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FAIRCHILD SEMICONDUCTOR®

June 2007

BC847BS

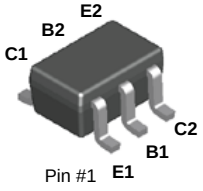
NPN Multi-chip General Purpose Amplifier

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°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	°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°C unless otherwise noted

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

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

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Electrical Characteristics

* T_a = 25°C unless otherwise noted

Symbol	Parameter	Test Condition	MIN	MAX	Units
Off Characteristics					
$V_{(BR)CBO}$	Collector-Emitter Breakdown Voltage	I_C = 10 μA, I_E = 0	50		V
$V_{(BR)CES}$	Collector-Base Breakdown Voltage	I_C = 10 μA, I_E = 0	50		V
$V_{(BR)CEO}$	Collector-Base Breakdown Voltage	I_C = 10 mA, I_B = 0	45		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10 μA, I_C = 0	6.0		V
I_{CBO}	Collector-Cutoff Current	V_{CB} = 30 V, I_E = 0 V_{CB} = 30 V, I_E = 0, T_A = 150°C		15 5.0	nA μA
On Characteristics					
h_{FE}	DC Current Gain	I_C = 2.0 mA, V_{CE} = 5.0 V	200	450	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	I_C = 10 mA, I_B = 0.5 mA I_C = 100 mA, I_B = 5.0 mA		0.25 0.65	V V
$V_{BE(on)}$	Emitter-Base Breakdown Voltage *	I_C = 2.0 mA, V_{CE} = 5.0 V I_C = 10 mA, V_{CE} = 5.0 V	0.58	0.7 0.77	V V

* Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

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

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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