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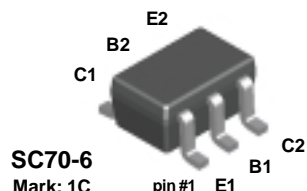
ON Semiconductor®

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BC847S



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.

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.

Absolute Maximum Ratings*

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

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CES}	Collector-Base Voltage	50	V
V_{CBO}	Collector-Base Voltage	50	V
V_{EBO}	Emitter-Base Voltage	6.0	V
I_C	Collector Current - Continuous	200	mA
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +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
		BC847S	
P_D	Total Device Dissipation Derate above 25°C	300 2.4	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	415	$^\circ\text{C/W}$

NPN Multi-Chip General Purpose Amplifier
(continued)

Electrical Characteristics

T_A = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 10 mA, I _B = 0	45			V
V _{(BR)CES}	Collector-Base Breakdown Voltage	I _C = 10 µA, I _E = 0	50			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C = 10 µA, I _E = 0	50			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

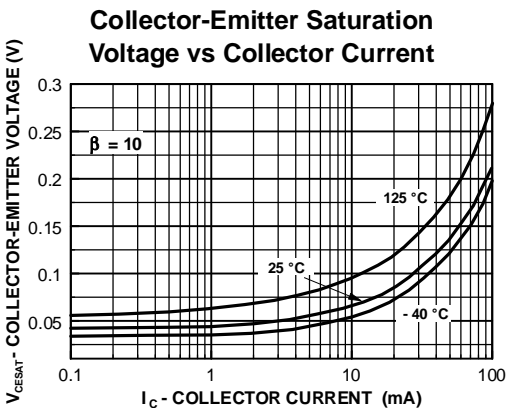
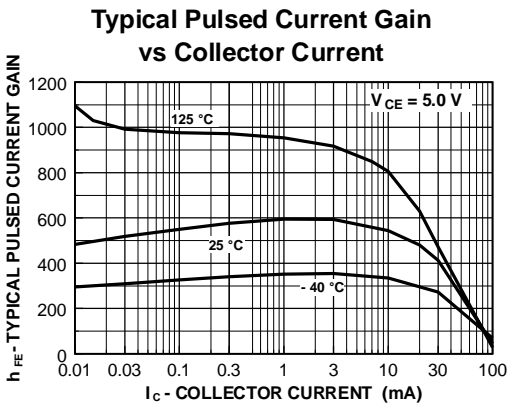
ON CHARACTERISTICS

h _{FE}	DC Current Gain	I _C = 2.0 mA, V _{CE} = 5.0 V	110		630	
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)}	Base-Emitter ON 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

SMALL SIGNAL CHARACTERISTICS

f _T	Current Gain - Bandwidth Product	I _C = 20 mA, V _{CE} = 5.0, f = 100 mHz		200		MHz
C _{obo}	Output Capacitance	V _{CB} = 10 V, f = 1.0 MHz		2.0		pF

Typical Characteristics

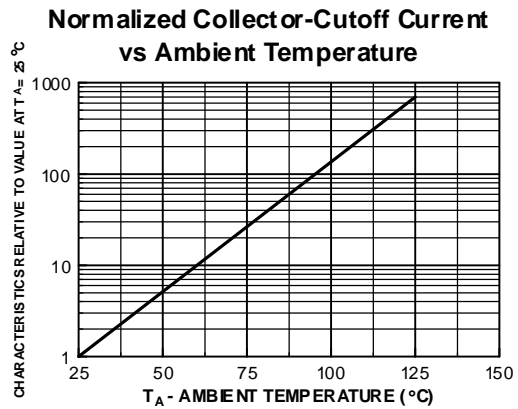
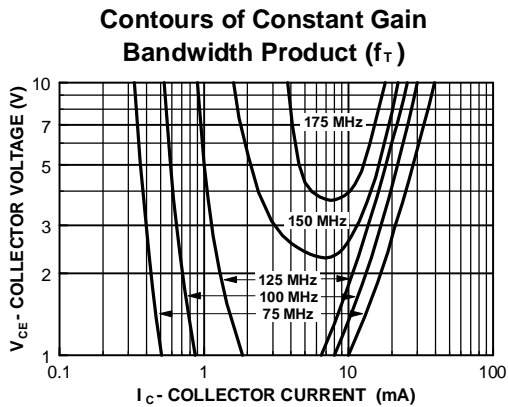
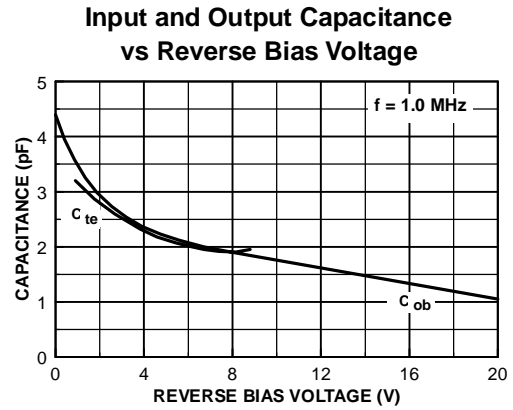
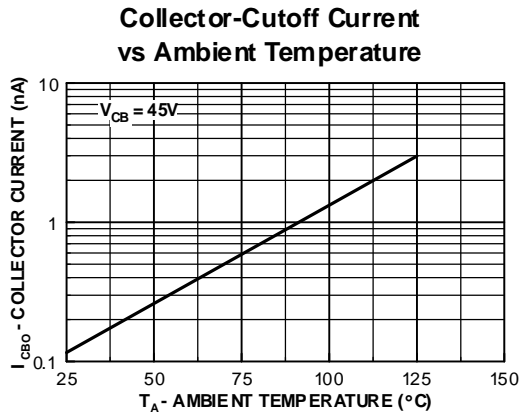
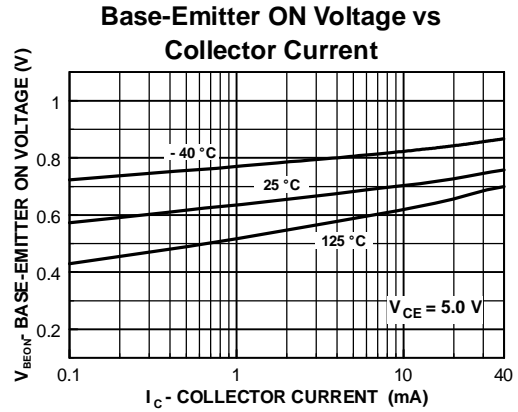
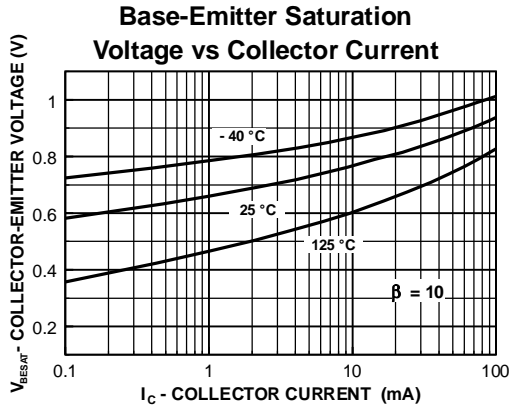


NPN Multi-Chip General Purpose Amplifier

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BC847S

Typical Characteristics

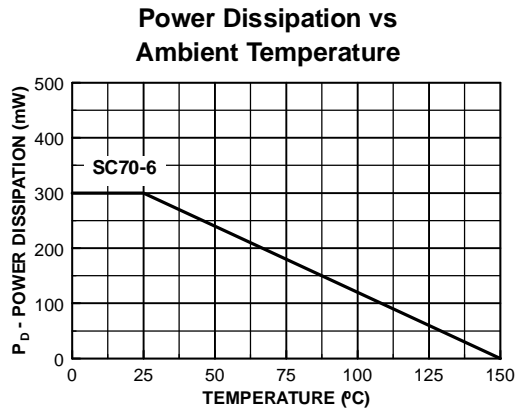
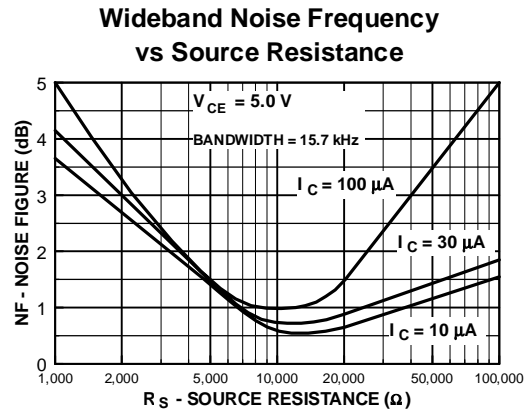
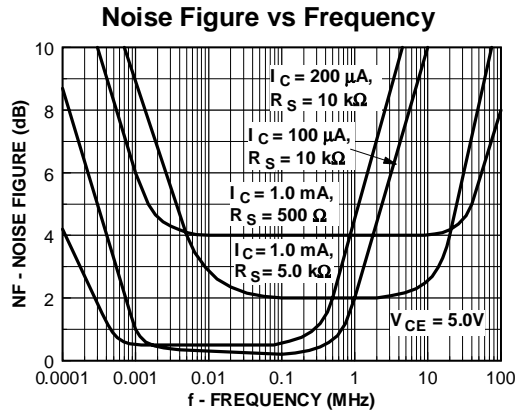


NPN Multi-Chip General Purpose Amplifier

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BC847S

Typical Characteristics (continued)



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