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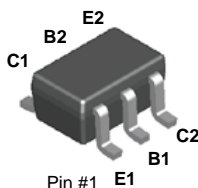
BC847BS

NPN Multi-chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 200 mA.
Sourced from Process 07.

Dual NPN Signal Transister

SC70-6
Mark: .1F



NOTE: The pinouts are symmetrical; pin 1 and pin 4 are interchangeable. Units inside the carrier can be of either orientation and will not affect the functionality of the device.

Absolute Maximum Ratings * $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{CES} | Collector-Base Voltage | 50 | V |
| V_{CEO} | Collector-Emitter Voltage | 45 | V |
| V_{EBO} | Emitter-Base Voltage | 6.0 | V |
| I_C | Collector Current (DC) | 100 | mA |
| T_J, T_{STG} | Junction Temperature and Storage Temperature | -55 ~ +150 | $^\circ\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics * $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Characteristic | Max | Units |
|-----------------|---|-----|----------------------------|
| P_D | Total Device Dissipation | 210 | mW |
| | Derate above 25°C | 1.6 | $\text{mW}/^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 625 | $^\circ\text{C}/\text{W}$ |

*Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06".

Electrical Characteristics

* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | MIN | MAX | Units |
|--------|-----------|----------------|-----|-----|-------|
|--------|-----------|----------------|-----|-----|-------|

Off Characteristics

| | | | | | |
|---------------|-------------------------------------|---|-----|-----------|---------------------|
| $V_{(BR)CBO}$ | Collector-Emitter Breakdown Voltage | $I_C = 10\ \mu\text{A}, I_E = 0$ | 50 | | V |
| $V_{(BR)CES}$ | Collector-Base Breakdown Voltage | $I_C = 10\ \mu\text{A}, I_E = 0$ | 50 | | V |
| $V_{(BR)CEO}$ | Collector-Base Breakdown Voltage | $I_C = 10\ \text{mA}, I_B = 0$ | 45 | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E = 10\ \mu\text{A}, I_C = 0$ | 6.0 | | V |
| I_{CBO} | Collector-Cutoff Current | $V_{CB} = 30\ \text{V}, I_E = 0$ $V_{CB} = 30\ \text{V}, I_E = 0, T_A = 150^\circ\text{C}$ | | 15 5.0 | nA μA |

On Characteristics

| | | | | | |
|---------------|--|---|------|--------------|--------|
| h_{FE} | DC Current Gain | $I_C = 2.0\ \text{mA}, V_{CE} = 5.0\ \text{V}$ | 200 | 450 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage * | $I_C = 10\ \text{mA}, I_B = 0.5\ \text{mA}$ $I_C = 100\ \text{mA}, I_B = 5.0\ \text{mA}$ | | 0.25 0.65 | V V |
| $V_{BE(on)}$ | Emitter-Base Breakdown Voltage * | $I_C = 2.0\ \text{mA}, V_{CE} = 5.0\ \text{V}$ $I_C = 10\ \text{mA}, V_{CE} = 5.0\ \text{V}$ | 0.58 | 0.7 0.77 | V V |

* Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2\%$

NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.



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|--------------------------|------------------------|---|
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