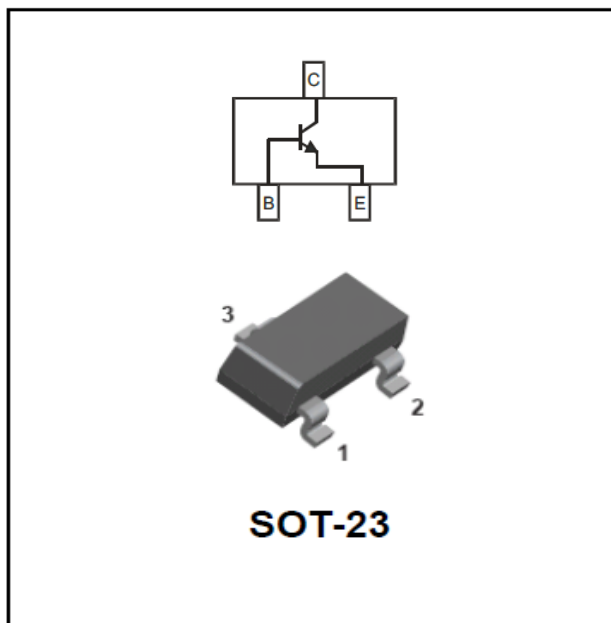


BC817-16 THRU BC817-40

NPN General Purpose Amplifier



Features

- Capable of 0.3Watts($T_A=25^{\circ}\text{C}$) 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:

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

■ Maximum Rating

| Item | Symbol | Unit | Value |
|---|-----------------|-----------------------------|-------------|
| Collector-Emitter Voltage | V_{CEO} | V | 45 |
| Emitter -Base Voltage | V_{EBO} | V | 5 |
| Collector Current | I_C | mA | 500 |
| Collector Power Dissipation | P_C | mW | 300 |
| Operation Junction Temperature | T_j | $^{\circ}\text{C}$ | -55 to +150 |
| Storage Temperature | T_{stg} | $^{\circ}\text{C}$ | -55 to +150 |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | $^{\circ}\text{C}/\text{W}$ | 417 |

■ Off Characteristics

| Item | Symbol | Unit | Conditions | MIN | MAX |
|--------------------------------|-----------|---------------|----------------------------------|-----|-----|
| Collector-Emitter Voltage | V_{CEO} | V | $I_C=10\text{mAdc}$, $I_E=0$ | 45 | |
| Collector-Base Voltage | V_{CBO} | V | $I_C=10\text{uAdc}$, $I_E=0$ | 50 | |
| Emitter-Base Voltage | V_{EBO} | V | $I_E=1.0\text{uAdc}$, $I_C=0$ | 5.0 | |
| Emitter-base Cut-off Current | I_{EBO} | uAdc | $V_{EB}=4.0\text{Vdc}$, $I_C=0$ | | 0.1 |
| Collector-base Cut-off Current | I_{CBO} | uAdc | $V_{CB}=45\text{Vdc}$, $I_E=0$ | | 0.1 |

BC817-16 THRU BC817-40

■ On Characteristics

| Item | | Symbol | Unit | Conditions | Min | Max |
|--------------------------------------|----------|---------------|------|------------------------------------|-----|-----|
| DC Current Gain | BC817-16 | h_{FE} | | $I_C=100mA_{dc}, V_{CE}=1.0V_{dc}$ | 100 | 250 |
| | BC817-25 | | | | 160 | 400 |
| | BC817-40 | | | | 250 | 600 |
| DC Current Gain | | h_{FE} | | $I_C=500mA_{dc}, V_{CE}=1.0V_{dc}$ | 40 | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | V | $I_C=500mA_{dc}, I_B=50mA_{dc}$ | | 0.7 |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | V | $I_C=500mA_{dc}, I_B=50mA_{dc}$ | | 1.2 |

■ Small-signal Characteristics

| Item | Symbol | Unit | Conditions | Min | Typ | Max |
|-----------------------------------|----------|------|---|-----|-----|-----|
| Transition frequency | f_T | MHz | $I_C=10mA_{dc}, V_{CE}=5.0V_{dc}, f=100MHz$ | 100 | | |
| Collector-base output capacitance | C_{ob} | pF | $V_{CB}=10V, F=1MHz$ | | 10 | |

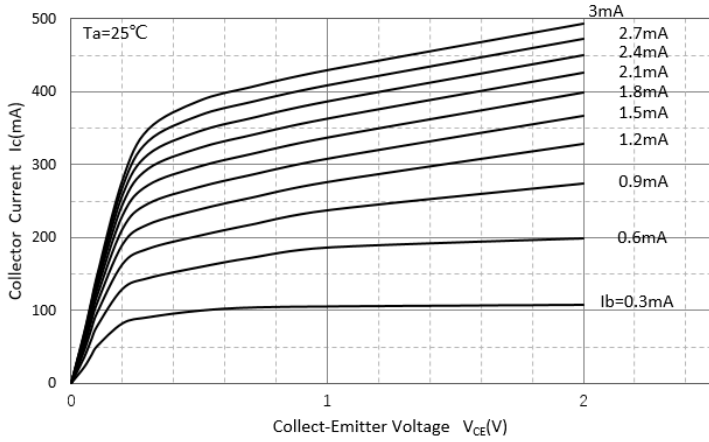
■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|------------------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| BC817-16 Thru BC817-40 | F2 | Approximate 0.008 | 3000 | 30000 | 120000 | 7" reel |

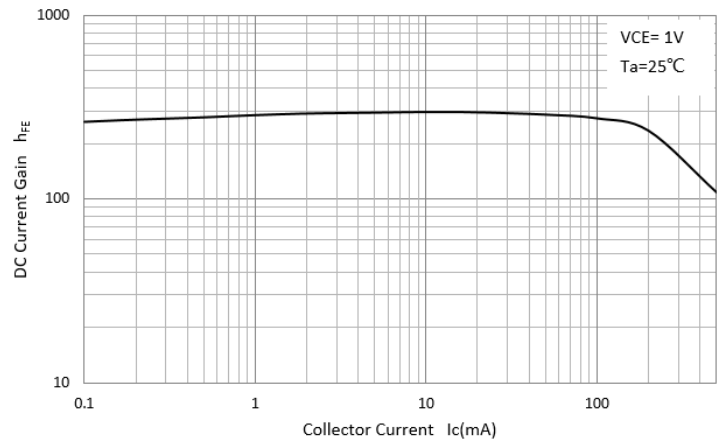
BC817-16 THRU BC817-40

■ Characteristics (Typical)

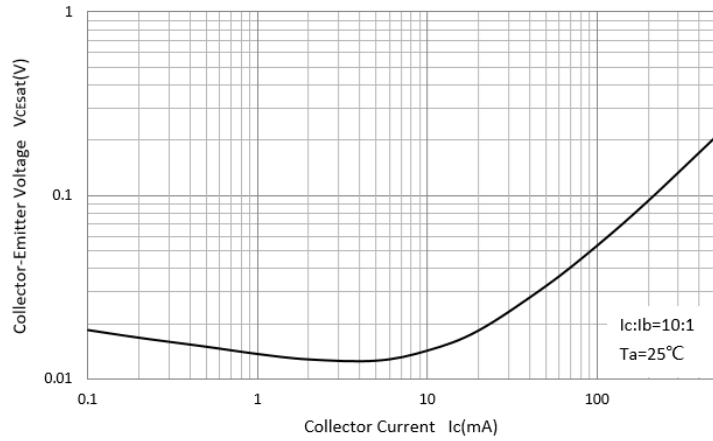
Static Characteristic



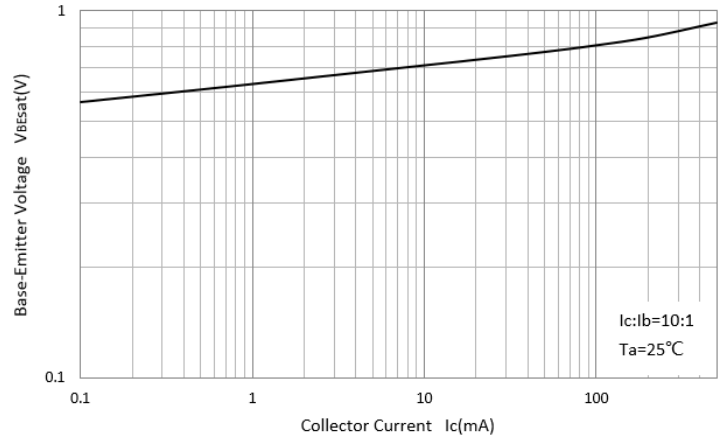
DC Current Gain



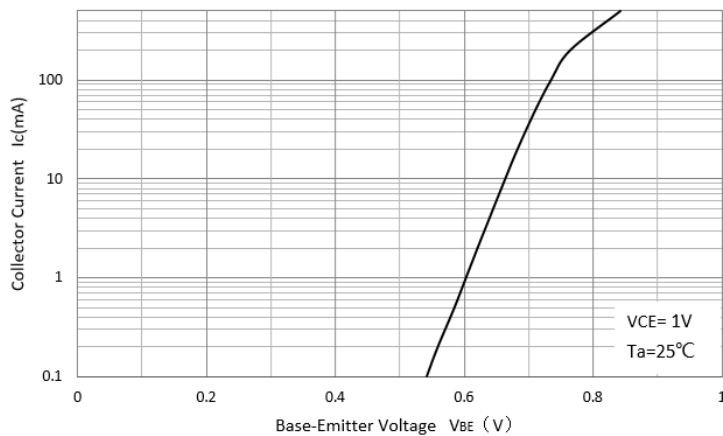
Collector-Emmitter Saturation Voltage



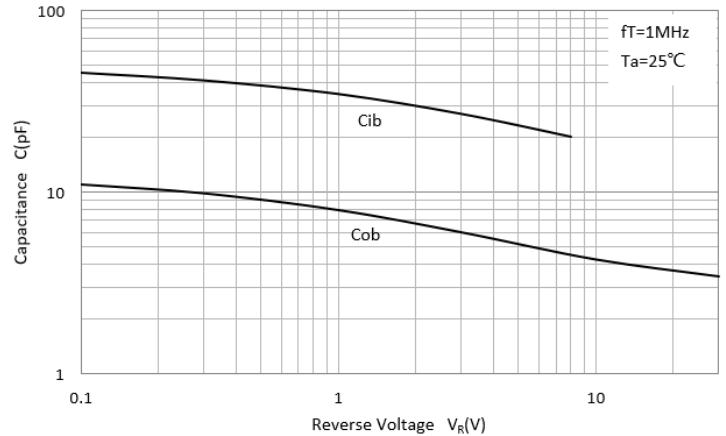
Base-Emmitter Saturation Voltage



Base-Emmitter On Voltage

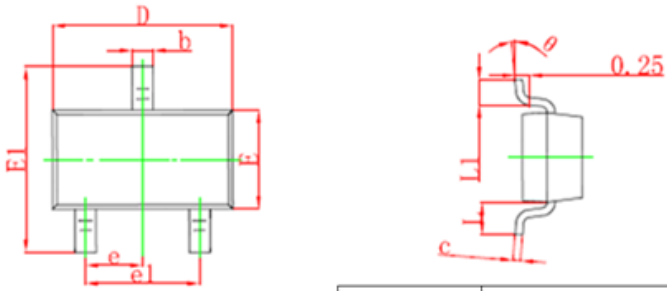


$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



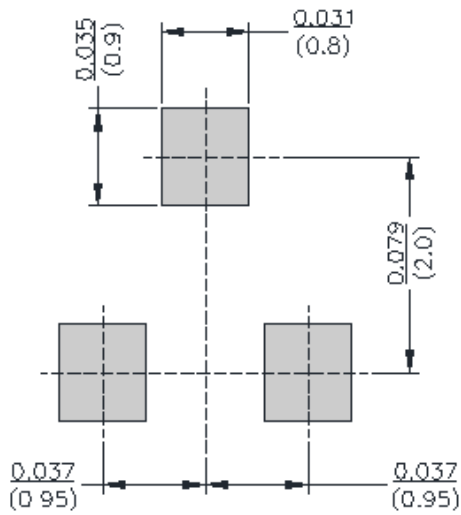
BC817-16 THRU BC817-40

■SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950TYP | | 0.037TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550REF | | 0.022REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| theta | 0° | | 8° | |

■SOT-23 Soldering Footprint



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