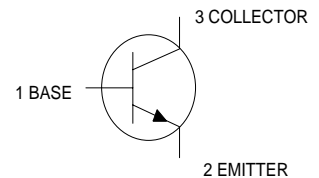
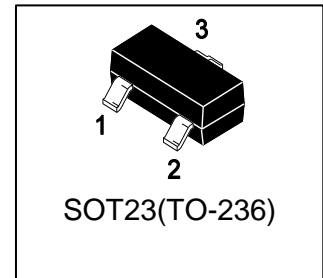


LBC847ALT1G

S-LBC847ALT1G

General Purpose Transistors NPN Silicon



1. FEATURES

- Moisture Sensitivity Level: 1
- ESD Rating – Human Body Model: >4000 V
– Machine Model: >400 V
- 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
LBC847ALT1G	1E	3000/Tape&Reel
LBC847ALT3G	1E	10000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V _{CEO}	45	V
Collector–Base Voltage	V _{CBO}	50	V
Emitter–Base Voltage	V _{EBO}	6	V
Collector Current — Continuous	I _C	100	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 _{θJA}	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 _{θJA}	417	°C/W
Junction and Storage temperature	T _J , T _{stg}	-55 ~ +150	°C

1. FR-5 = 1.0 x 0.75 x 0.062 in.

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

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 10 mA)	VBR(CEO)	45	-	-	V
Collector–Emitter Breakdown Voltage (IC = 10 μA, VEB = 0)	VBR(CES)	50	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μA)	VBR(CBO)	50	-	-	V
Emitter–Base Breakdown Voltage (IE = 1.0 μA)	VBR(EBO)	6	-	-	V
Collector Cutoff Current (VCB = 30 V) (VCB = 30 V, TA = 150°C)	ICBO	-	-	15 5	nA μA
Emitter-Base cut-off current (IC = 0, VEB = 5 V)	IEBO	-	-	50	nA
Collector-Emitter cutoff Current (VCE = 45V, IB=0)	ICEO	-	-	10	μA

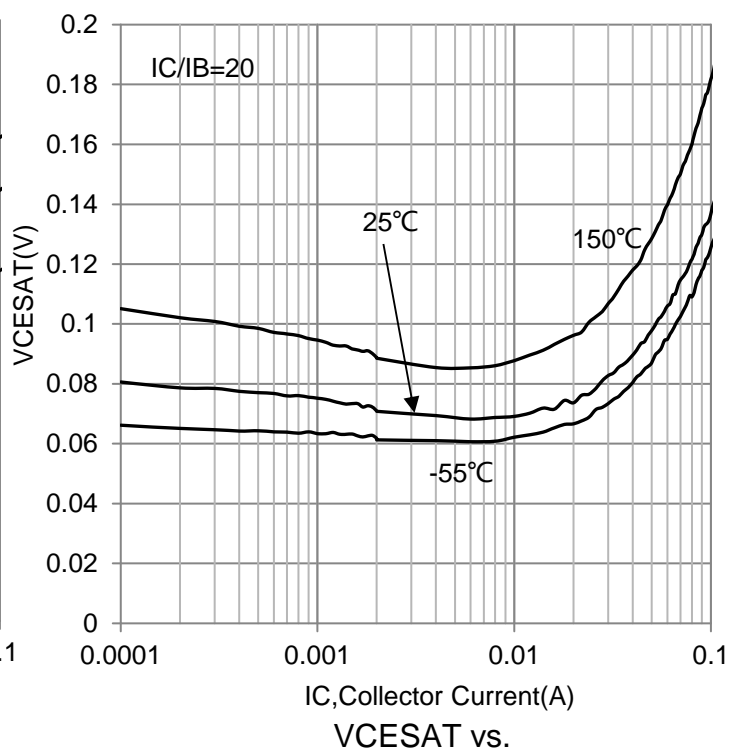
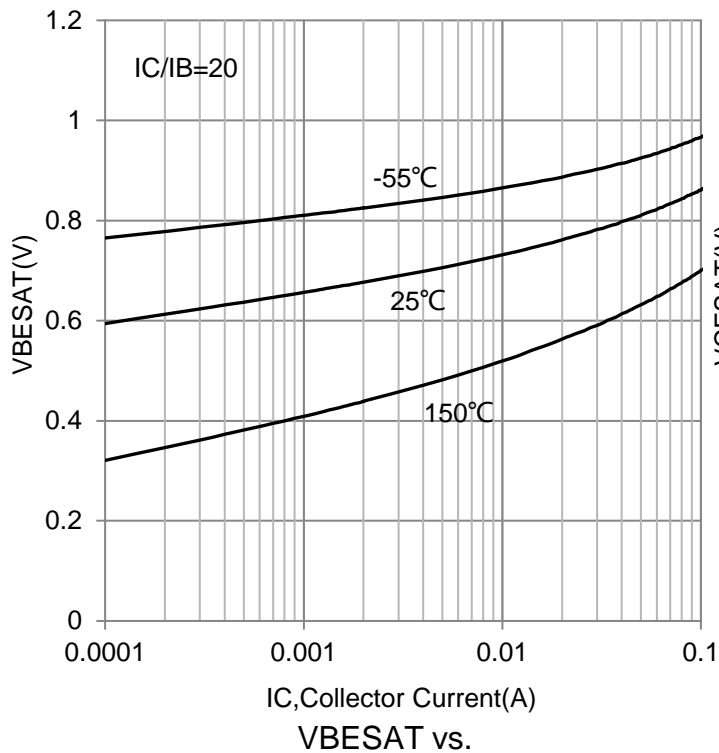
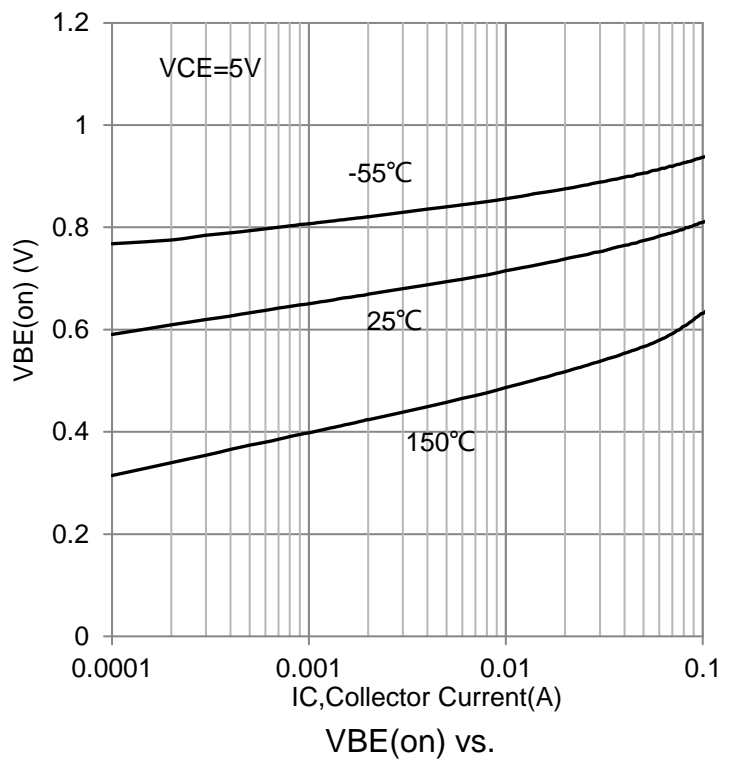
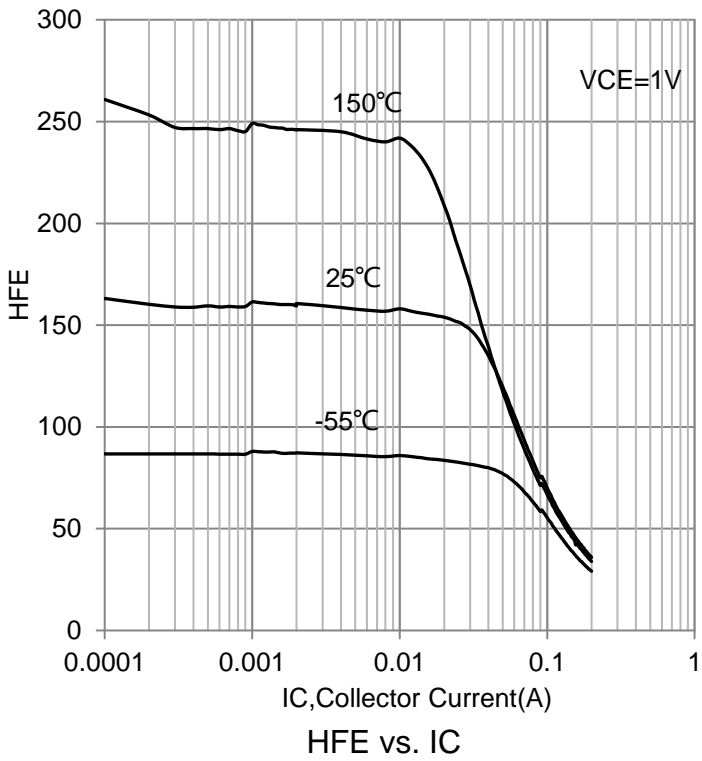
ON CHARACTERISTICS

DC Current Gain (IC = 2.0 mA, VCE = 5.0 V)	HFE	110	180	220	
Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) (IC = 100 mA, IB = 5.0 mA)	VCE(sat)	-	-	0.25 0.6	V
Base–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) (IC = 100 mA, IB = 5.0 mA)	VBE(sat)	-	0.7 0.9	-	V
Base–Emitter Voltage (IC = 2.0 mA, VCE = 5.0 V) (IC = 10 mA, VCE = 5.0 V)	VBE(on)	580	660	700 770	mV

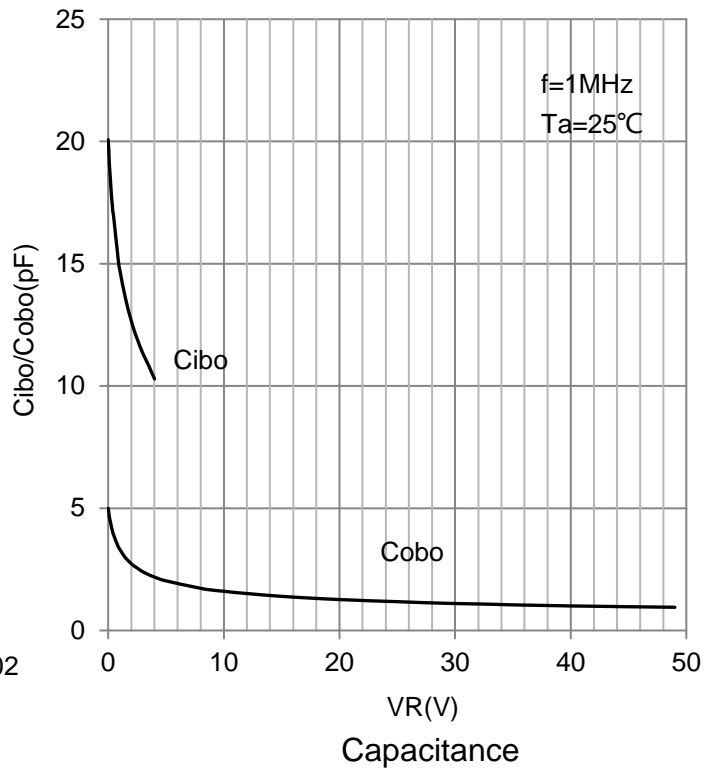
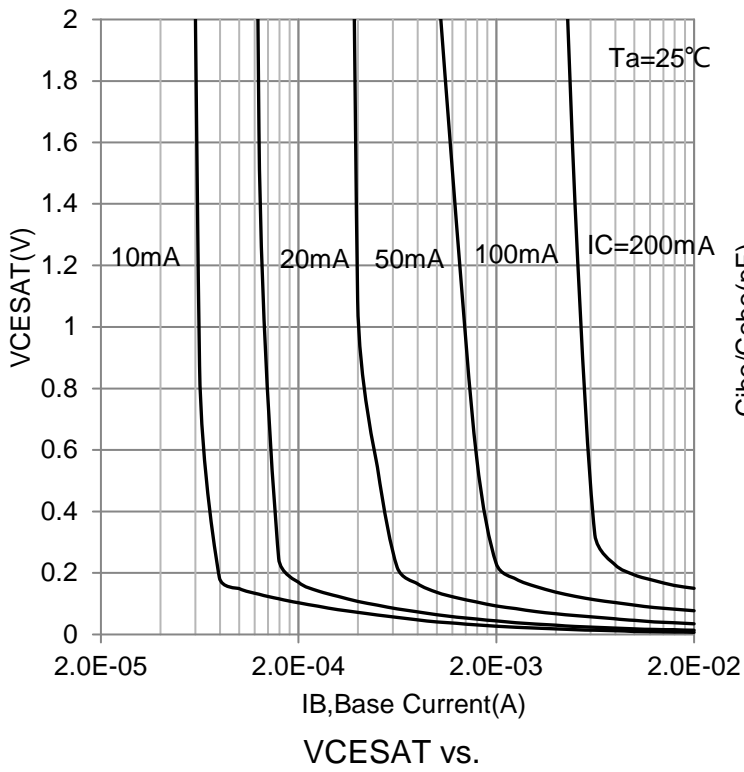
SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product (IC = 10 mA, VCE = 5.0 V, f = 100 MHz)	fT	100	-	-	MHz
Output Capacitance (VCB = 10 V, f = 1.0 MHz)	Cobo	-	-	4.5	pF
Noise Figure (IC = 0.2 mA, VCE = 5.0 V, RS = 2.0 kΩ f = 1.0 kHz, BW = 200 Hz)	NF	-	-	10	dB

6.ELECTRICAL CHARACTERISTICS CURVES



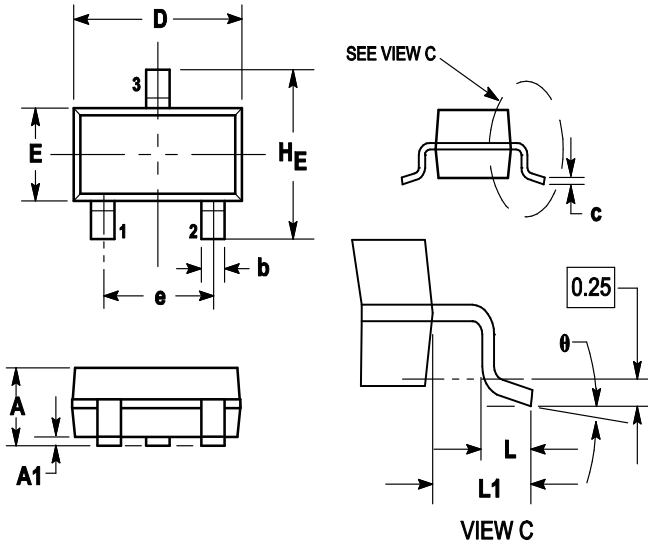
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



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.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

8. SOLDERING FOOTPRINT

