



Micro Commercial Components

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BC847AT, BT, CT

Features

- Epitaxial Die Construction
- Complementary PNP Type Available (BC857AT,BT,CT)
- Ultra-Small Surface Mount Package
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1

NPN
Surface Mount Small
Signal Transistor
150mW

Maximum Data

- Case: SOT-523
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking:BC847AT--1E,BC847BT--1F,BC847CT-1G.

Maximum Ratings @ 25°C Unless Otherwise Specified

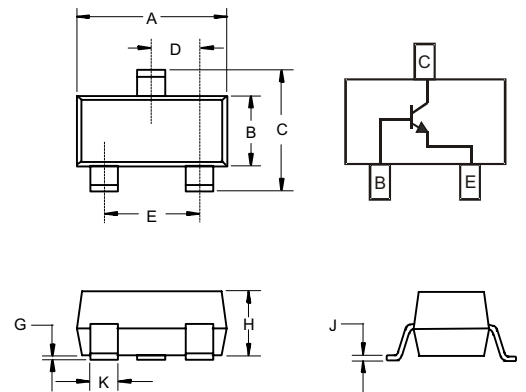
| Symbol | Parameter | Value | Units |
|--------|-----------|-------|-------|
|--------|-----------|-------|-------|

OFF CHARACTERISTICS

| | | | |
|-----------------|---|----------|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | 45 | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | 50 | Vdc |
| $V_{(BR)EBO}$ | Collector-Emitter Breakdown Voltage | 6.0 | Vdc |
| I_C | Collector Current | 100 | mAdc |
| P_d | Power Dissipation (Note 1) | 150 | mW |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient(Note 1) | 833 | °C/W |
| T_J, T_{STG} | Operating & Storage Temperature | -55~+150 | °C |

Note: 1. Device mounted on FR-4 PCB with recommended pad layout

SOT-523



| DIM | INCHES | | MM | | NOTE |
|-----|--------------|------|-------------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .059 | .067 | 1.50 | 1.70 | |
| B | .030 | .033 | 0.75 | 0.85 | |
| C | .057 | .069 | 1.45 | 1.75 | |
| D | .020 Nominal | | 0.50Nominal | | |
| E | .035 | .043 | 0.90 | 1.10 | |
| G | .000 | .004 | .000 | .100 | |
| H | .028 | .031 | .70 | 0.80 | |
| J | .004 | .008 | .100 | .200 | |
| K | .010 | .014 | .25 | .35 | |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units | Test Condition |
|----------------------------|---|------------|------------|------------|-------|---|
| OFF CHARACTERISTICS | | | | | | |
| h _{FE} | DC Current Gain (Note 2) | | | | | V _{CE} =5.0V, I _C =2.0mA |
| | Current Gain A | 110 | --- | 222 | --- | |
| | B | 200 | 290 | 450 | --- | |
| | C | 420 | 520 | 800 | --- | |
| V _{CE(SAT)} | Collector-Emitter Saturation Voltage (Note 2) | --- | --- | 250 600 | mV | I _C =10mA, I _B =0.5mA I _C =100mA, I _B =5.0mA |
| V _{BE(SAT)} | Base-Emitter Saturation Voltage (Note 2) | --- | 700 900 | --- | mV | I _C =10mA, I _B =0.5mA |
| V _{BE(ON)} | Base-Emitter Voltage (Note 2) | 580 --- | 660 --- | 700 770 | mV | V _{CE} =5.0V, I _C =2.0mA V _{CE} =5.0V, I _C =10mA |
| I _{CB0} | Collector-Cutoff Current (Note 2) | --- | --- | 15 | nA | V _{CB} =30V, I _E =0 V _{CB} =30V, T _J =125°C |
| I _{CO} | | --- | --- | 5.0 | μA | |
| f _T | Gain Bandwidth Product | 100 | --- | --- | MHz | V _{CE} =5.0V, I _C =10mA, f=100MHz |
| C _{CBO} | Collector-Base Capacitance | --- | --- | 4.5 | pF | V _{CB} =10V, f=1.0MHz |
| NF | Noise Figure | BC847BT | --- | --- | 10 | V _{CE} =5V, R _S =2.0Kohm, f=1.0MHz, BW=200HZ |
| | | BC847CT | --- | --- | 4.0 | |

Note: 2. Short duration pulse test used to minimize self-heating effect.



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Ordering Information

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

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