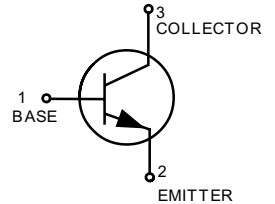
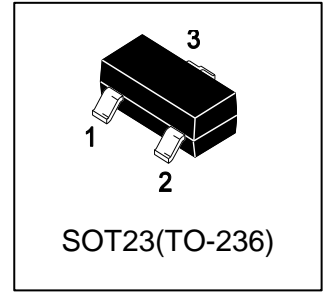


LBC850CLT1G

S-LBC850CLT1G

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 |
|-------------|---------|-----------------|
| LBC850CLT1G | 2G | 3000/Tape&Reel |
| LBC850CLT3G | 2G | 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(Note 1) | 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(Note 2) | 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) | ICBO | - | - | 15 | nA |
| (VCB = 30 V, TA = 150°C) | | - | - | 5 | μA |

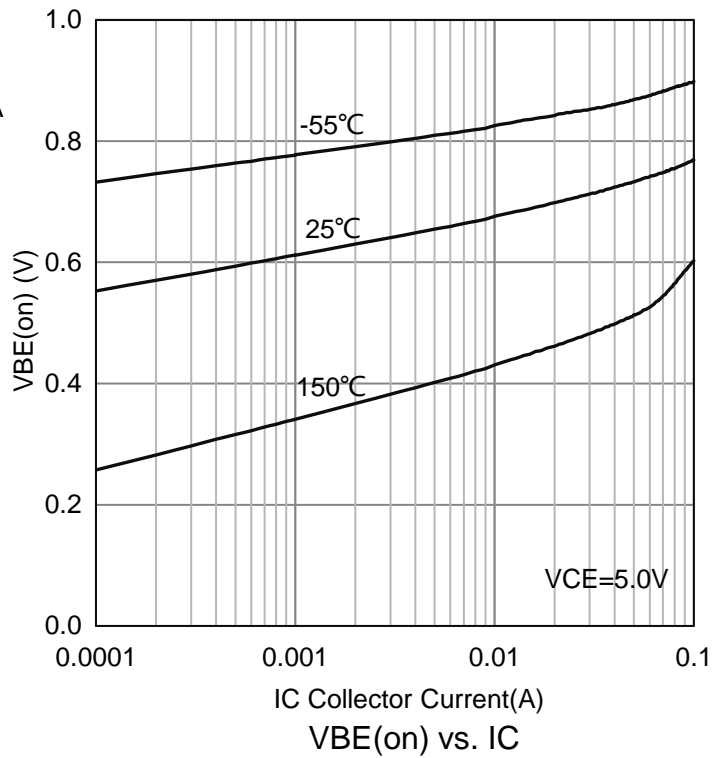
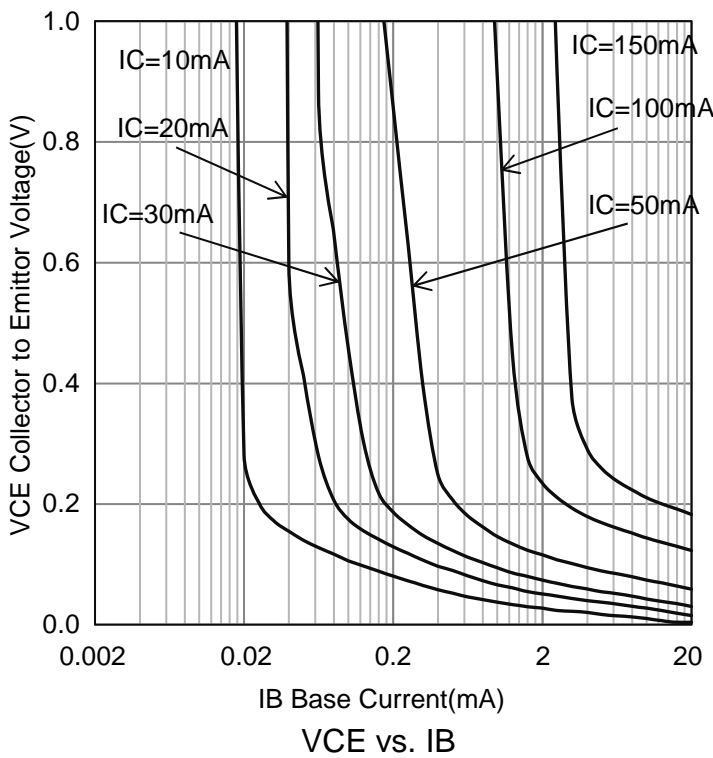
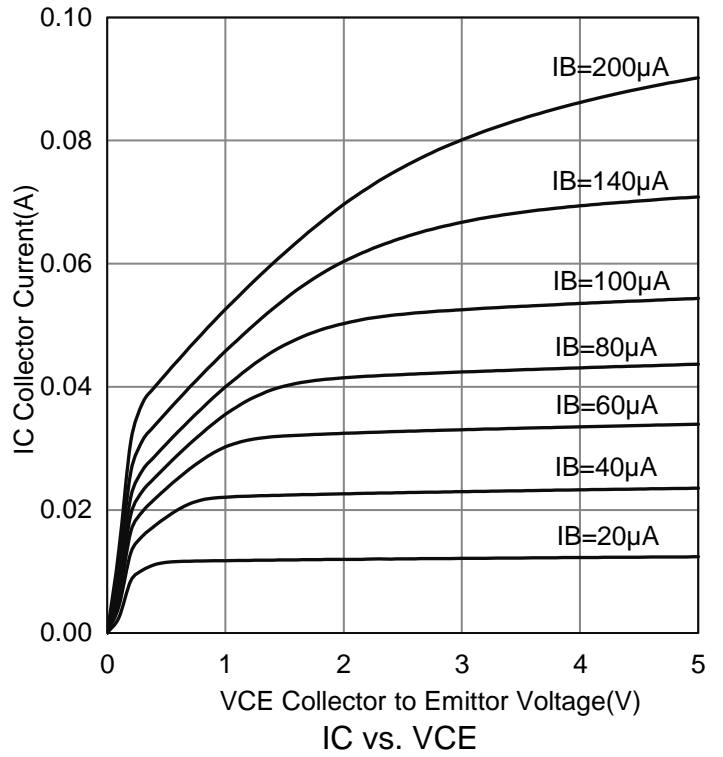
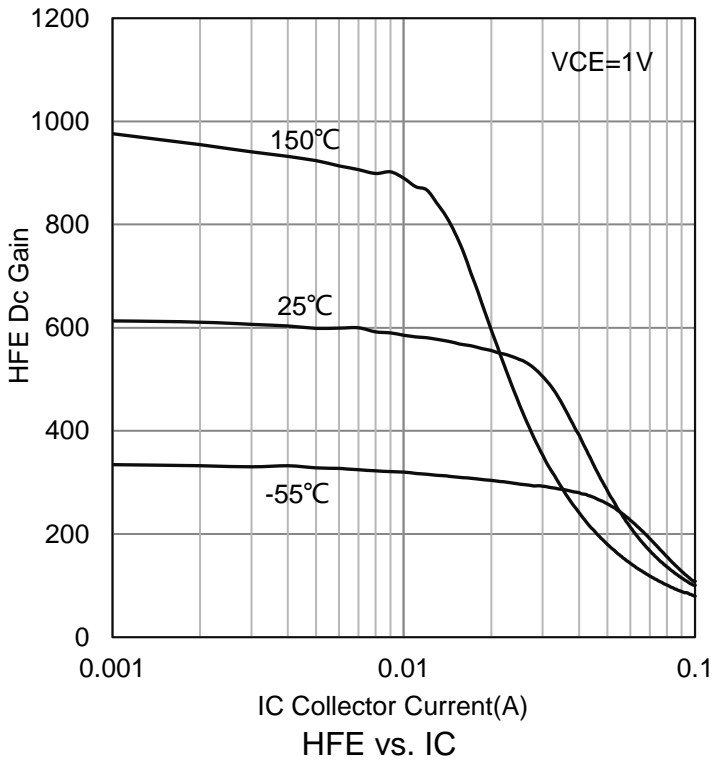
ON CHARACTERISTICS

| | | | | | |
|---|----------|-----|-----|------|----|
| DC Current Gain (IC = 2.0 mA, VCE = 5.0 V) | HFE | 420 | 520 | 800 | |
| Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) | VCE(sat) | - | - | 0.25 | V |
| (IC = 100 mA, IB = 5.0 mA) | | - | - | 0.6 | |
| Base–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) | VBE(sat) | - | 0.7 | - | V |
| (IC = 100 mA, IB = 5.0 mA) | | - | 0.9 | - | |
| Base–Emitter Voltage (IC = 2.0 mA, VCE = 5.0 V) | VBE(on) | 580 | 660 | 700 | mV |
| (IC = 10 mA, VCE = 5.0 V) | | - | - | 770 | |

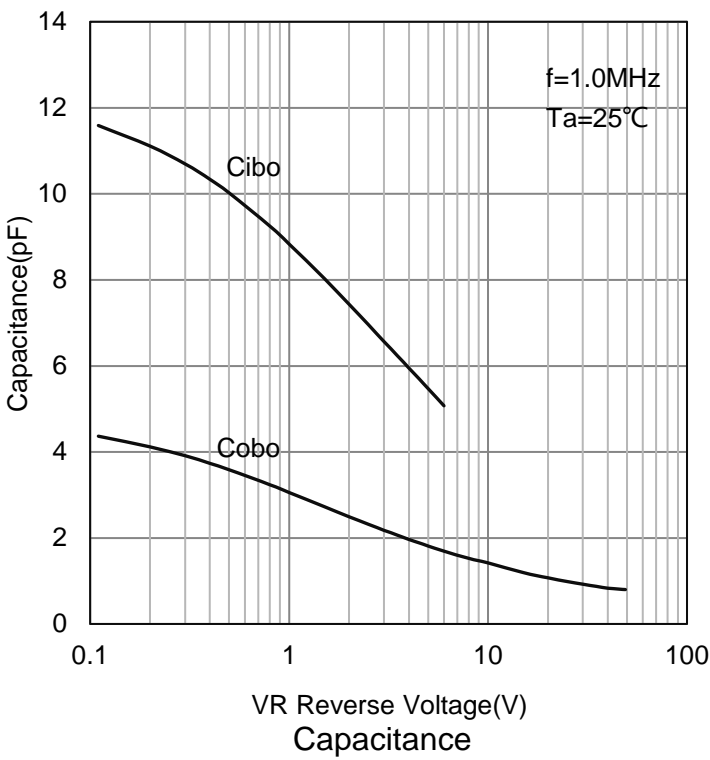
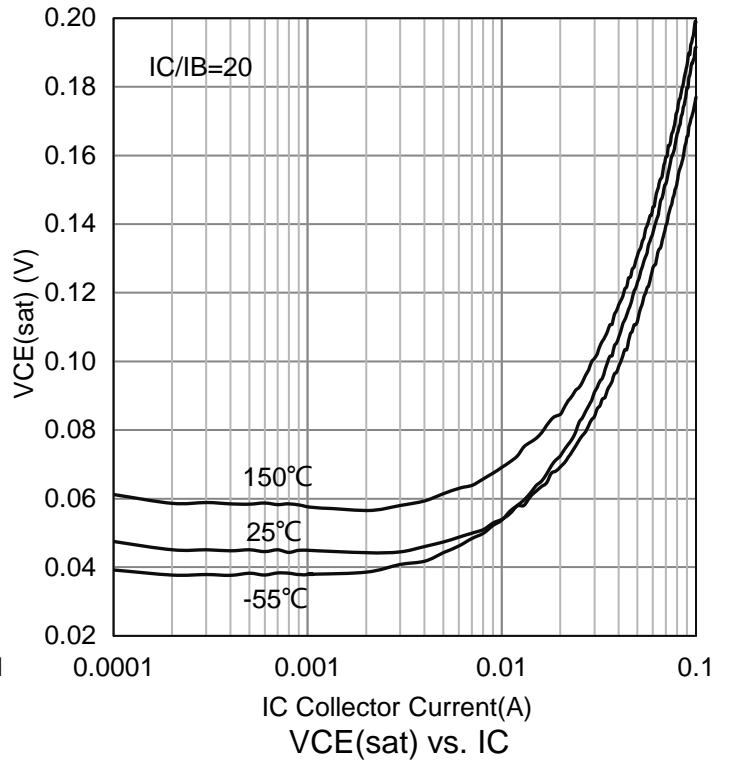
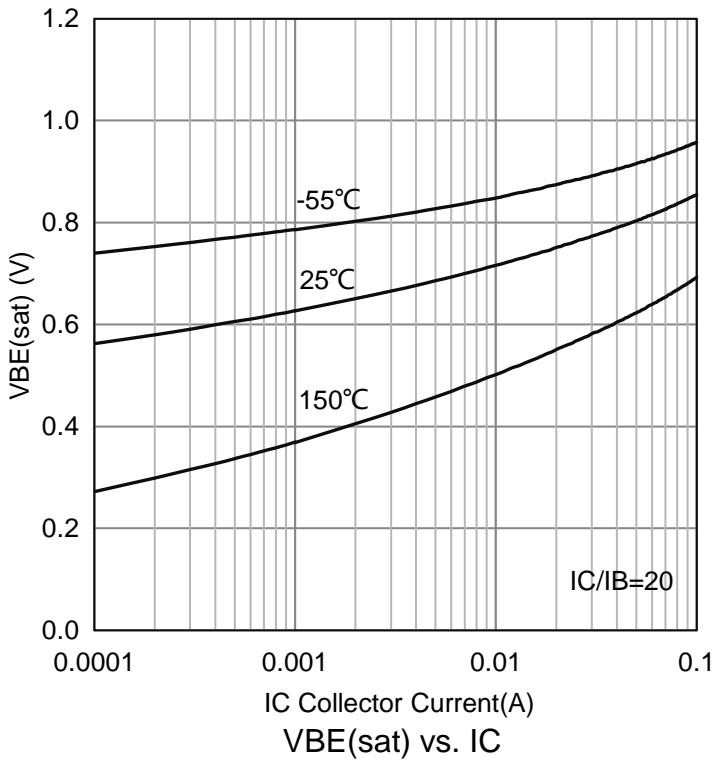
SMALL–SIGNAL CHARACTERISTICS

| | | | | | |
|---|------|-----|---|-----|-----|
| 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 | - | - | 4.0 | dB |

6.ELECTRICAL CHARACTERISTICS CURVES



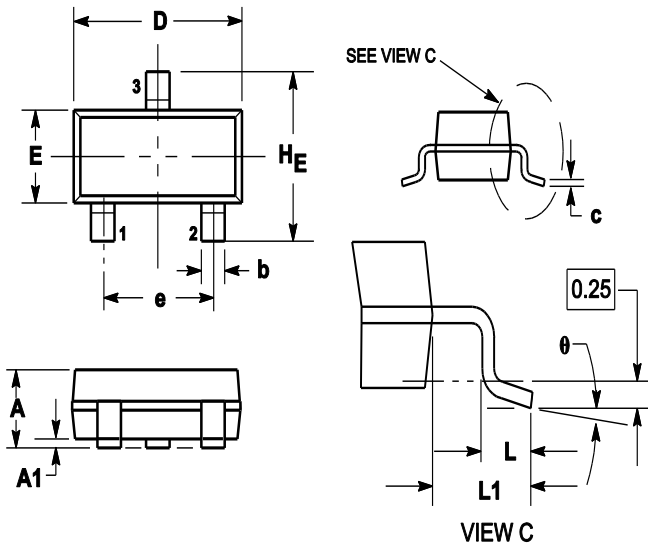
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



7.OUTLINE AND DIMENSIONS

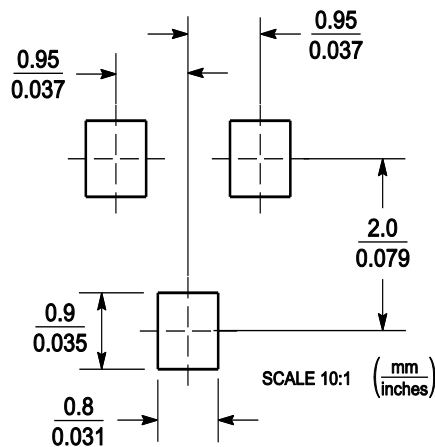
Notes:

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 |
| theta | 0° | --- | 10° | 0° | --- | 10° |

8.SOLDERING FOOTPRINT



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