

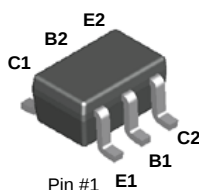
BC847BS

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 Transistor

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	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	625	$^\circ\text{C/W}$

*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
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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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