



Micro Commercial Components

Micro Commercial Components
 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

Features

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Ideally Suited for Automatic Insertion
- 150°C Junction Temperature
- For Switching and AF Amplifier Applications
- Epitaxial Planar Die Construction

Mechanical Data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approx.)
- Marking: BC817-16 6A
 BC817-25 6B
 BC817-40 6C

Maximum Ratings @ 25°C Unless Otherwise Specified

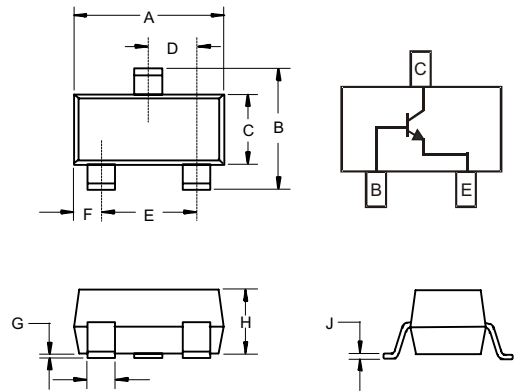
| Charateristic | Symbol | Value | Unit |
|---|----------------|---------|------|
| Collector-Emitter Voltage | V_{CEO} | 45 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 800 | mA |
| Peak Collector Current | I_{CM} | 1000 | mA |
| Peak Emitter Current | I_{EM} | 1000 | mA |
| Power Dissipation@ $T_s=50^\circ\text{C}$ (Note1) | P_d | 310 | mW |
| Operating & Storage Temperature | T_j, T_{STG} | -55~150 | °C |

Note: 1. Device mounted on Ceramic Substrate 0.7mm X 2.5cm² area

BC817-16 THRU BC817-40

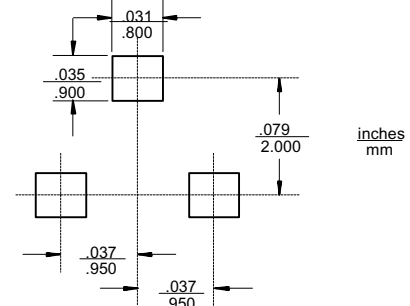
NPN Small Signal Transistor 310mW

SOT-23



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .098 | 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



Electrical Characteristics @25°C unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|--|--|-----|-----|---------|--|
| DC Current Gain | Current Gain Group -16 -25 -40 h_{FE} | 100 | 250 | — | $V_{CE} = 1.0V, I_C = 100mA$ |
| | | 160 | 400 | | $V_{CE} = 1.0V, I_C = 300mA$ |
| | | 250 | 600 | | |
| | | 60 | — | | |
| | Current Gain Group -16 -25 -40 | 100 | — | | |
| | | 170 | — | | |
| Thermal Resistance, Junction to Substrate Backside | $R_{\theta SB}$ | — | 320 | K/W | |
| Thermal Resistance, Junction to Ambient Air | $R_{\theta JA}$ | — | 400 | K/W | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | — | 0.7 | V | $I_C = 500mA, I_B = 50mA$ |
| Base-Emitter Voltage | V_{BE} | — | 1.2 | V | $V_{CE} = 1.0V, I_C = 300mA$ |
| Collector-Emitter Cutoff Current | I_{CES} | — | 100 | nA | $V_{CE} = 45V$ |
| | | — | 5.0 | μA | $V_{CE} = 25V, T_J = 150^\circ C$ |
| Emitter-Base Cutoff Current | I_{EBO} | — | 100 | nA | $V_{EB} = 4.0V$ |
| Gain Bandwidth Product | f_T | 100 | — | MHz | $V_{CE} = 5.0V, I_C = 10mA, f = 50MHz$ |
| Collector-Base Capacitance | C_{CBO} | — | 12 | pF | $V_{CB} = 10V, f = 1.0MHz$ |

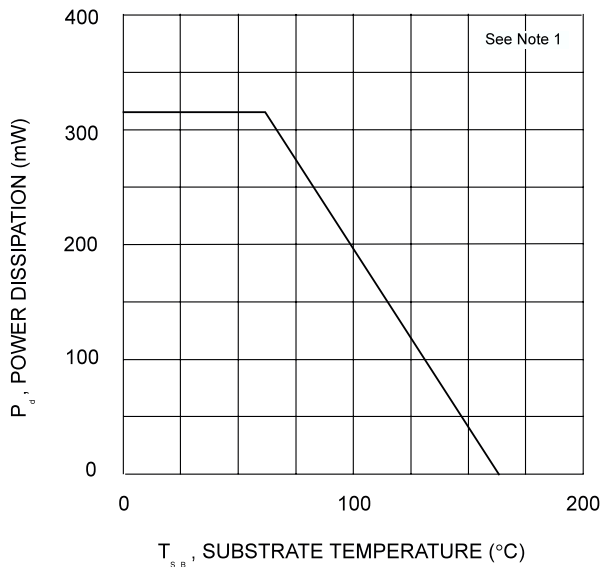


Fig. 1, Power Derating Curve

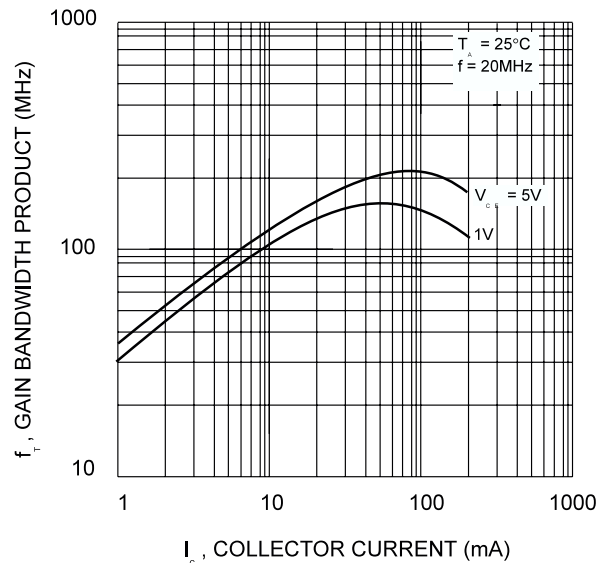


Fig. 2, Gain-Bandwidth Product vs Collector Current

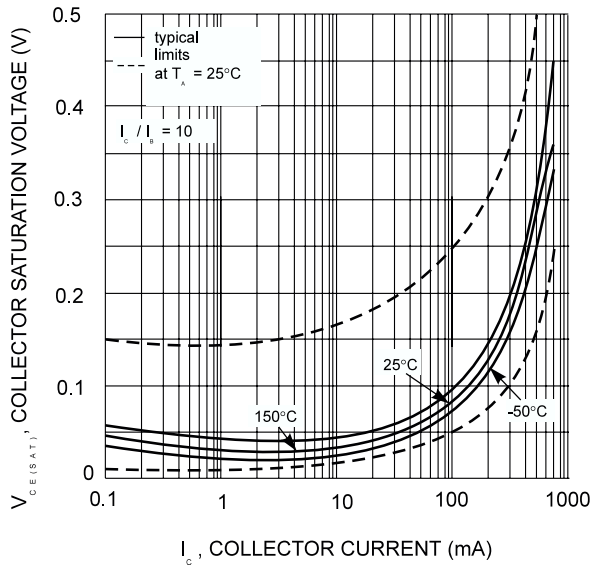


Fig. 3, Collector Sat. Voltage vs Collector Current

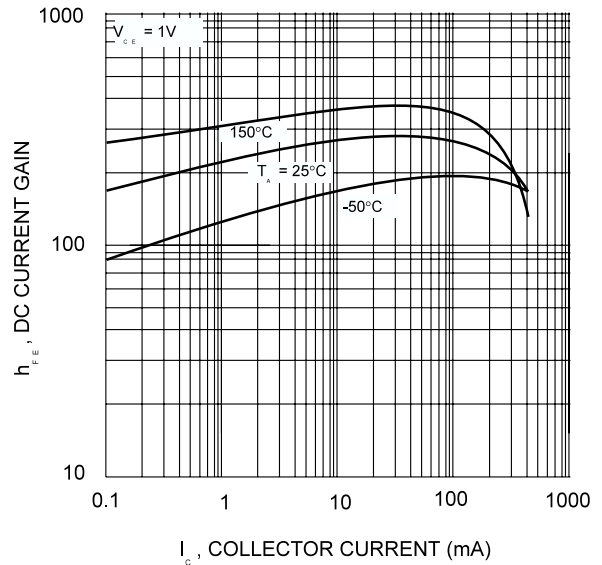


Fig. 4, DC Current Gain vs Collector Current

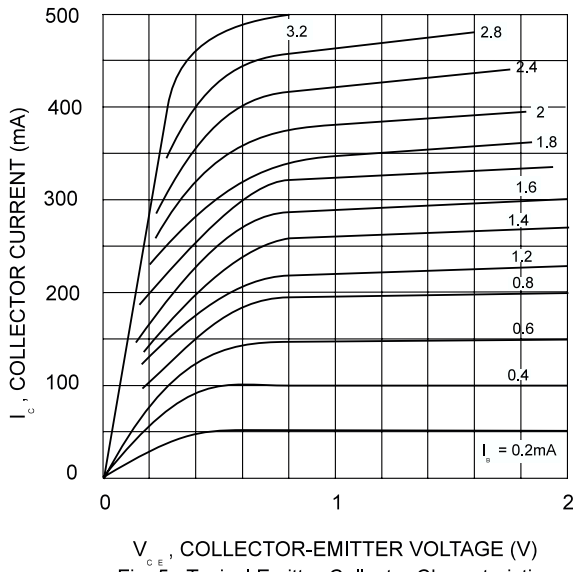


Fig. 5, Typical Emitter-Collector Characteristics

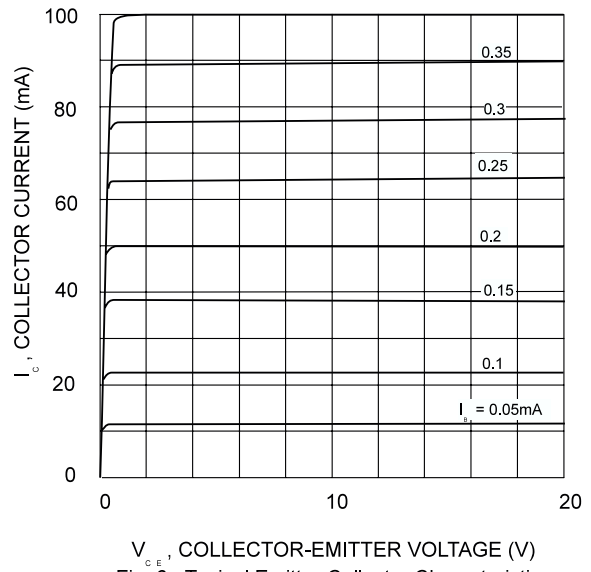


Fig. 6, Typical Emitter-Collector Characteristics



Micro Commercial Components

Ordering Information

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

*****IMPORTANT NOTICE*****

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

*****APPLICATIONS DISCLAIMER*****

Products offer by *Micro Commercial Components Corp.* are not intended for use in Medical, Aerospace or Military Applications.