

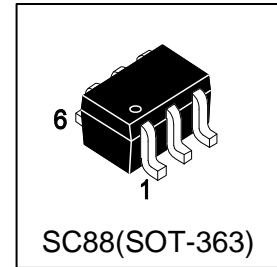
LBC847BDW1T1G

S-LBC847BDW1T1G

NPN Dual General Purpose Transistors

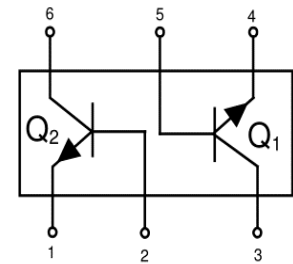
1. FEATURES

- 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 |
|---------------|---------|-----------------|
| LBC847BDW1T1G | 1F | 3000/Tape&Reel |
| LBC847BDW1T3G | 1F | 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 _{EB0} | 6 | V |
| Collector Current(Continuous) | I _C | 100 | mA |

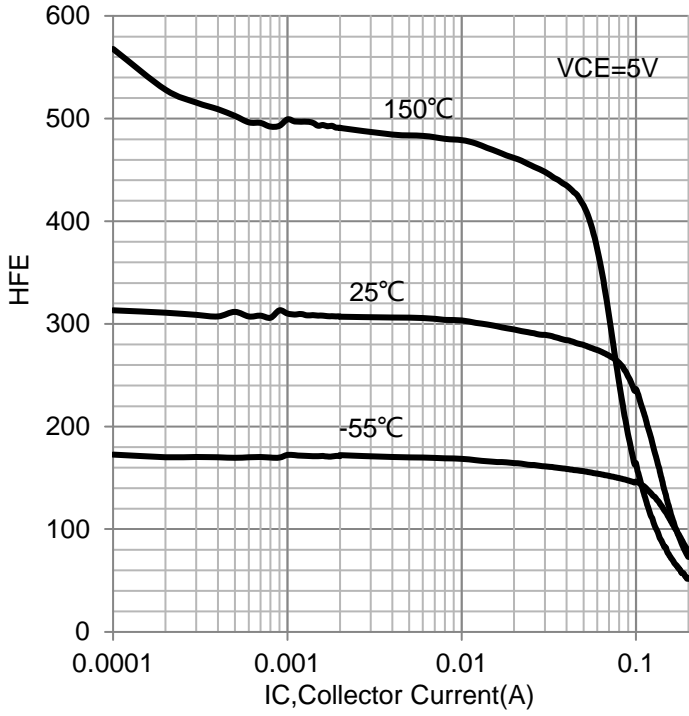
4. THERMAL CHARACTERISTICS

| Parameter | Symbol | Limits | Unit |
|---|----------------------------------|------------|-------|
| Total Device Dissipation | | 380 | mW |
| FR– 5 Board, (1) T A = 25°C | PD | 250 | mW |
| Derate above 25°C | | 3 | mW/°C |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 328 | °C/W |
| Junction and Storage Temperature | T _J ,T _{stg} | -55 ~ +150 | °C |

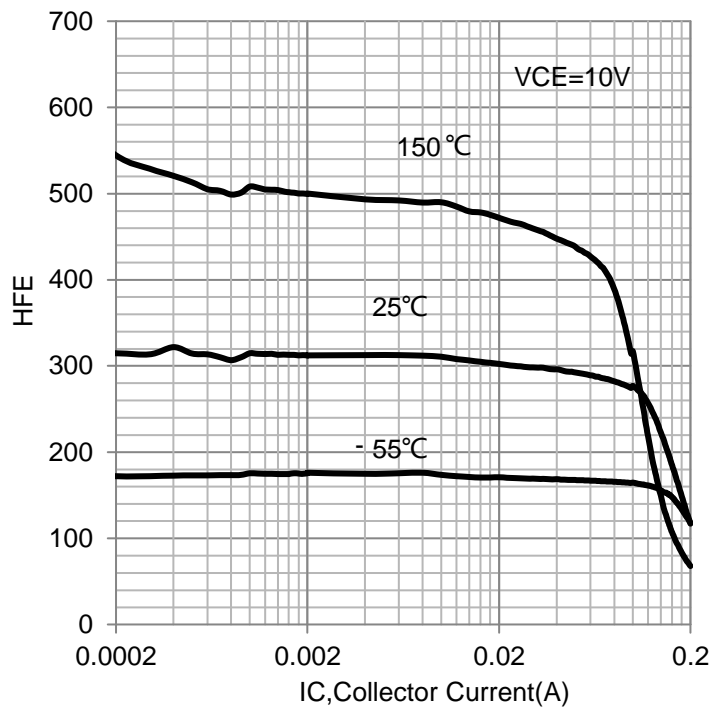
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|---|----------|----------|------------|-------------|----------|
| OFF CHARACTERISTICS | | | | | |
| Collector–Emitter Breakdown Voltage (IC = 10 mA) | V(BR)CEO | 45 | - | - | V |
| Collector–Emitter Breakdown Voltage (IC = 10 μA, VEB = 0) | V(BR)CES | 50 | - | - | V |
| Collector–Base Breakdown Voltage (IC = 10 μA) | V(BR)CBO | 50 | - | - | V |
| Emitter–Base Breakdown Voltage (IE = 1.0 μA) | V(BR)EBO | 6 | - | - | V |
| Collector Cutoff Current (VCB = 30 V) (VCB = 30 V, TA = 150°C) | ICBO | - - | - - | 15 5 | nA μA |
| ON CHARACTERISTICS | | | | | |
| DC Current Gain (IC = 2.0 mA, VCE = 5.0 V) | hFE | 200 | 290 | 450 | |
| 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 Vdc, 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 |

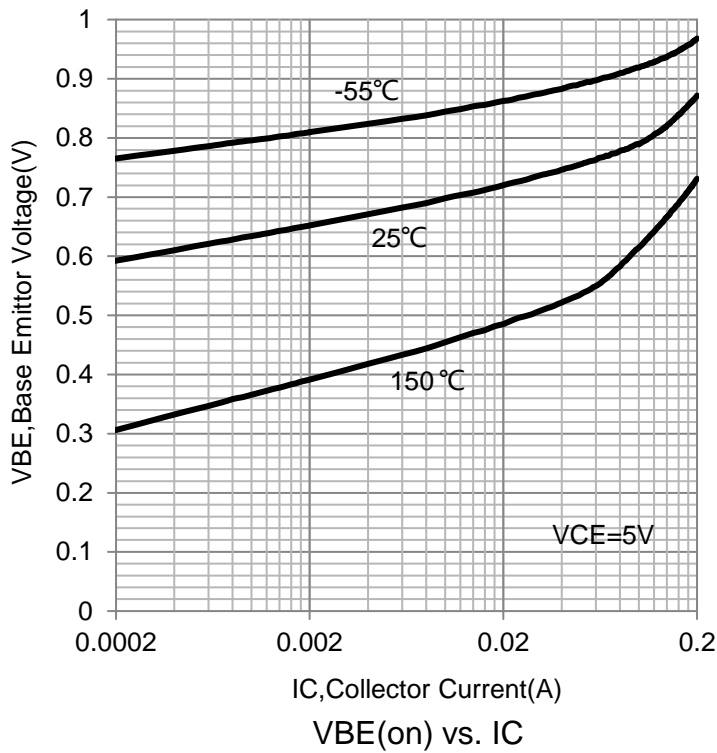
6.ELECTRICAL CHARACTERISTICS CURVES



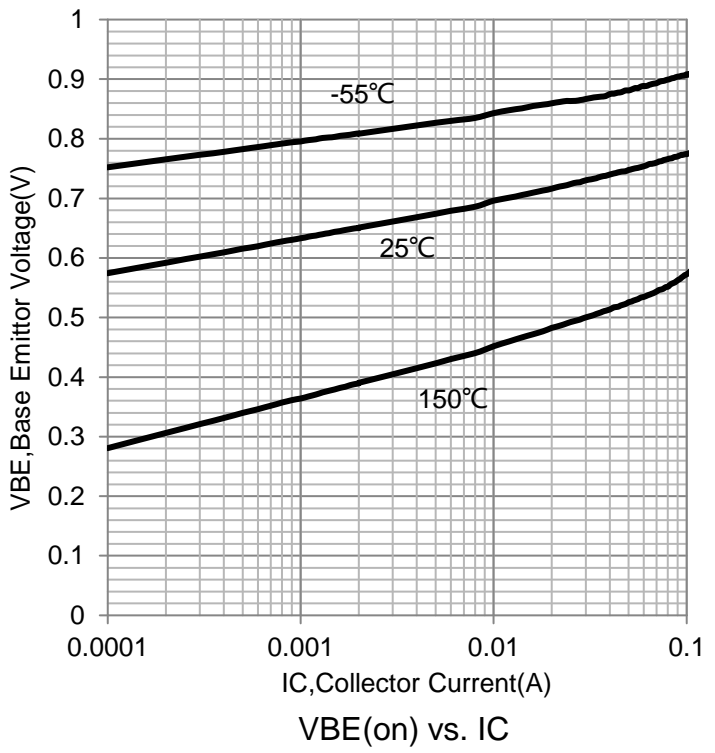
HFE vs. IC



HFE vs. IC (VCE=10V)

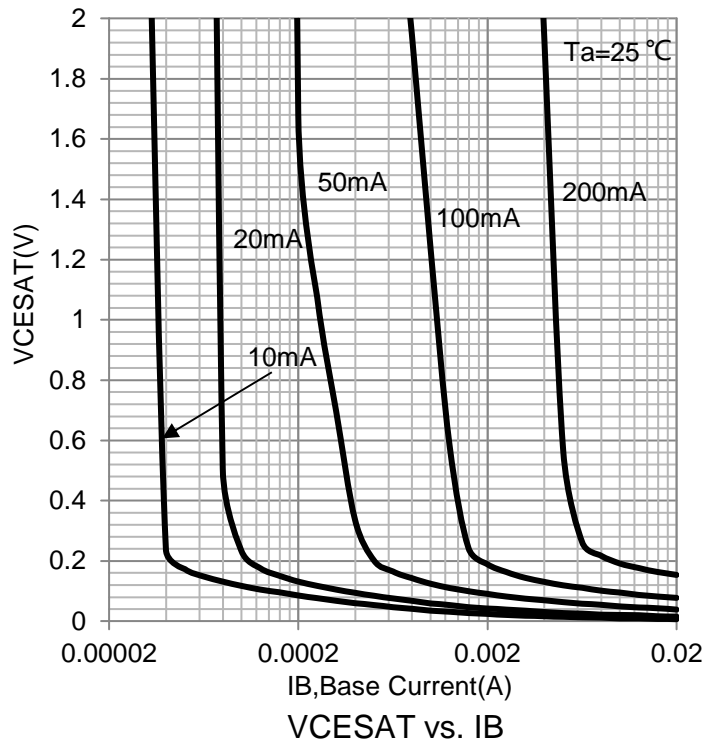
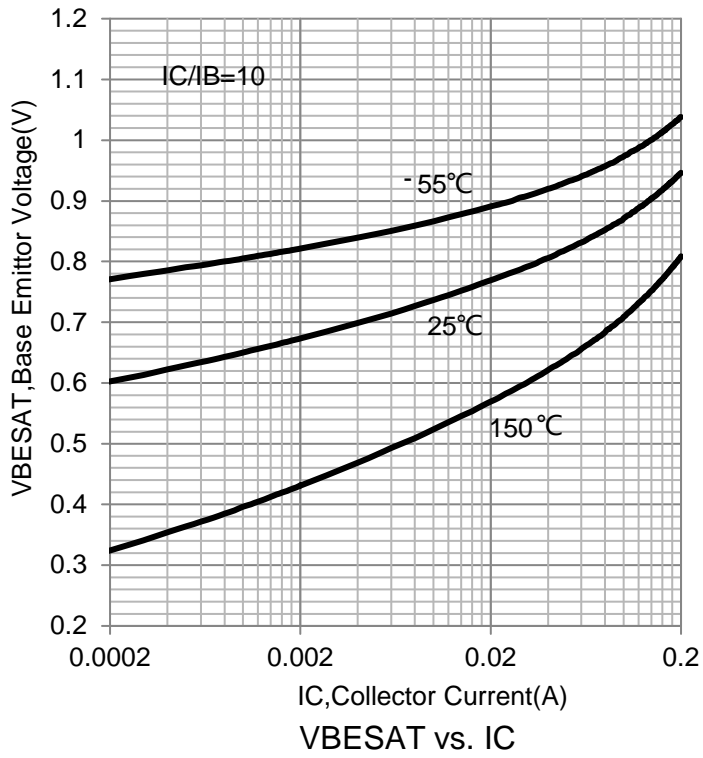


VBE(on) vs. IC



VBE(on) vs. IC

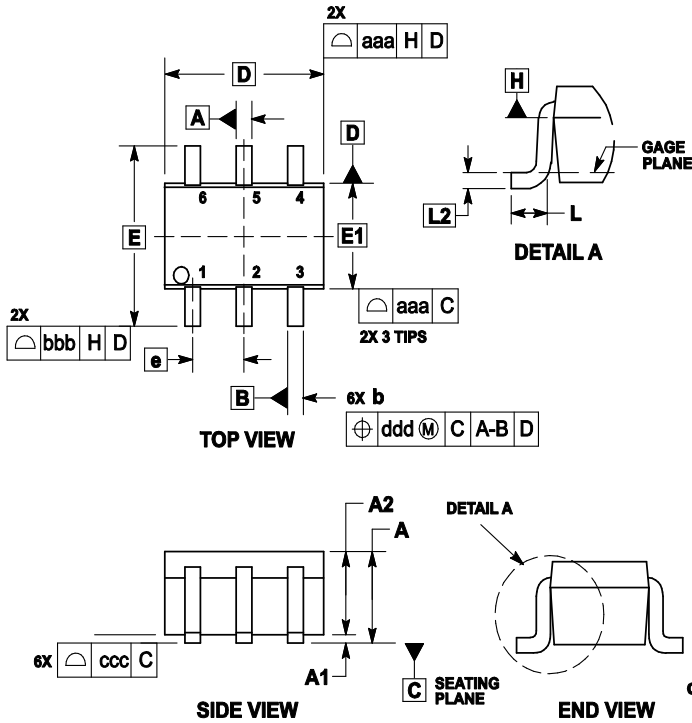
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



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 | --- | --- | 1.10 | --- | --- | 0.043 |
| A1 | 0.00 | --- | 0.10 | 0 | --- | 0.004 |
| A2 | 0.70 | 0.90 | 1.00 | 0.027 | 0.035 | 0.039 |
| b | 0.15 | 0.20 | 0.25 | 0.006 | 0.008 | 0.01 |
| C | 0.08 | 0.15 | 0.22 | 0.003 | 0.006 | 0.009 |
| D | 1.80 | 2.00 | 2.20 | 0.07 | 0.078 | 0.086 |
| E | 2.00 | 2.10 | 2.20 | 0.078 | 0.082 | 0.086 |
| E1 | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| e | 0.65 BSC | | | 0.026 BSC | | |
| L | 0.26 | 0.36 | 0.46 | 0.010 | 0.014 | 0.018 |
| L2 | 0.15 BSC | | | 0.006 BSC | | |
| aaa | 0.15 | | | 0.01 | | |
| bbb | 0.30 | | | 0.01 | | |
| ccc | 0.10 | | | 0.00 | | |
| ddd | 0.10 | | | 0.00 | | |

8. SOLDERING FOOTPRINT

