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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

FAIRCHILD SEMICONDUCTOR®

June 2007

BC847BS

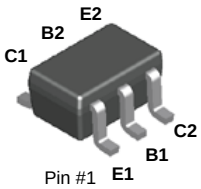
NPN Multi-chip General Purpose Amplifier

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".

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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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

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