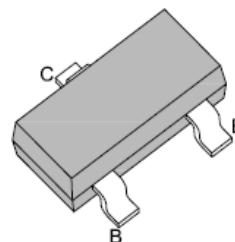


SMD General Purpose Transistor (NPN)

Features

- NPN Silicon Epitaxial Planar Transistor for Switching and Amplifier Applications



Mechanical Data

| | |
|-------------------|---|
| Case: | SOT-23, Plastic Package |
| Terminals: | Solderable per MIL-STD-202G, Method 208 |
| Weight: | 0.008 gram |

SOT-23



Marking Information

| | BC846A | BC846B | BC847A | BC847B | BC847C | BC848A | BC848B | BC848C |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Marking Code | 1A | 1B | 1E | 1F | 1G | 1J | 1K | 1L |

Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

| Symbol | Description | BC846 | BC847 | BC848 | Unit | Conditions |
|------------------------|---------------------------|-------------|-------|-------|------|------------|
| V_{CB0} | Collector-Base Voltage | 80 | 50 | 30 | V | |
| V_{CEO} | Collector-Emitter Voltage | 65 | 45 | 30 | V | |
| V_{EB0} | Emitter-Base Voltage | 6 | 6 | 5 | V | |
| I_c | Collector Current | 100 | | | mA | |
| P_{tot} | Power Dissipation | 350 | | | mW | Note 1 |
| T_J | Junction Temperature | 150 | | | °C | |
| T_{STG} | Storage Temperature Range | -55 to +150 | | | °C | |

Note: 1. Package mounted on 99.5% Alumina 10 x 8 x 0.6mm.

SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

| Symbol | Description | Min. | Typ. | Max. | Unit | Conditions |
|-----------------|--------------------------------------|-----------------------|------|------|------|--|
| ICBO | Collector-Emitter Cut-off Current | - | - | 15 | nA | $V_{CB}=30V, I_E=0$ |
| hFE | D.C. Current Gain | BC846/7/8, Suffix 'A' | - | 90 | - | $V_{CE}=5V, I_C=10\mu A$ |
| | | BC846/7/8, Suffix 'B' | - | 150 | - | |
| | | BC847/8, Suffix 'C' | - | 270 | - | |
| | | BC846/7/8, Suffix 'A' | 110 | 180 | 220 | $V_{CE}=5V, I_C=2mA$ |
| | | BC846/7/8, Suffix 'B' | 200 | 290 | 450 | |
| | | BC847/8, Suffix 'C' | 420 | 520 | 800 | |
| VCE(sat) | Collector-Emitter Saturation Voltage | - | 0.09 | 0.25 | V | $I_C=10mA, I_B=0.5mA$ |
| | | - | 0.2 | 0.6 | | $I_C=100mA, I_B=5mA$ |
| VBE(sat) | Base-Emitter Saturation Voltage | - | 0.7 | - | V | $I_C=10mA, I_B=0.5mA$ |
| | | - | 0.9 | - | | $I_C=100mA, I_B=5mA$ |
| VBE(on) | Base-Emitter On Voltage | 0.58 | 0.66 | 0.7 | V | $V_{CE}=5V, I_C=2mA$ |
| | | - | - | 0.75 | | $V_{CE}=5V, I_C=10mA$ |
| fT | Current Gain-Bandwidth Product | - | 300 | - | MHz | $V_{CE}=5V, I_C=10mA, f=100MHz$ |
| Cob | Collector Output Capacitance | - | 2.5 | 4.5 | pF | $V_{CB}=10V, I_E=0, f=1MHz$ |
| NF | Noise Figure | - | 1.0 | 10 | dB | $V_{CE}=5V, I_C=0.2mA, R_G=2K\Omega, f=1KHz$ |

SMD General Purpose Transistor (NPN)

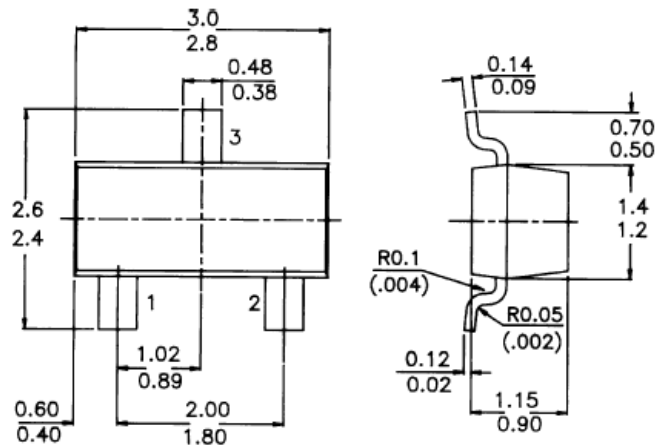
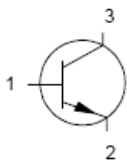
BC846/BC847/BC848

Dimensions in mm

SOT-23

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



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