continuous	I_C	–600	mAdc

●THERMAL CHARACTERISTICS

Total Device Dissipation, FR−5 Board (Note 1) @ T_A = 25°C Derate above 25°C	P_D	 225 1.8	 mW mW/℃
Thermal Resistance, Junction–to–Ambient(Note 1)	$R_{\Theta JA}$	556	℃/W
Total Device Dissipation, Alumina Substrate (Note 2) @ T_A = 25°C Derate above 25°C	P_D	 300 2.4	 mW mW/℃
Thermal Resistance, Junction–to–Ambient(Note 2)	$R_{\Theta JA}$	417	℃/W
Junction and Storage temperature	T_J,T_{stg}	−55～+150	℃

1. FR–5 = 1.0×0.75×0.062 in.
2. Alumina = 0.4×0.3×0.024 in. 99.5% alumina.

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●ELECTRICAL CHARACTERISTICS (Ta= 25℃)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (I_C = –10 mAdc, I_B = 0)	$V_{BR(CEO)}$	–60	–	–	V
Collector–Base Breakdown Voltage (I_C = –10 μAdc, I_E = 0)	$V_{BR(CBO)}$	–60	–	–	V
Emitter–Base Breakdown Voltage (I_E = –10 μAdc, I_C = 0)	$V_{BR(EBO)}$	–5	–	–	V
Collector Cutoff Current (V_{CB} = –30 Vdc, $V_{EB(off)}$ =– 5.0Vdc)	I_{CEX}	–	–	–50	nA
Collector Cutoff Current (V_{CB} = –50 Vdc, I_E = 0) (V_{CB} =–50 Vdc, I_E = 0, T_A = 125°C)	I_{CBO}	– –	– –	–0.01 –10	μA
Base Current (V_{CE} = –30 Vdc, $V_{EB(off)}$ = –0.5Vdc)	I_B	–	–	–50	nA

ON CHARACTERISTICS (Note 1.)

DC Current Gain	h_{FE}				
(I_C = –0.1 mAdc, V_{CE} = –10 Vdc)		75	–	–	
(I_C = –1.0 mAdc, V_{CE} = –10 Vdc)		100	–	–	
(I_C = –10 mAdc, V_{CE} = –10 Vdc)		100	–	–	
(I_C = –150 mAdc, V_{CE} =– 10 Vdc) (3)		100	–	300	
(I_C = –500 mAdc, V_{CE} =– 10 Vdc)(3)		50	–	–	
Collector–Emitter Saturation Voltage(3)					V
(I_C = –150 mAdc, I_B = –15 mAdc)	$V_{CE(sat)}$	–	–	–0.4	
(I_C = –500mAdc, I_B =– 50 mAdc)		–	–	–1.6	
Base–Emitter Saturation Voltage					V
(I_C = –150 mAdc, I_B =– 15 mAdc)	$V_{BE(sat)}$	–	–	–1.3	
(I_C = –500mAdc, I_B =– 50 mAdc)		–	–	–2.6	

SMALL–SIGNAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Current–Gain — Bandwidth Product(4) (I_C =– 50mAdc, V_{CE}= –20Vdc, f = 100MHz)	f_T	200	–	–	MHz
Output Capacitance (V_{CB} = –10 Vdc, I_E = 0, f = 1.0 MHz)	C_{obo}	–	–	8	pF
Input Capacitance (V_{EB} =– 2.0 Vdc, I_C = 0, f = 1.0 MHz)	C_{ibo}	–	–	30	pF

SWITCHING CHARACTERISTICS

Turn–On Time	(V_{CC} =– 30 Vdc, I_C = –150 mAdc, I_{B1} = –15 mAdc)	t_{on}	–	–	45	ns
Delay Time		t_d	–	–	10	
Rise Time		t_r	–	–	40	
Storage Time	(V_{CC} = –6 Vdc, I_C = –150 mAdc,I_{B1} = I_{B2} = –15 mAdc)	t_s	–	–	225	
Fall Time		t_f	–	–	60	
Turn–Off Time		t_{off}	–	–	280	

3. Pulse Test: Pulse Width <300 μs, Duty Cycle <2.0%.

4.fT is defined as the frequency at which hfe extrapolates to unity.

ELRCTRICAL CHARACTERISTICS CURVES

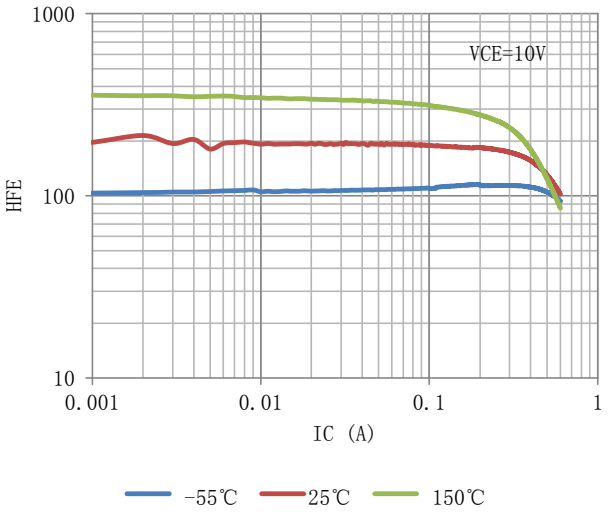

Figure 1. DC Current Gain

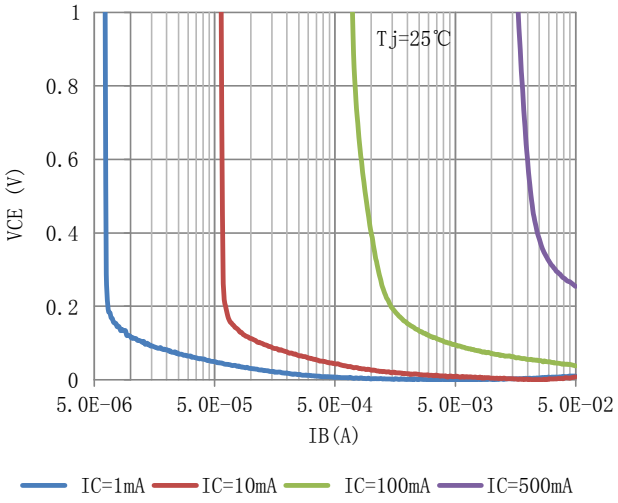

Figure 2. Collector Saturation Region

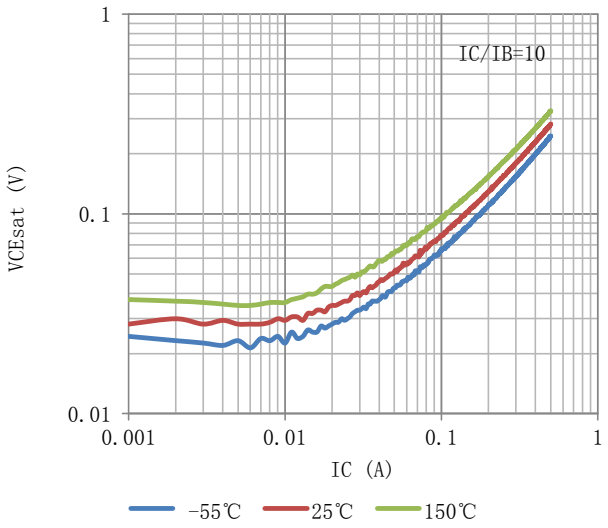

Figure 3. Collector Emitter Saturation Voltage vs. Collector Current

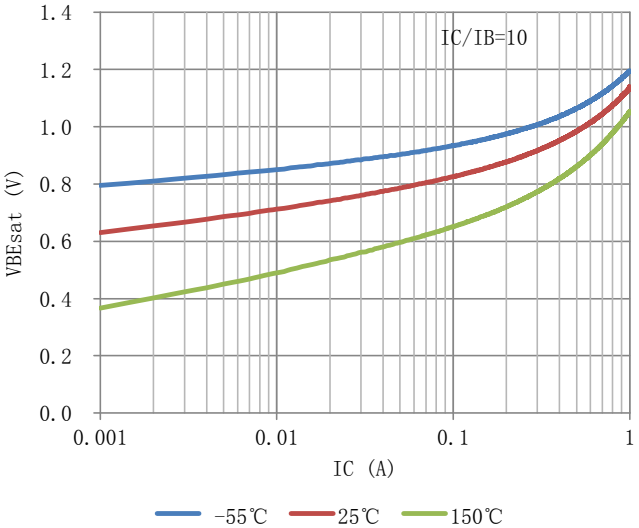

Figure 4. Base Emitter Saturation Voltage vs. Collector Current

ELRCTRICAL CHARACTERISTICS CURVES

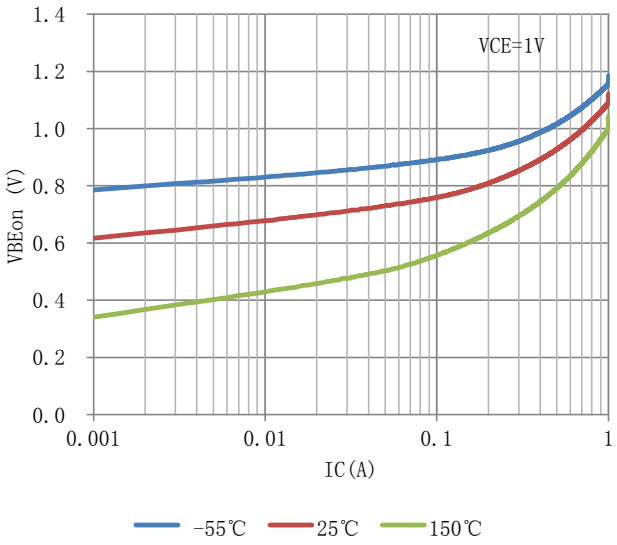

Figure 5. Base Emitter Voltage vs. Collector Current

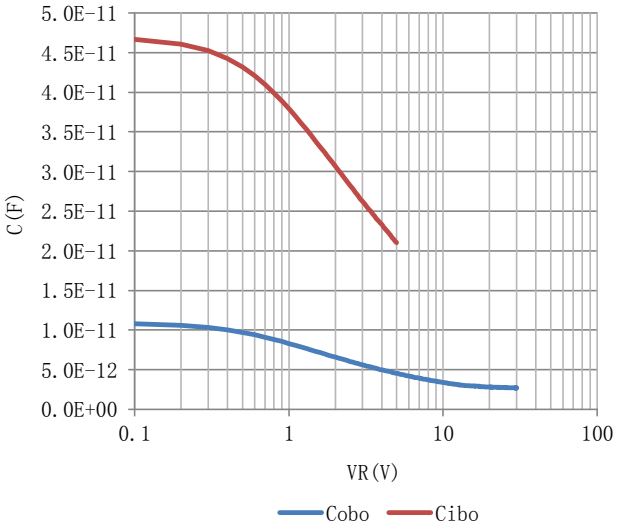

Figure 6. Capacitance

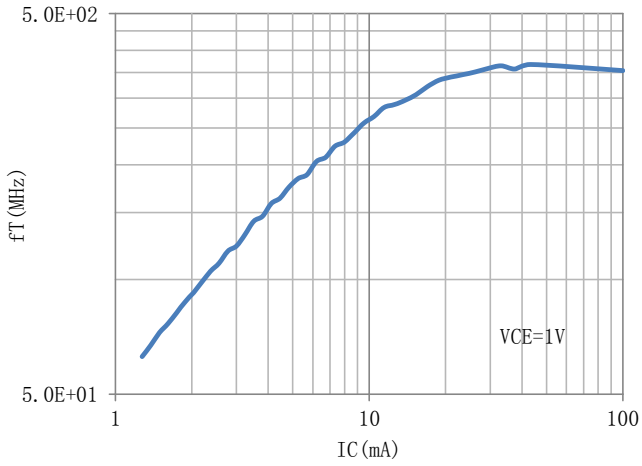

Figure 7. Current-Gain Bandwidth Product

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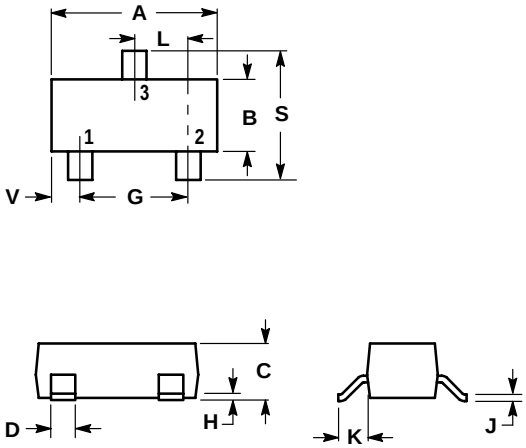

NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60