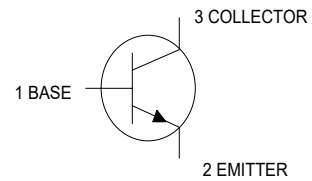
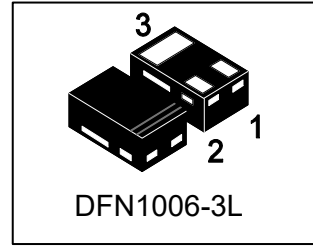


BC847BN

S-BC847BN

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 |
|---------|---------|-----------------|
| BC847BN | 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, FR-5 Board (Note 1) @ TA = 25°C Derate above 25°C | PD | 250 2 | mW mW/°C |
| Thermal Resistance, Junction–to–Ambient(Note 1) | R _{θJA} | 500 | °C/W |
| Junction and Storage temperature | T _J , T _{stg} | -55~+150 | °C |

1. FR-5 = 1.0×0.75×0.062 in.



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 μ A, VEB = 0) | VBR(CES) | 50 | - | - | V |
| Collector–Base Breakdown Voltage (IC = 10 μ A) | VBR(CBO) | 50 | - | - | V |
| Emitter–Base Breakdown Voltage (IE = 1.0 μ A) | VBR(EBO) | 6 | - | - | V |
| Collector Cutoff Current (VCB = 30 V) | ICBO | - | - | 15 | nA |
| (VCB = 30 V, TA = 150°C) | | - | - | 5 | μ A |

ON CHARACTERISTICS

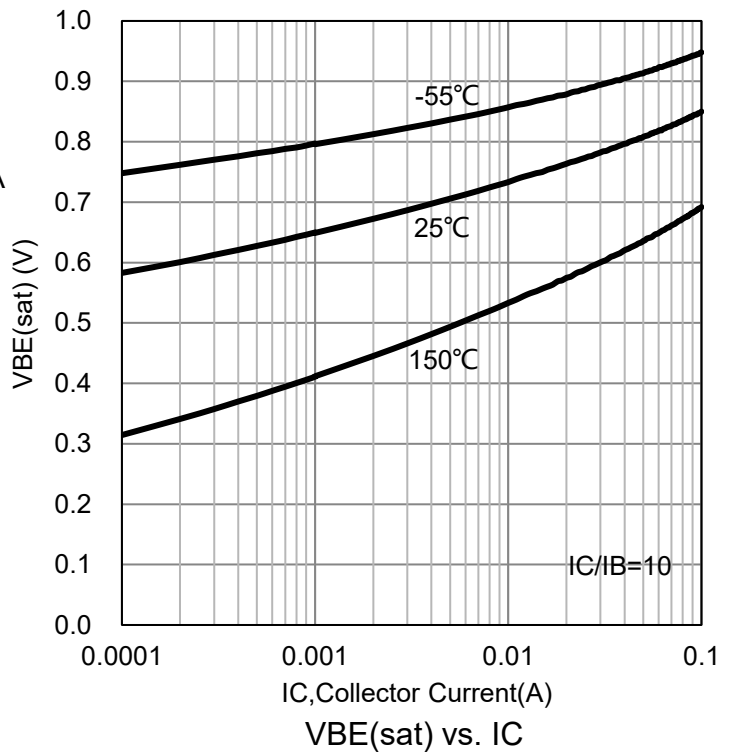
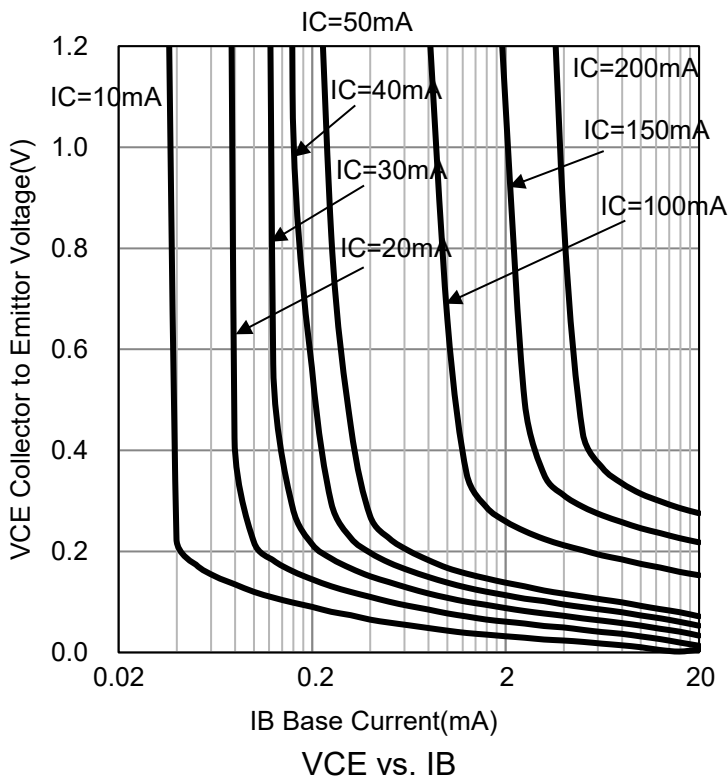
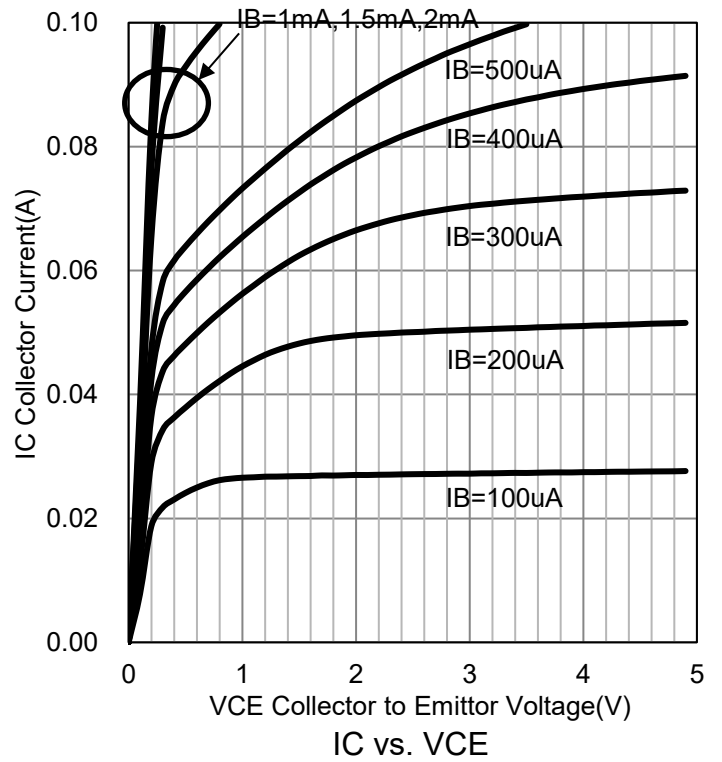
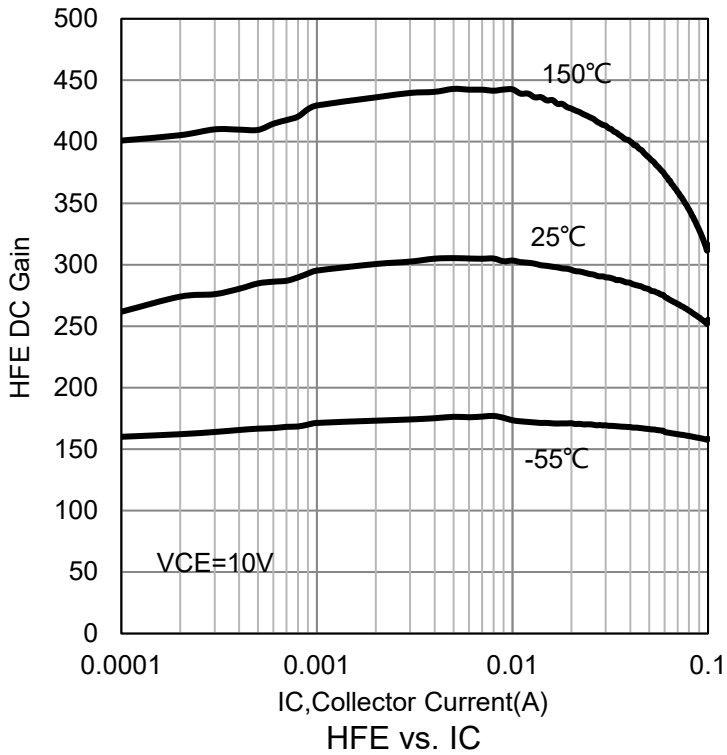
| | | | | | |
|-------------------------------------------------------------------|----------|-----|-----|------|----|
| DC Current Gain (IC = 2.0 mA, VCE = 5.0 V) | HFE | 200 | 290 | 450 | |
| Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.5 mA) | VCE(sat) | - | - | 0.25 | V |
| (IC = 100 mA, IB = 5.0 mA) | | - | - | 0.4 | |
| 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

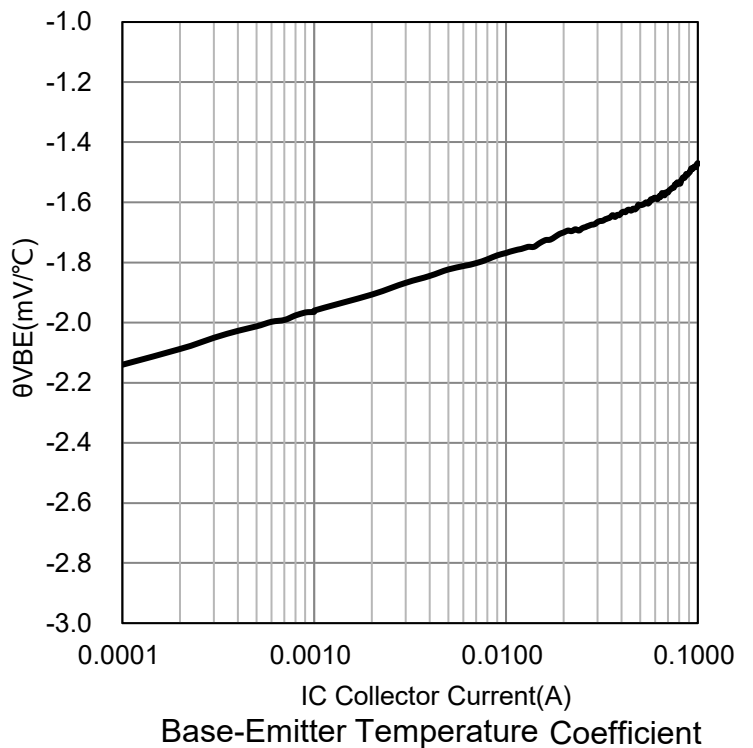
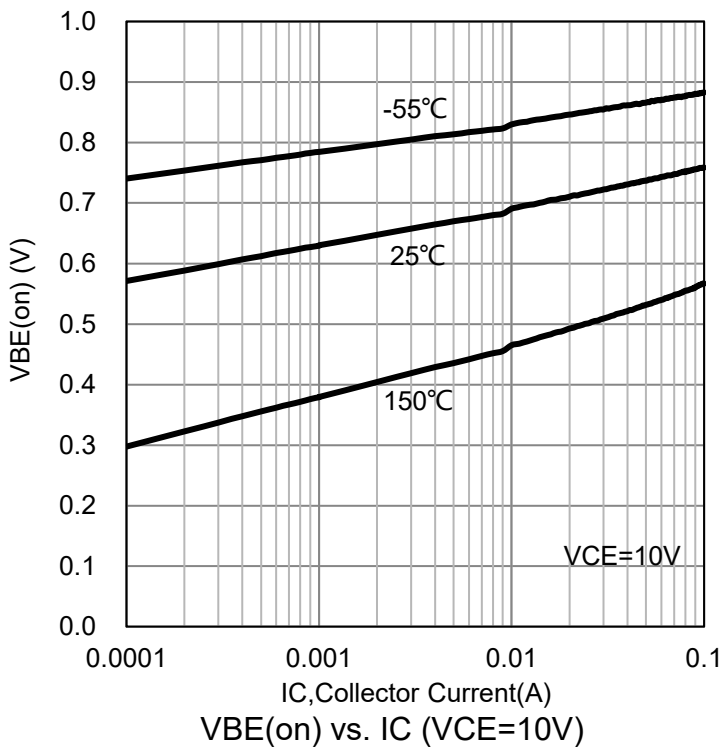
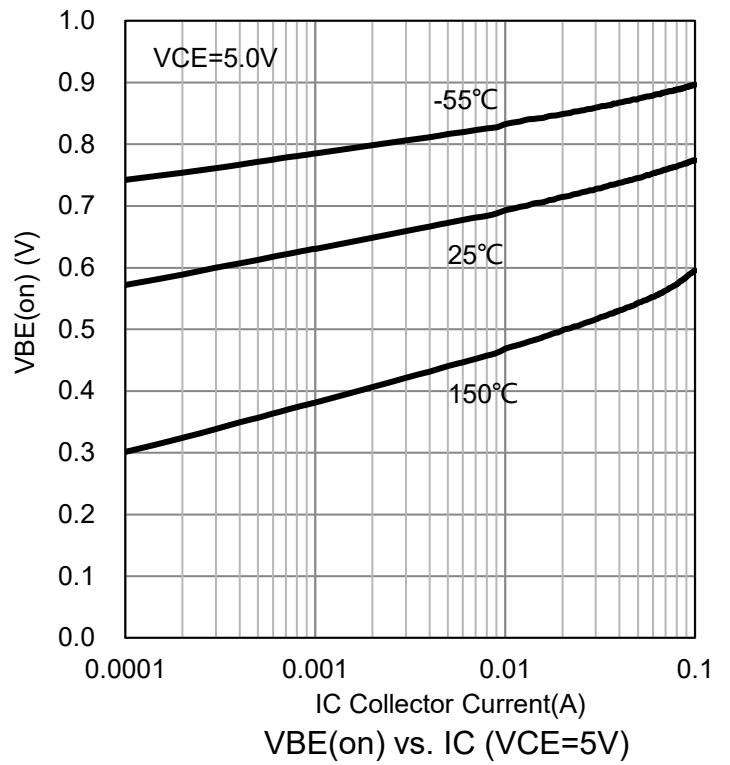
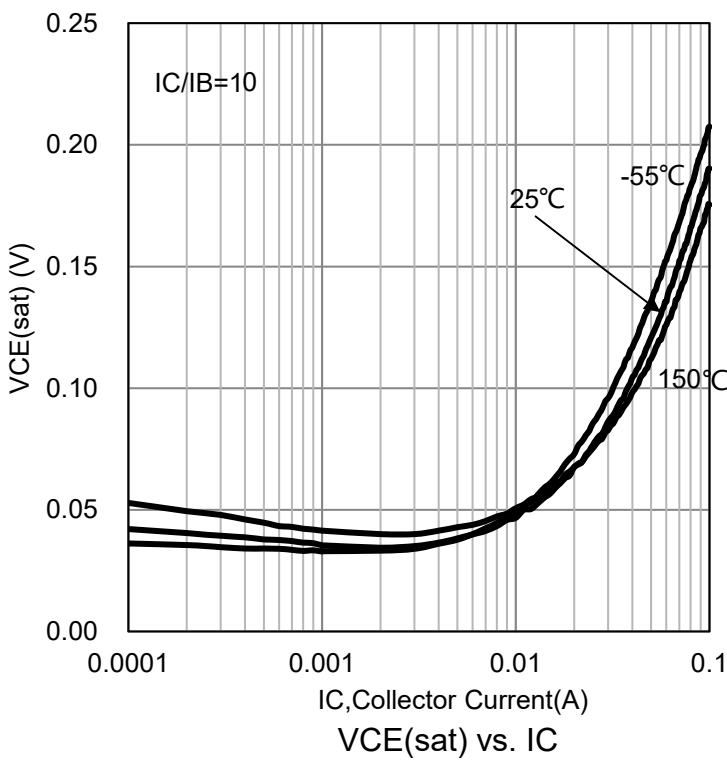
| | | | | | |
|---------------------------------------------------------------------------------------------|------|-----|---|-----|-----|
| Current–Gain — Bandwidth Product (IC = 10 mA, VCE = 5.0 V, f = 100 MHz) | fT | 100 | - | - | MHz |
| Output Capacitance (VCB = 10 V, f = 1.0 MHz) | Cobo | - | -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



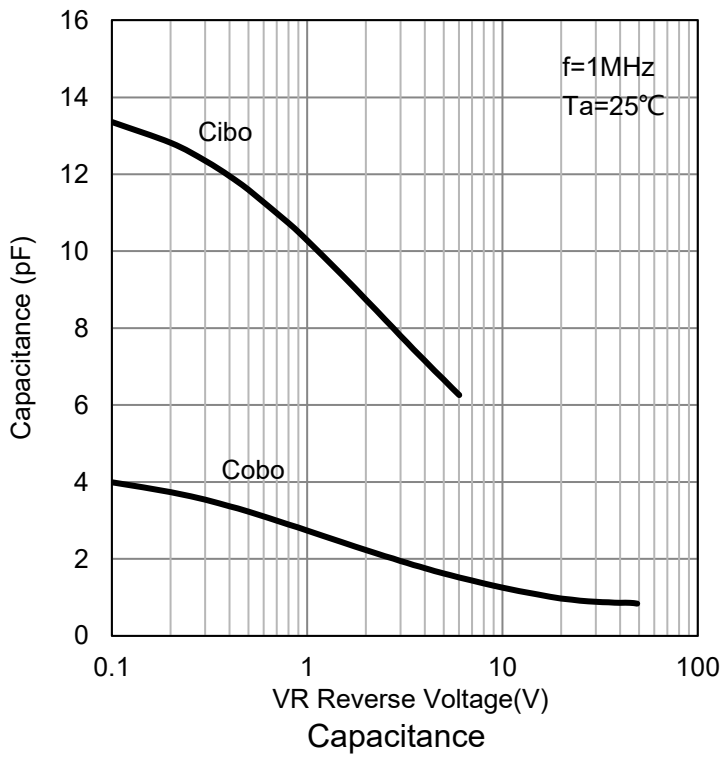
6.ELECTRICAL CHARACTERISTICS CURVES

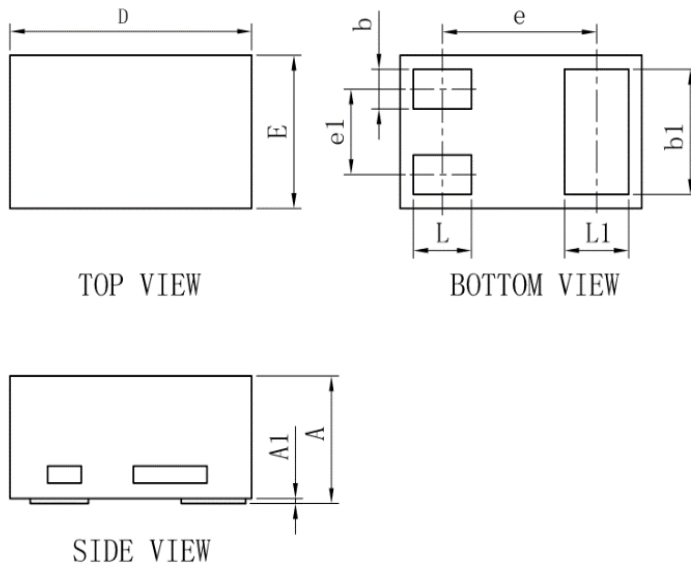


6. ELECTRICAL CHARACTERISTICS CURVES(Con.)

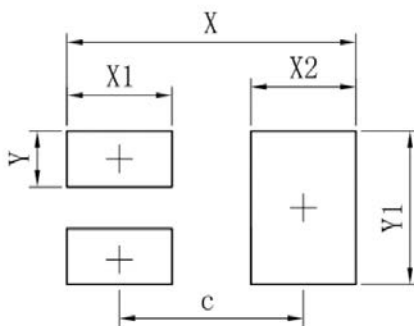


6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



7.OUTLINE AND DIMENSIONS


| DFN1006-3L | | | |
|----------------------|------|------|------|
| DIM | MIN | TYP | MAX |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| e | - | 0.64 | - |
| e1 | - | 0.34 | - |
| L | 0.19 | 0.24 | 0.29 |
| L1 | 0.22 | 0.27 | 0.32 |
| b | 0.10 | 0.15 | 0.20 |
| b1 | 0.44 | 0.49 | 0.54 |
| A | 0.43 | 0.48 | 0.53 |
| A1 | 0 | - | 0.05 |
| All Dimensions in mm | | | |

8.SOLDERING FOOTPRINT


| Dimensions | (mm) |
|------------|------|
| c | 0.70 |
| X | 1.10 |
| X1 | 0.40 |
| X2 | 0.40 |
| Y | 0.20 |
| Y1 | 0.55 |

