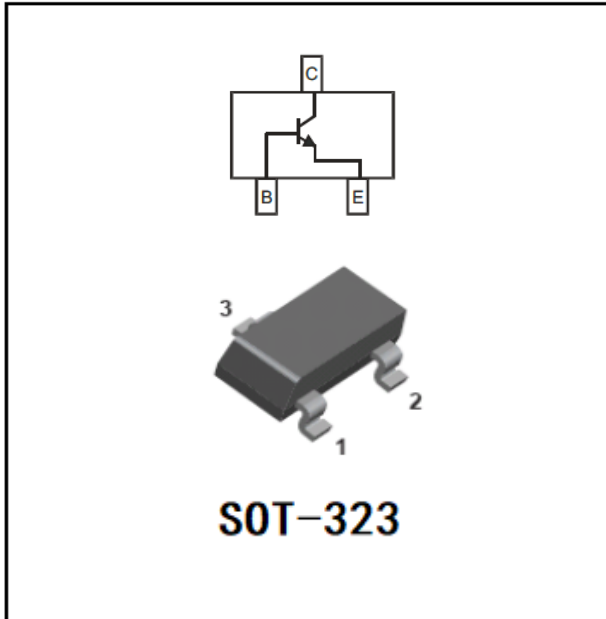


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- High Conductance
- Surface Mount Package Ideally Suited for Automatic Insertion

Mechanical Data

- **Package:** SOT-323
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:**

| | |
|---------|----|
| BC846AW | 1A |
| BC846BW | 1B |
| BC847AW | 1E |
| BC847BW | 1F |
| BC847CW | 1G |
| BC848AW | 1J |
| BC848BW | 1K |
| BC848CW | 1L |

■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-------------------------|---|----------|------|
| VCBO | Collector-Base Voltage | | |
| | BC846AW、BC846BW | 80 | V |
| | BC847AW、BC847BW、BC847CW | 50 | |
| BC848AW、BC848BW、BC848CW | 30 | | |
| VCEO | Collector-Emitter Voltage | | |
| | BC846AW、BC846BW | 65 | V |
| | BC847AW、BC847BW、BC847CW | 45 | |
| BC848AW、BC848BW、BC848CW | 30 | | |
| VEBO | Emitter-Base Voltage | 6 | V |
| IC | Collector Current | 0.1 | A |
| PC | Collector Power Dissipation | 200 | mW |
| RθJA | Thermal Resistance From Junction To Ambient | 625 | °C/W |
| Tj | Junction Temperature | 150 | °C |
| Tstg | Storage Temperature | -55~+150 | °C |



BC846AW THRU BC848CW

RoHS
COMPLIANT

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Test conditions | Min | Max | Unit |
|--|---------------|---|-------------------|-------------------|---------|
| Collector-base breakdown voltage BC846 BC847 BC848 | V_{CBO} | $I_C = 10\mu A, I_E = 0$ | 80 50 30 | | V |
| Collector-emitter breakdown voltage BC846 BC847 BC848 | V_{CEO} | $I_C = 10mA, I_B = 0$ | 65 45 30 | | V |
| Emitter-base breakdown voltage | V_{EBO} | $I_E = 10\mu A, I_C = 0$ | 6 | | V |
| Collector-base cut-off current BC846 BC847 BC848 | I_{CBO} | $V_{CB} = 70V, I_E = 0$ $V_{CB} = 50V, I_E = 0$ $V_{CB} = 30V, I_E = 0$ | | 0.1 | μA |
| Collector-emitter cut-off current BC846 BC847 BC848 | I_{CEO} | $V_{CE} = 60V, I_B = 0$ $V_{CE} = 45V, I_B = 0$ $V_{CE} = 30V, I_B = 0$ | | 0.1 | μA |
| Emitter-base cut-off current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | | 0.1 | μA |
| DC current gain BC846AW,847AW,848AW BC846BW,847BW,848BW BC847CW,BC848CW | h_{FE} | $V_{CE} = 5V, I_C = 2mA$ | 110 200 420 | 220 450 800 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100mA, I_B = 5mA$ | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 100mA, I_B = 5mA$ | | 1.1 | V |
| Transition frequency | f_T | $V_{CE} = 5V, I_C = 10mA$ $f = 100MHz$ | 100 | | MHz |
| Collector-base output capacitance | C_{ob} | $V_{CB} = 10V, f = 1MHz$ | | 4.5 | pF |

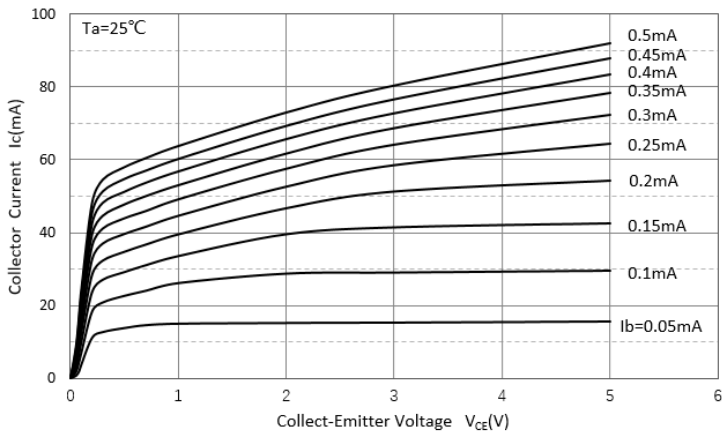
■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|----------------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| BC846AW THRU BC848CW | F2 | Approximate 0.005 | 3000 | 30000 | 120000 | 7" reel |

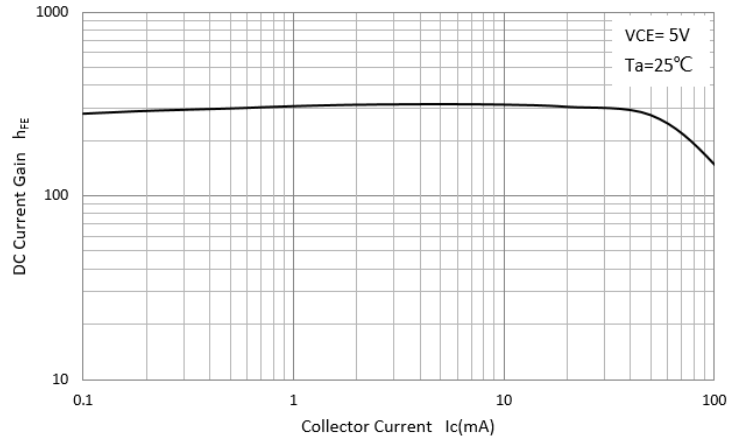


■ Characteristics(Typical)

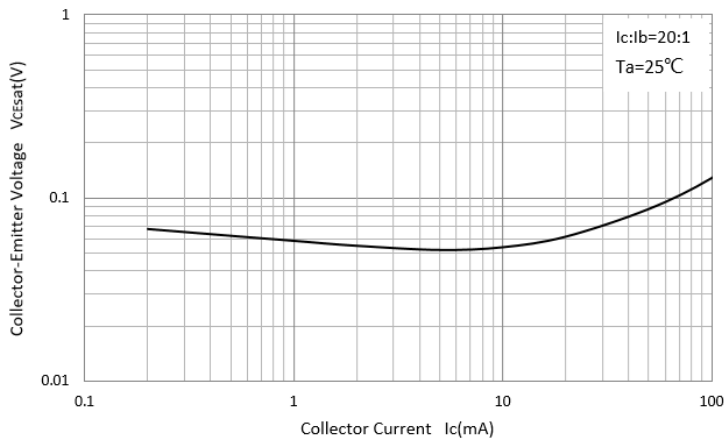
Static Characteristic



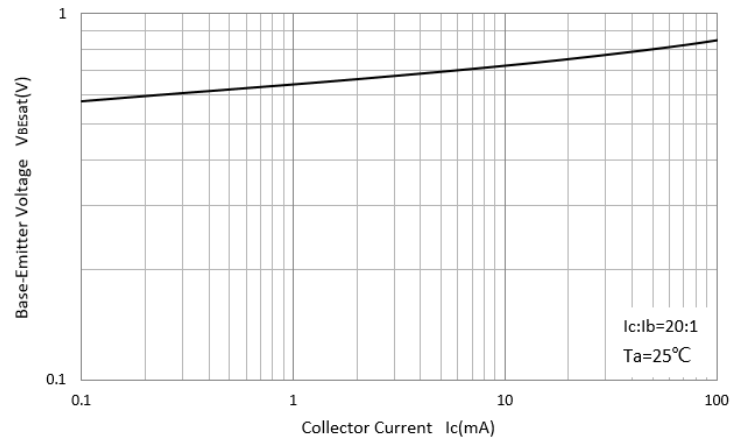
DC Current Gain



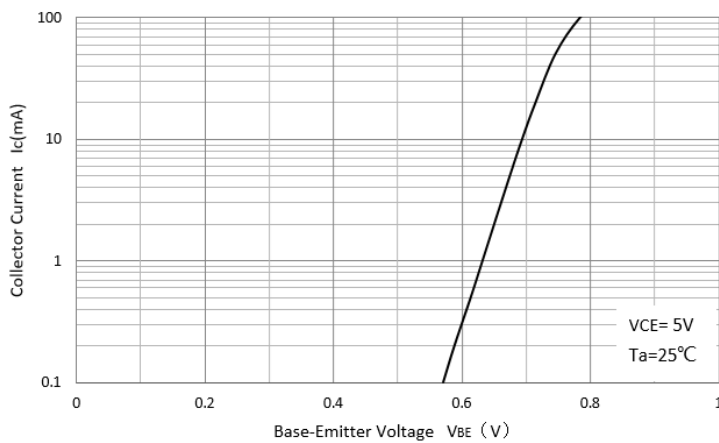
Collector-Emmitter Saturation Voltage



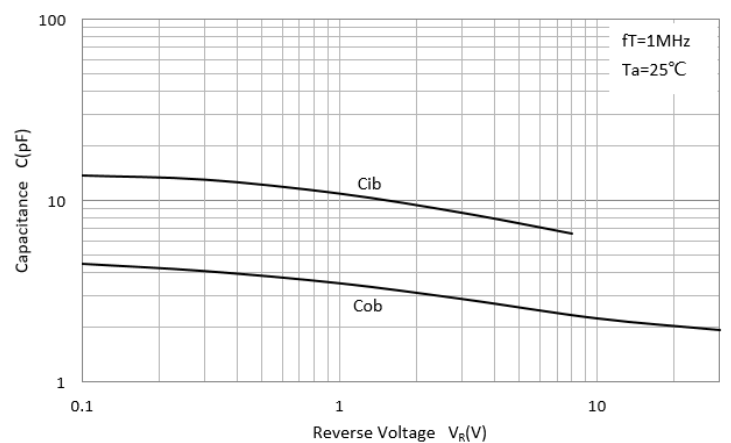
Base-Emmitter Saturation Voltage

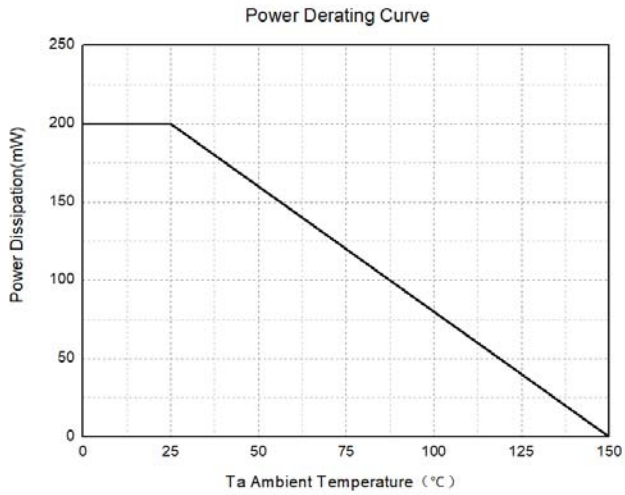


Base-Emmitter On Voltage

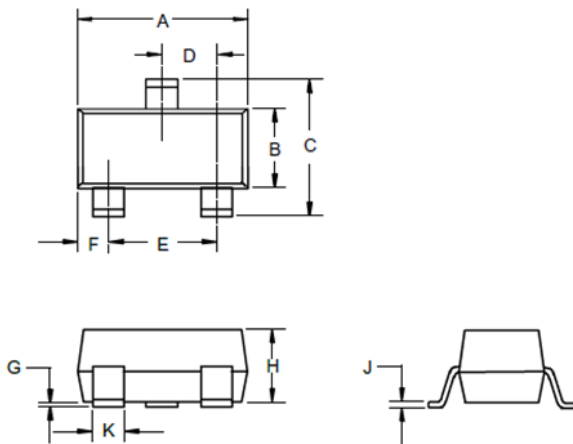


Cob/Cib-V_{CB}/V_{EB}



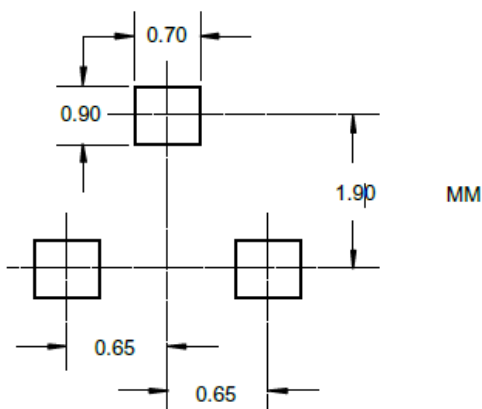


■ SOT-323 Package Outline Dimensions



| DIMENSIONS | | | | | |
|------------|--------------|------|-------------|------|------|
| DIM | INCHES | | MM | | NOTE |
| | MIN | MAX | MIN | MAX | |
| A | .071 | .087 | 1.80 | 2.20 | |
| B | .045 | .053 | 1.15 | 1.35 | |
| C | .083 | .096 | 2.10 | 2.45 | |
| D | .026 Nominal | | 0.65Nominal | | |
| E | .047 | .055 | 1.20 | 1.40 | |
| F | .012 | .016 | .30 | .40 | |
| G | .000 | .004 | .000 | .100 | |
| H | .035 | .039 | .90 | 1.00 | |
| J | .004 | .010 | .100 | .250 | |
| K | .006 | .016 | .15 | .40 | |

■ SOT-323 Soldering Footprint





Disclaimer

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