

# LBC817-25LT1G

## S-LBC817-25LT1G

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.

### 2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LBC817-25LT1G	6B	3000/Tape&Reel
LBC817-25LT3G	6B	10000/Tape&Reel

### 3. MAXIMUM RATINGS(Ta = 25°C)

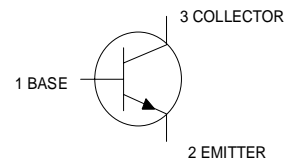
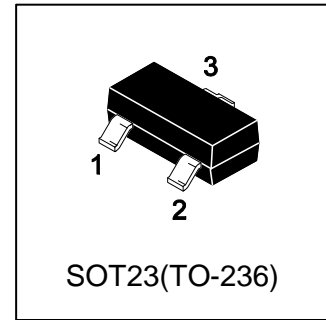
Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V <sub>CEO</sub>	45	V
Collector–Base Voltage	V <sub>CBO</sub>	50	V
Emitter–Base Voltage	V <sub>EBO</sub>	5	V
Collector Current — Continuous	I <sub>C</sub>	500	mA
Peak Collector Current	I <sub>CM</sub>	800	mA

### 4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ TA = 25°C Derate above 25°C	PD	225 1.8	mW mW/°C
Thermal Resistance, Junction–to–Ambient	R <sub>θJA</sub>	556	°C/W
Total Device Dissipation, Alumina Substrate (Note 2) @ TA = 25°C Derate above 25°C	PD	300 2.4	mW mW/°C
Thermal Resistance, Junction–to–Ambient	R <sub>θJA</sub>	417	°C/W
Junction and Storage temperature	T <sub>J</sub> , T <sub>stg</sub>	-55~+150	°C

1. FR-5 = 1.0×0.75×0.062 in.

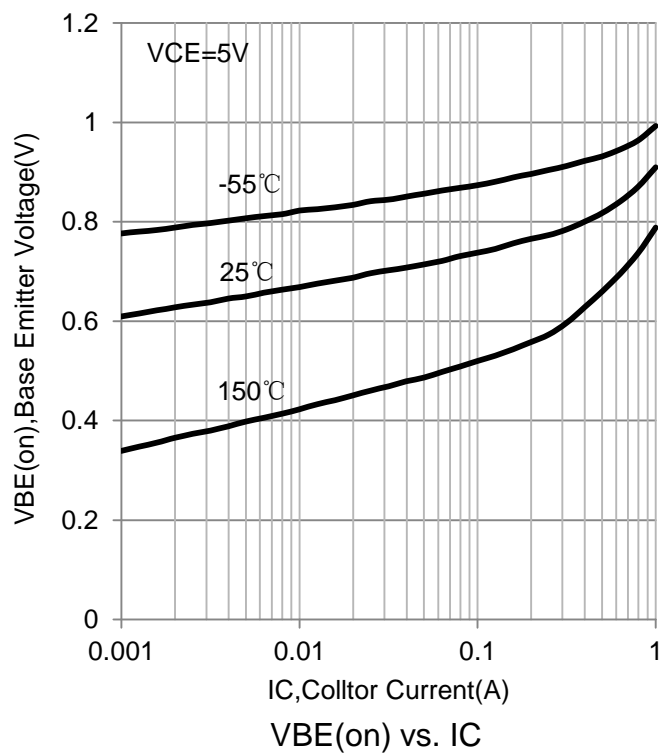
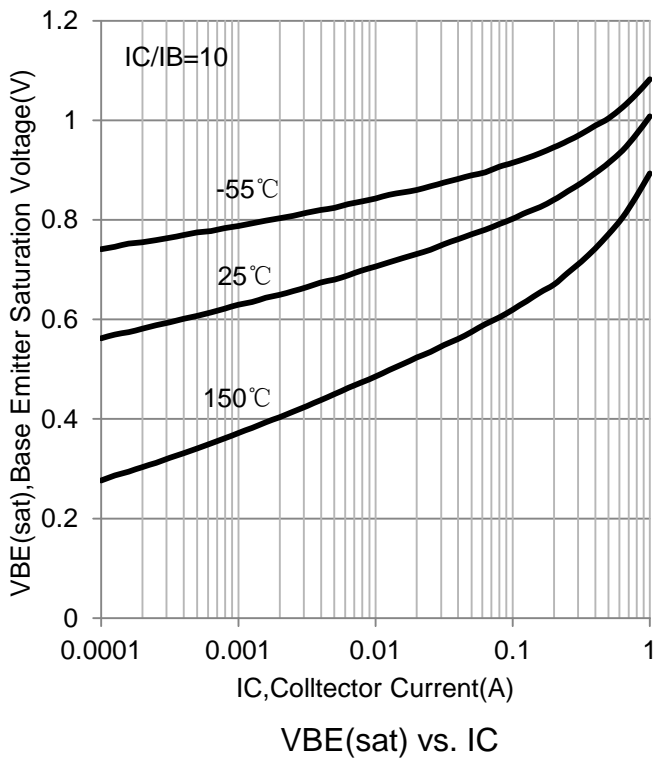
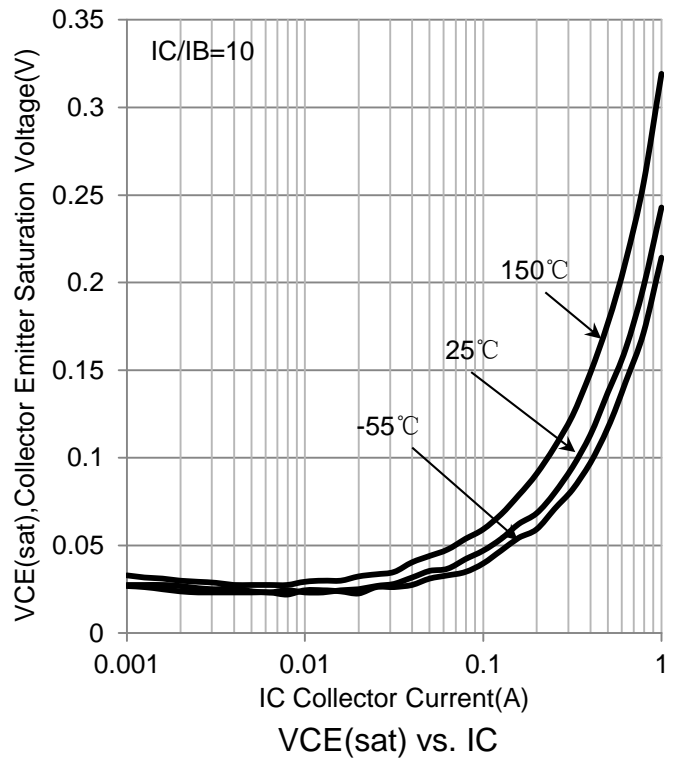
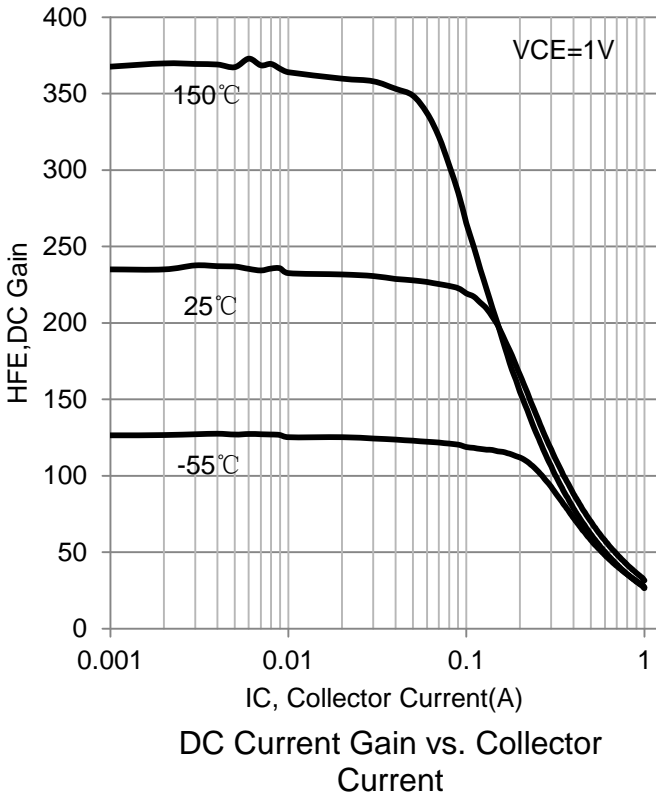
2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



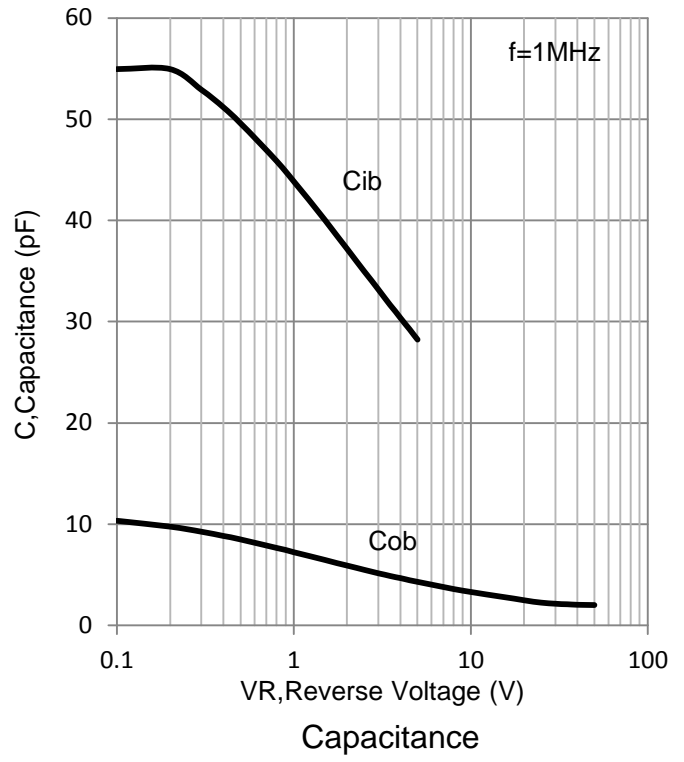
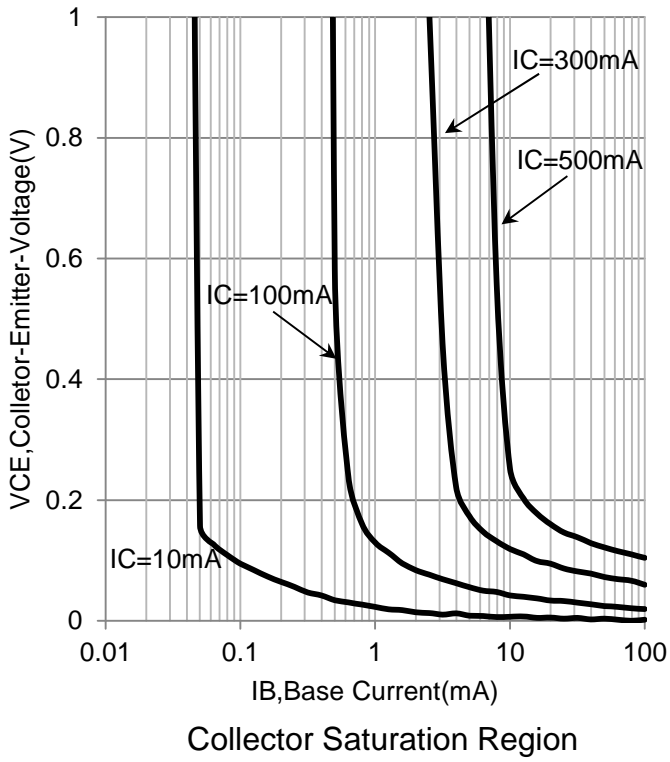
**5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 10 mA)	VBR(CEO)	45	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μA)	VBR(CBO)	50	-	-	V
Emitter–Base Breakdown Voltage (IE = 1.0 μA)	VBR(EBO)	5	-	-	V
Collector Cutoff Current (VCB = 20 V) (VCB = 20 V, TA=150°C)	ICBO	- -	- -	100 5	nA μA
DC Current Gain (IC = 100 mA, VCE = 1.0 V) (IC = 500 mA, VCE = 1.0 V)	HFE	160 40	- -	400 -	
Collector–Emitter Saturation Voltage (IC = 500 mA, IB = 50 mA)	VCE(sat)	-	-	0.7	V
Base–Emitter on Voltage (IC = 500 mA, VCE = 1.0 V)	VBE(on)	-	-	1.2	V
Current–Gain — Bandwidth Product (IC = 10mA, VCE= 5V, f = 100MHz)	fT	100	-	-	MHz
Output Capacitance (VCB = 10 V, IE = 0, f = 1.0 MHz)	Cob	-	10	-	pF

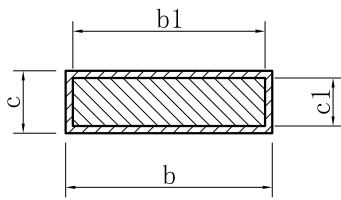
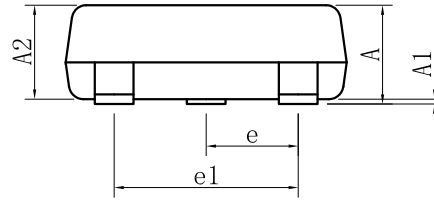
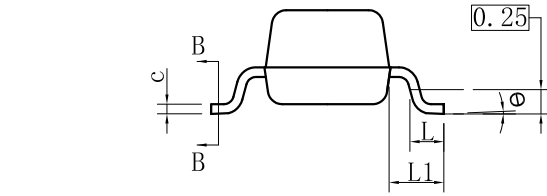
**6.ELECTRICAL CHARACTERISTICS CURVE**



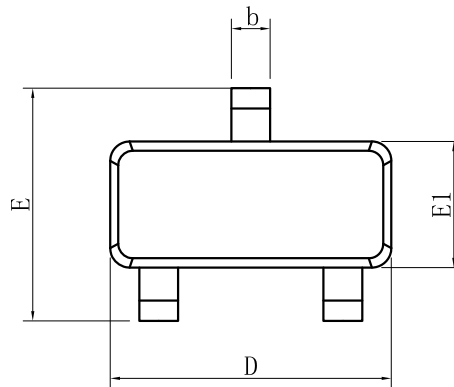
**6.ELECTRICAL CHARACTERISTICS CURVES(Con.)**



### 7. OUTLINE AND DIMENSIONS



SECTION B-B

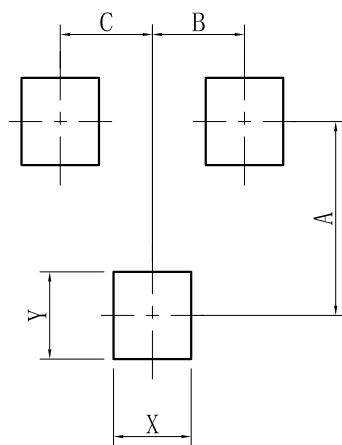


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

#### GENERAL NOTES

1. Top package surface finish  $Ra0.4 \pm 0.2\mu m$
2. Bottom package surface finish  $Ra0.7 \pm 0.2\mu m$
3. Side package surface finish  $Ra0.4 \pm 0.2\mu m$

### 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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