

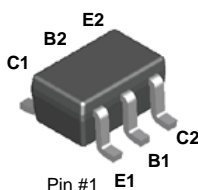
# BC847BS

## 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 $25^\circ\text{C}$	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
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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 $\mu\text{A}$

### 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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