



Micro Commercial Components

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BC807-16
BC807-25
BC807-40

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Capable of 0.31Watts of Power Dissipation.
- Collector-current 0.5A
- Collector-base Voltage 50V
- Operating and storage junction temperature range: -55°C to +150°C
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Mechanical Data

- Case: SOT-23 Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Weight: 0.008 grams (approx.)
- Device Marking:

| | |
|----------|----|
| BC807-16 | 5A |
| BC807-25 | 5B |
| BC807-40 | 5C |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|----------------------------|---|-----|-----|---------|
| OFF CHARACTERISTICS | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ($I_C=10mA, I_B=0$) | 45 | --- | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=10\mu A, I_E=0$) | 50 | --- | Vdc |
| $V_{(BR)EBO}$ | Collector-Emitter Breakdown Voltage ($I_C=1.0mA, I_C=0$) | 5.0 | --- | Vdc |
| I_{CBO} | Collector Cutoff Current ($V_{CB}=45Vdc, I_E=0$) | --- | 0.1 | μA |
| I_{CEO} | Collector Cutoff Current ($V_{CE}=40Vdc, I_E=0$) | --- | 0.2 | μA |
| I_{EBO} | Emitter Cutoff Current ($V_{EB}=4.0Vdc, I_C=0$) | --- | 0.1 | μA |

ON CHARACTERISTICS

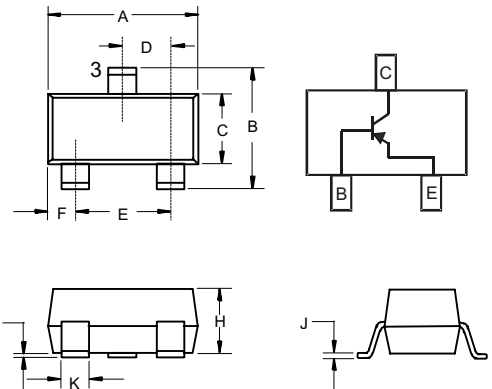
| | | | | |
|-----------------|--|-------------------|-------------------|--------------|
| $h_{FE(1)}$ | DC Current Gain ($I_C=10mA, V_{CE}=1.0Vdc$) BC807-16 BC807-25 BC807-40 | 100 160 250 | 250 400 600 | --- |
| $h_{FE(2)}$ | DC Current Gain ($I_C=500mA, V_{CE}=1.0Vdc$) | 40 | --- | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C=500mA, I_B=50mA$) | --- | 0.7 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C=500mA, I_B=50mA$) | --- | 1.2 | Vdc |
| $R_{\theta JA}$ | $T_A = 25^\circ C$ | --- | 403 | $^\circ C/W$ |

SMALL SIGNAL CHARACTERISTICS

| | | | | |
|-------|---|-----|-----|-----|
| f_T | Current-Gain-Bandwidth Product ($V_{CE}=5.0V, f=100MHz, I_C=10mA$) | 100 | --- | MHz |
|-------|---|-----|-----|-----|

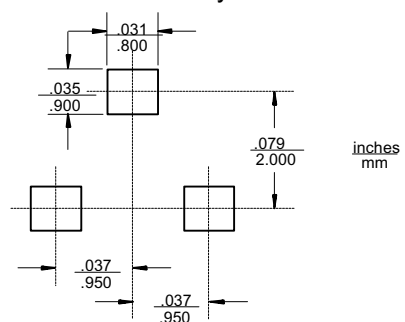
PNP Silicon General Purpose Transistors

SOT-23



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|------|------|------|
| | INCHES | | MM | | |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .104 | 2.10 | 2.64 | |
| C | .047 | .055 | 1.20 | 1.40 | |
| D | .035 | .041 | .89 | 1.03 | |
| E | .070 | .081 | 1.78 | 2.05 | |
| F | .018 | .024 | .45 | .60 | |
| G | .0005 | .0039 | .013 | .100 | |
| H | .035 | .044 | .89 | 1.12 | |
| J | .003 | .007 | .085 | .180 | |
| K | .015 | .020 | .37 | .51 | |

Suggested Solder Pad Layout



BC807-16 thru BC807-40

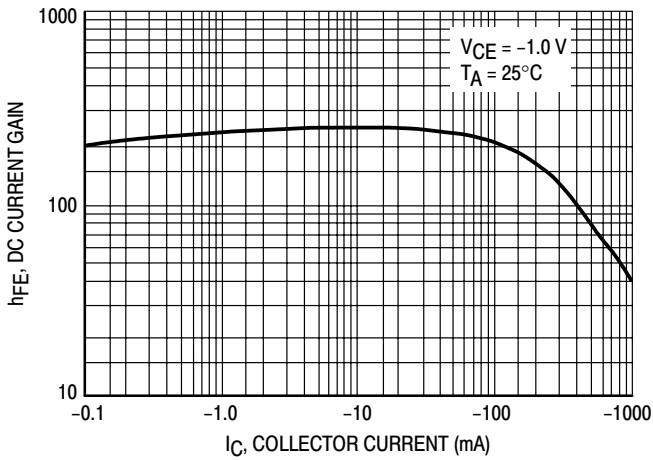


Figure 1. DC Current Gain

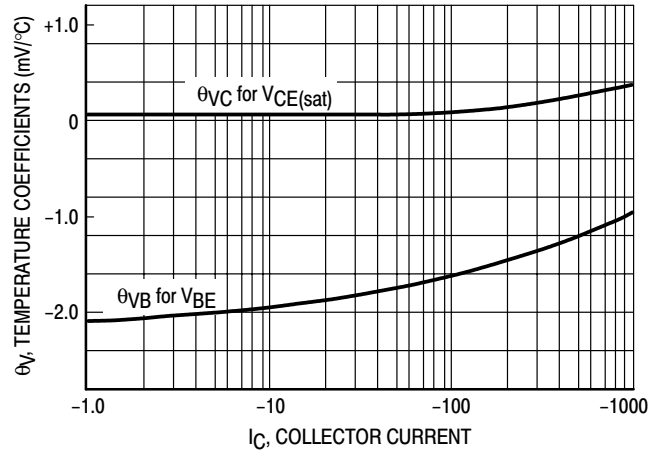


Figure 4. Temperature Coefficients

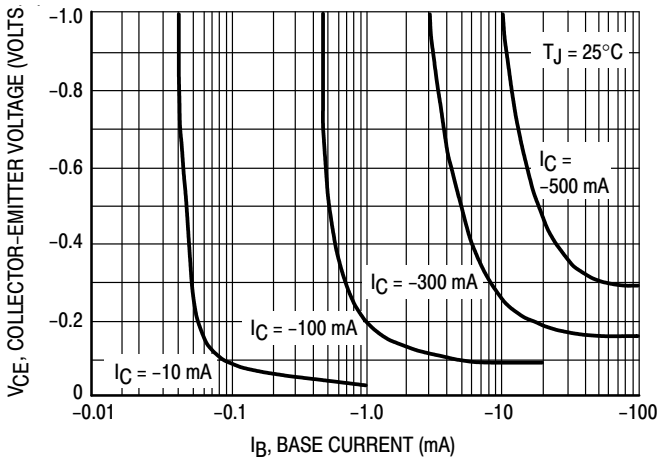


Figure 2. Saturation Region

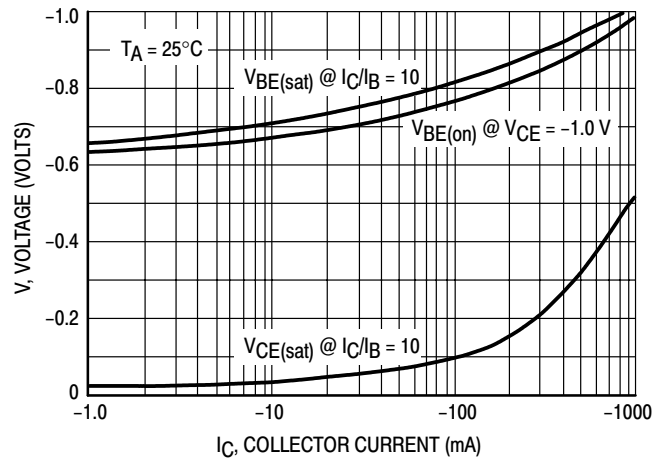


Figure 5. "On" Voltages

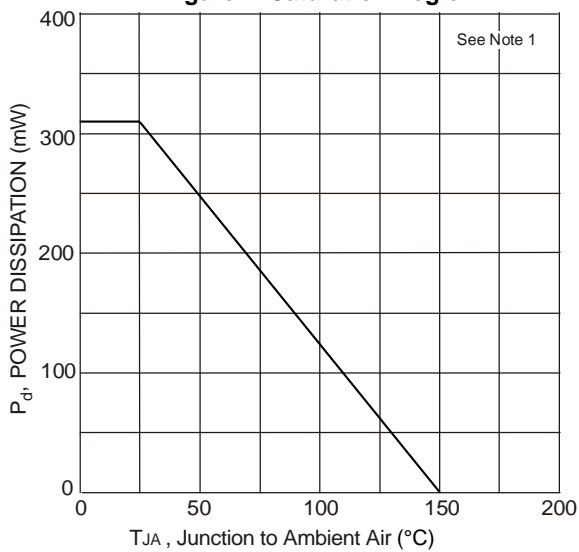


Figure 3. Power Derating Curve



TM

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Ordering Information :

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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