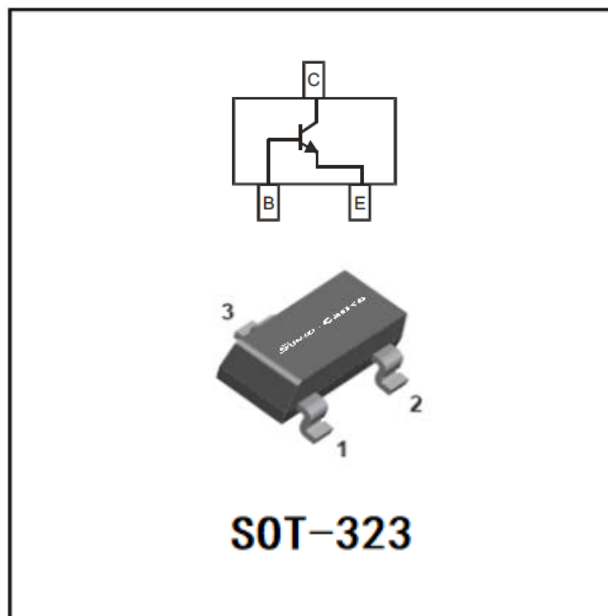


## NPN General Purpose Amplifier



### Features

- Capable of 0.2Watts( $T_A=25^{\circ}\text{C}$ ) of Power Dissipation
- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- Device Marking:

|           |    |
|-----------|----|
| BC817-16W | 6A |
| BC817-25W | 6B |
| BC817-40W | 6C |

### ■Maximum Ratings ( $T_A=25^{\circ}\text{C}$ Unless otherwise specified)

| Item                                        | Symbol          | Value       | Unit                 |
|---------------------------------------------|-----------------|-------------|----------------------|
| Collector-Emitter Voltage                   | $V_{CEO}$       | 45          | V                    |
| Collector-Base Voltage                      | $V_{CBO}$       | 50          | V                    |
| Emitter-Base Voltage                        | $V_{EBO}$       | 5.0         | V                    |
| Collector Current                           | $I_C$           | 0.5         | A                    |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 625         | $^{\circ}\text{C/W}$ |
| Operation Junction Temperature              | $T_J$           | -55 to +150 | $^{\circ}\text{C}$   |
| Storage Temperature                         | $T_{stg}$       | -55 to +150 | $^{\circ}\text{C}$   |

## BC817-16W THRU BC817-40W

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

| Item                                 | Symbol        | Unit          | Conditions                                | MIN | MAX |
|--------------------------------------|---------------|---------------|-------------------------------------------|-----|-----|
| Collector-Emitter Voltage            | $V_{CEO}$     | V             | $I_C=10\text{mA}$ , $I_B=0$               | 45  |     |
| Collector-Base Voltage               | $V_{CBO}$     | V             | $I_C=10\mu\text{A}$ , $I_E=0$             | 50  |     |
| Emitter-Base Voltage                 | $V_{EBO}$     | V             | $I_E=1.0\mu\text{A}$ , $I_C=0$            | 5.0 |     |
| Emitter-base Cut-off Current         | $I_{EBO}$     | $\mu\text{A}$ | $V_{EB}=4.0\text{V}$ , $I_C=0$            |     | 0.1 |
| Collector-base Cut-off Current       | $I_{CBO}$     | $\mu\text{A}$ | $V_{CB}=45\text{V}$ , $I_E=0$             |     | 0.1 |
| DC Current Gain                      | $h_{FE(1)}$   |               | $I_C=100\text{mA}$ , $V_{CE}=1.0\text{V}$ | 100 | 600 |
|                                      | $h_{FE(2)}$   |               | $I_C=500\text{mA}$ , $V_{CE}=1.0\text{V}$ | 40  |     |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | V             | $I_C=500\text{mA}$ , $I_B=50\text{mA}$    |     | 0.7 |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | V             | $I_C=500\text{mA}$ , $I_B=50\text{mA}$    |     | 1.2 |

### ■ Small-signal Characteristics

| Item                 | Symbol | Unit | Conditions                                                   | Min | Max |
|----------------------|--------|------|--------------------------------------------------------------|-----|-----|
| Transition frequency | $f_T$  | MHz  | $I_C=10\text{mA}$ , $V_{CE}=5.0\text{V}$ , $f=100\text{MHz}$ | 100 |     |

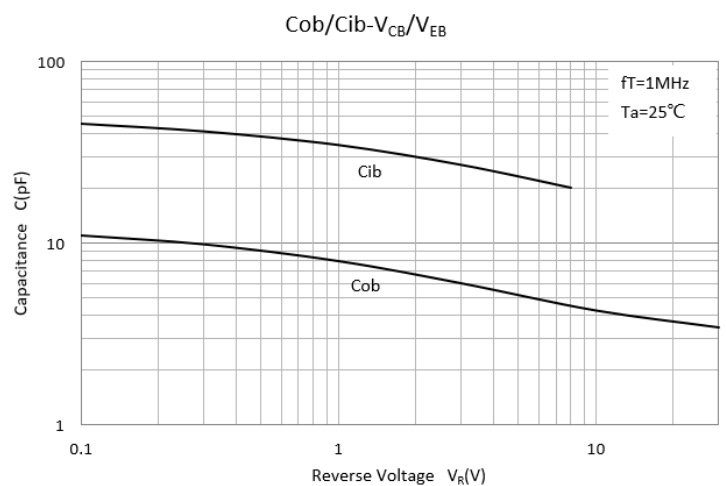
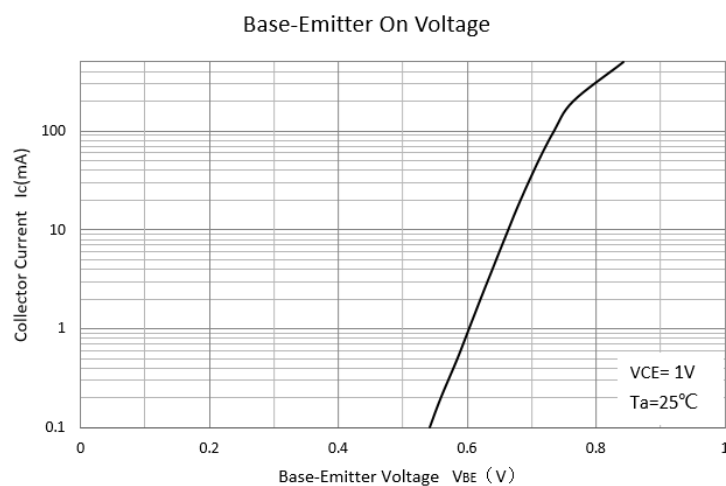
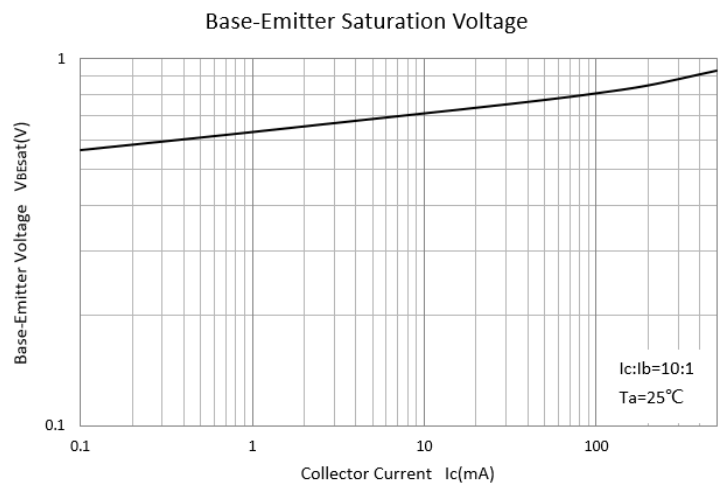
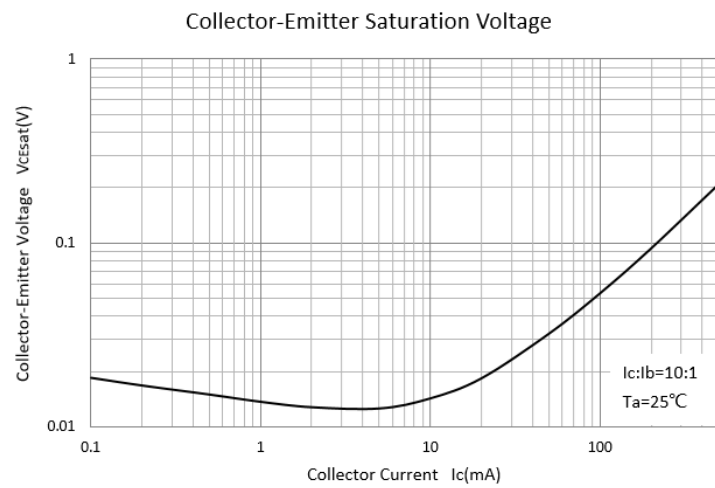
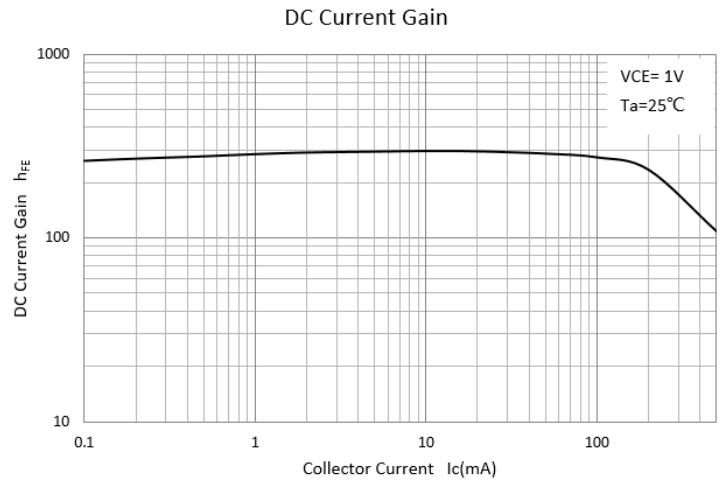
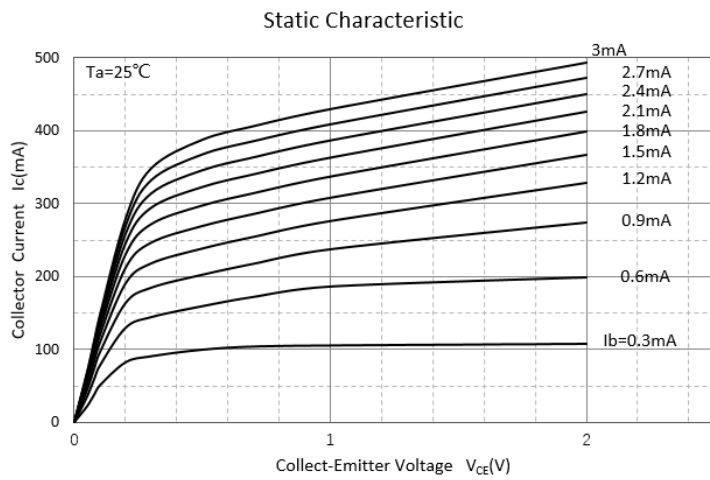
### ■ Classification of $h_{FE}$

| Rank  | BC817-16W | BC817-25W | BC817-40W |
|-------|-----------|-----------|-----------|
| Range | 100-250   | 160-400   | 250-600   |

### ■ Ordering Information (Example)

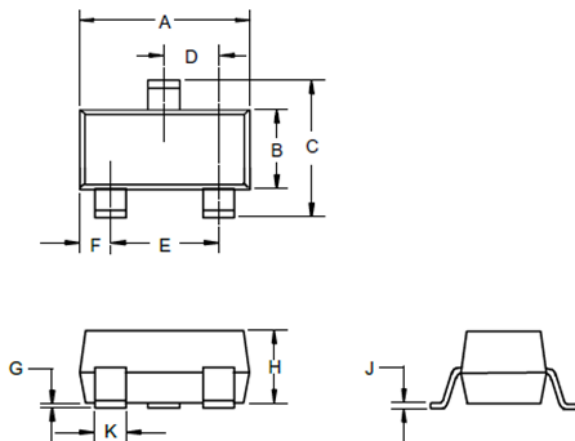
| Preferred P/N            | Packing Code | Unit Weight(G)    | Minimum Package(Pcs) | Inner Box Quantity(Pcs) | Outer Carton Quantity(Pcs) | Delivery Mode |
|--------------------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| BC817-16W THRU BC817-40W | F2           | Approximate 0.008 | 3000                 | 30000                   | 120000                     | 7" reel       |

■ Characteristics (Typical)



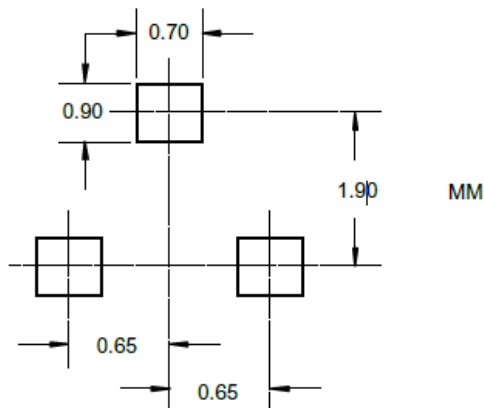
## BC817-16W THRU BC817-40W

### ■ 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



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