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[Micro Commercial Components \(MCC\)](#)  
[BC847A-TP](#)

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[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)



Micro Commercial Components



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

## BC846A THRU BC849C

## NPN Plastic-Encapsulate Transistors

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Power Dissipation: 0.225W ( $T_{amb}=25^{\circ}\text{C}$ )(Note 1)
- Collector Current: 0.1A
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

- Operating temperature :  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Storage temperature :  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$

### DEVICE MARKING

BC846A=1A,46A; BC846B=1B,46B;

BC847A=1E,47A; BC847B=1F,47B; BC847C=1G,47C;

BC848A=1J,48A; BC848B=1K,48B; BC848C=1L,48C

BC849B=49B; BC849C=49C;

### Electrical Characteristics @ $25^{\circ}\text{C}$ Unless Otherwise Specified

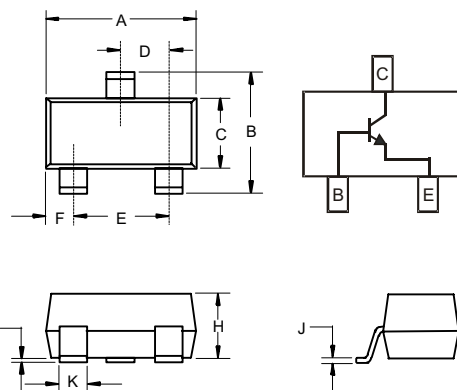
| Symbol | Parameter | Min | Max | Units |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

### OFF CHARACTERISTICS

|               |   |                   |                   |               |
|---------------|---|-------------------|-------------------|---------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage<br>( $I_C=10\mu\text{A}$ , $I_E=0$ )   |                   |                   | Vdc           |
|               | BC846   | 80                | ---               |               |
|               | BC847   | 50                | ---               |               |
|               | BC848, BC849  | 30                | ---               |               |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage<br>( $I_C=10\text{mA}$ , $I_B=0$ )  |                   |                   | Vdc           |
|               | BC846   | 65                | ---               |               |
|               | BC847   | 45                | ---               |               |
|               | BC848, BC849  | 30                | ---               |               |
| $V_{(BR)EBO}$ | Collector-Emitter Breakdown Voltage<br>( $I_E=10\mu\text{A}$ , $I_C=0$ )  | 6                 | ---               | Vdc           |
| $I_{CBO}$     | Collector Cut-off Current<br>BC846 ( $V_{CB}=70\text{V}$ , $I_E=0$ )<br>BC847 ( $V_{CB}=50\text{V}$ , $I_E=0$ )<br>BC848, BC849 ( $V_{CB}=30\text{V}$ , $I_E=0$ ) | ---               | 0.1               | $\mu\text{A}$ |
| $I_{CEO}$     | Collector Cut-off Current<br>BC846 ( $V_{CE}=60\text{V}$ , $I_B=0$ )<br>BC847 ( $V_{CE}=45\text{V}$ , $I_B=0$ )<br>BC848, BC849 ( $V_{CE}=30\text{V}$ , $I_B=0$ ) | ---               | 0.1               | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter Cut-off Current<br>( $V_{EB}=5\text{V}$ , $I_C=0\text{mA}$ )  | ---               | 0.1               | $\mu\text{A}$ |
| $H_{FE(1)}$   | DC Current Gain( $V_{CE}=5\text{V}$ , $I_C=2\text{mA}$ )<br>BC846A, 847A, 848A<br>BC846B, 847B, 848B, 849B<br>BC847C, BC848C, BC849C                              | 110<br>200<br>420 | 220<br>450<br>800 |               |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=100\text{mA}$ , $I_B=5\text{mA}$ )   | ---               | 0.5               | Vdc           |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage<br>( $I_C=100\text{mA}$ , $I_B=5\text{mA}$ )  | ---               | 1.1               | Vdc           |
| $f_T$         | Transition Frequency<br>( $V_{CE}=5\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$ )  | 100               | ---               | MHz           |

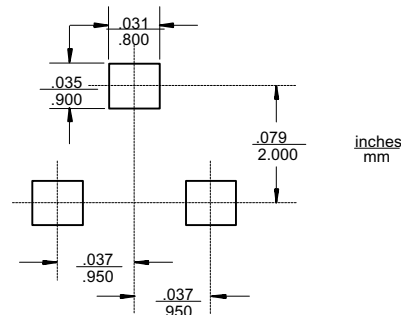
Note 1: Transistor mounted on an FR4 printed-circuit board

### SOT-23



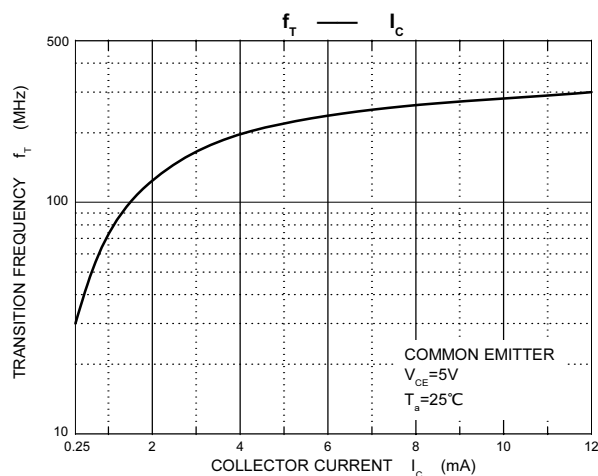
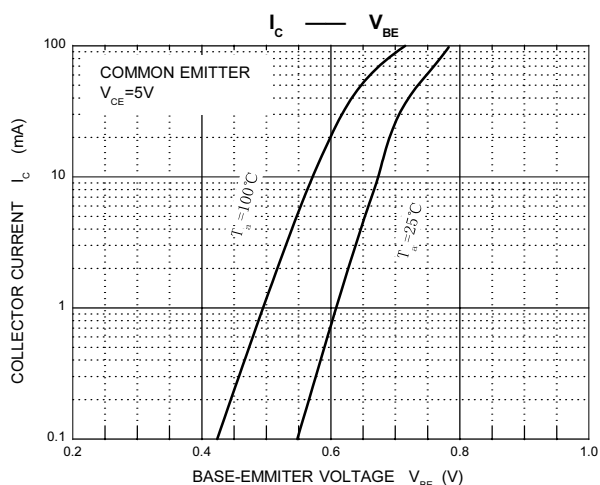
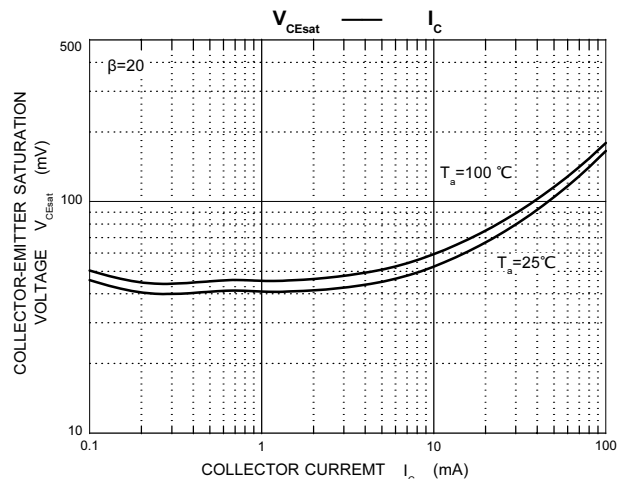
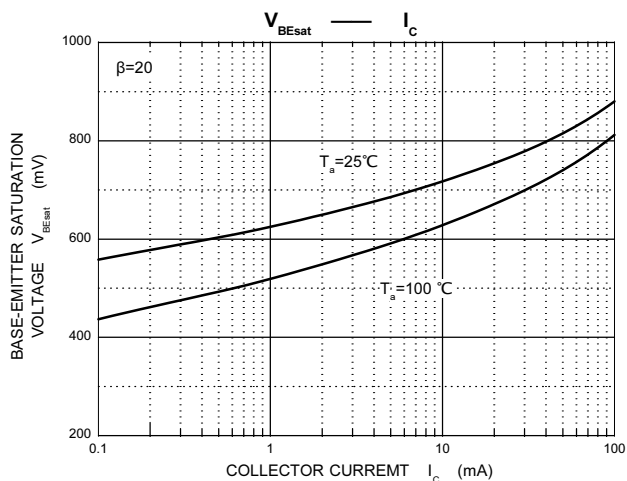
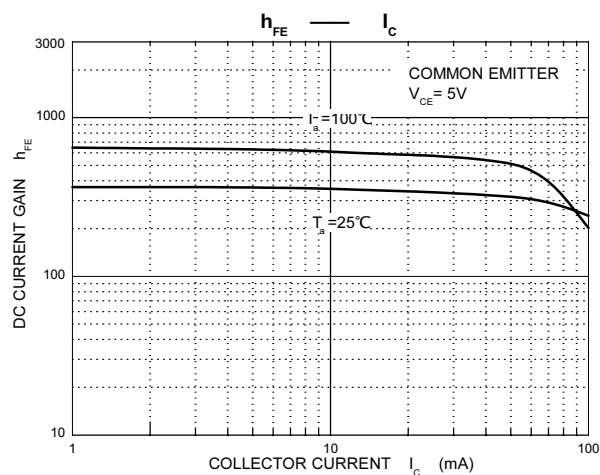
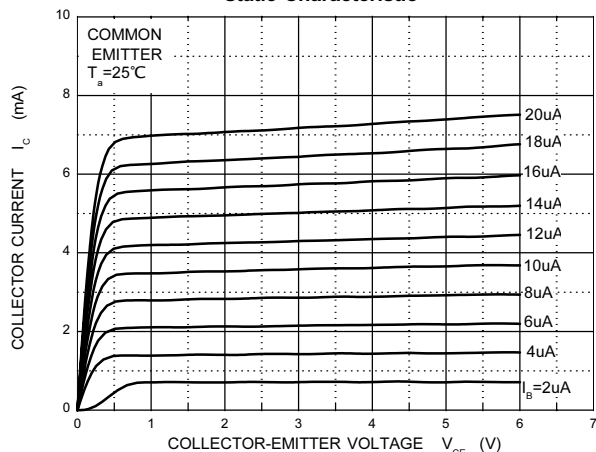
| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | .110   | .120  | 2.80 | 3.04 |      |
| B   | .083   | .104  | 2.10 | 2.64 |      |
| C   | .047   | .055  | 1.20 | 1.40 |      |
| D   | .035   | .041  | .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

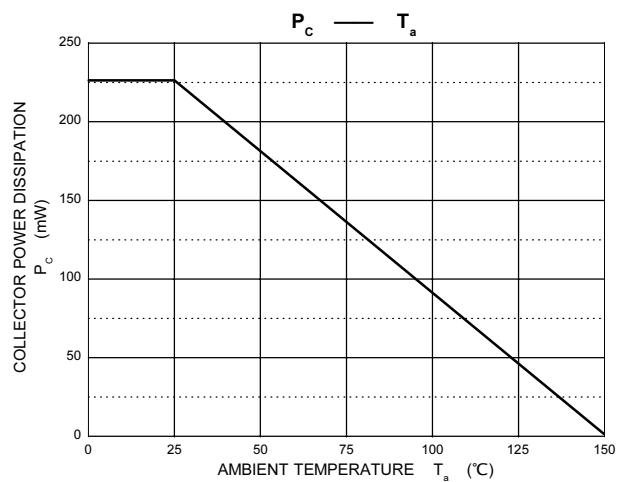
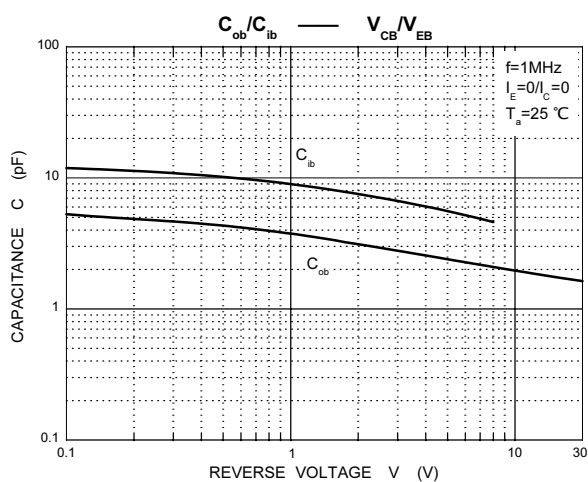


# BC846A thru BC849C

Static Characteristic



## BC846A thru BC849C





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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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