



**Micro Commercial Components** 

Micro Commercial Components 20736 Marilla Street Chatsworth CA 91311

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# **BC847BS**

# **Features**

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information) Ideally Suited for Automatic Insertion
- Ultra-Small Surface Mount Package
- For Switching and AF Amplifier Applications
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Marking:1C

# **Mechanical Data**

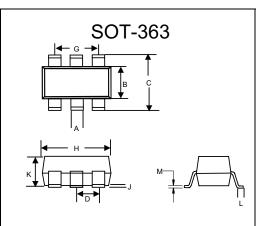
Case: SOT-363, Molded Plastic

Polarity: See Diagram

# Maximum Ratings @ 25% Unless Otherwise Specified

| Symbol                            | Parameter                                       | Value                    | Units |  |  |  |
|-----------------------------------|---|--------------------------|-------|--|--|--|
| OFF CHARACTERISTICS               |   |                          |       |  |  |  |
| V <sub>(BR)CEO</sub>              | Collector-Emitter Breakdown Voltage             | Breakdown Voltage 45 Vdc |       |  |  |  |
| V <sub>(BR)CBO</sub>              | Collector-Base Breakdown Voltage                | 50                       | Vdc   |  |  |  |
| $V_{(BR)EBO}$                     | Emitter-Base Breakdown Voltage                  | 6.0                      | Vdc   |  |  |  |
| Ic                                | Collector Current                               | 100                      | mAdc  |  |  |  |
| I <sub>CM</sub>                   | Peak Collector Current                          | 200                      | mAdc  |  |  |  |
| P <sub>d</sub>                    | Power Dissipation @ T <sub>A</sub> =25°C 300 mW |                          | mW    |  |  |  |
| T <sub>J</sub> , T <sub>STG</sub> | Operating & Storage Temperature                 | -55~+150                 | °C    |  |  |  |

# **Dual NPN Small Signal Transistor** 300mW



| DIMENSIONS |                                  |   |        |        |  |  |
|------------|----------------------------------|---|--------|--------|--|--|
| INCHES     |                                  | MM  |        |        |  |  |
| MIN        | MAX                              | MIN   | MAX    | NOTE   |  |  |
| .006       | .014                             | 0.15  | 0.35   |        |  |  |
| .045       | .053                             | 1.15  | 1.35   |        |  |  |
| .085       | .096                             | 2.15  | 2.45   |        |  |  |
| .02        | 6                                | 0.65N   | ominal |        |  |  |
| .047       | .055                             | 1.20  | 1.40   |        |  |  |
| .071       | .087                             | 1.80  | 2.20   |        |  |  |
|            | .004                             |   | 0.10   |        |  |  |
| .035       | .043                             | 0.90  | 1.10   |        |  |  |
| .010       | .018                             | 0.26  | 0.46   |        |  |  |
| .003       | .006                             | 0.08  | 0.15   |        |  |  |
|            | MIN .006 .045 .085 .02 .047 .071 | NCHES   MIN   MAX   .006   .014   .045   .053   .085   .096   .026   .047   .055   .071   .087     .004   .035   .043   .010   .018 | INCHES | INCHES |  |  |



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

| Symbol               | Parameter                            | Min | Тур | Max        | Units | Test Condition  |
|----------------------|--------------------------------------|-----|-----|------------|-------|---|
| OFF CHARACTERISTICS  |                                      |     |     |            |       |   |
| h <sub>FE</sub>      | DC Current Gain                      | 200 |     | 450        |       | V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA                    |
| $V_{\text{CE(SAT)}}$ | Collector-Emitter Saturation Voltage |     |     | 250<br>650 | mV    | $I_{C}$ =10mA, $I_{B}$ =0.5mA<br>$I_{C}$ =100mA, $I_{B}$ =5.0mA |
| $V_{BE(ON)}$         | Base-Emitter Voltage                 | 580 | 665 | 700        | mV    | $V_{CE}$ =5.0V, $I_{C}$ =2.0mA                                  |
| I <sub>CBO</sub>     | Collector-Cutoff Current             |     |     | 15         | nA    | V <sub>CB</sub> =30V, I <sub>E</sub> =0                         |
| f⊤                   | Gain Bandwidth Product               |     | 200 |            | MHz   | V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA,<br>f=100MHz        |
| Сов                  | Collector-output Capacitance         |     | 2   |            | pF    | V <sub>CB</sub> =10V, f=1.0MHz                                  |

# **BC847BS**

0.01

0.1 0.3

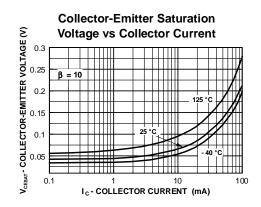


**Typical Pulsed Current Gain** vs Collector Current 

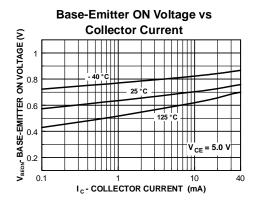
3

Ic - COLLECTOR CURRENT (mA)

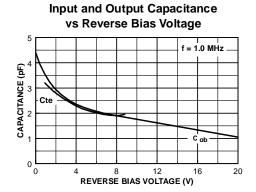
30



**Base-Emitter Saturation** VBESAT - COLLECTOR-EMITTER VOLTAGE (V) **Voltage vs Collector Current** 0.8 0.4 0.2 0.1  $^{\rm 1}$   $^{\rm 10}$  I  $_{\rm c}\text{-}$  COLLECTOR CURRENT (mA)



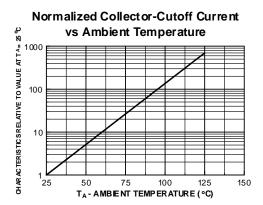
**Collector-Cutoff Current** vs Ambient Temperature I Collector current (n.d.) 50 75 100 125
T<sub>A</sub> - AMBIENT TEMPERATURE (°C)

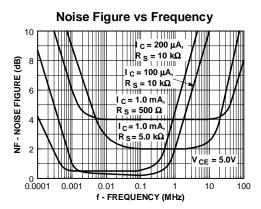


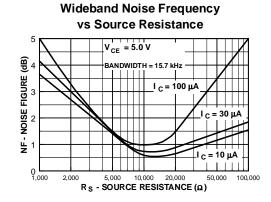


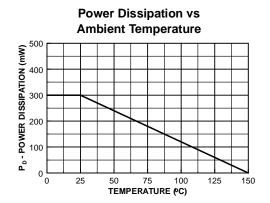
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# Contours of Constant Gain Bandwidth Product (f<sub>T</sub>) 2 10 7 175 MHz 100 MHz











# **Ordering Information:**

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

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