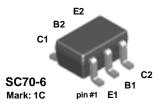


BC847S



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°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{CEO}	Collector-Emitter Voltage	45	V
V _{CES}	Collector-Base Voltage	50	V
V _{CBO}	V _{CBO} Collector-Base Voltage		V
V _{EBO}	Emitter-Base Voltage	6.0	V
Ic	Collector Current - Continuous 200		mA
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

^{*}These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

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	
		BC847S		
P _D	Total Device Dissipation	300	mW	
	Derate above 25°C	2.4	mW/°C	
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	415	°C/W	

NPN Multi-Chip General Purpose Amplifier

(continued)

Electrical Characteristics

 $T_A = 25$ °C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Тур	Max	Units
·						
OFF CHAR	RACTERISTICS					
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	45			V
V _{(BR)CES}	Collector-Base Breakdown Voltage	$I_C = 10 \mu A, I_E = 0$	50			V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	$I_C = 10 \mu A, I_E = 0$	50			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	$I_E = 10 \mu A, I_C = 0$	6.0			V
I _{CBO}	Collector-Cutoff Current	$V_{CB} = 30 \text{ V}, I_{E} = 0$			15	nA
		$V_{CB} = 30 \text{ V}, I_{E} = 0, T_{A} = 150^{\circ}\text{C}$			5.0	μΑ

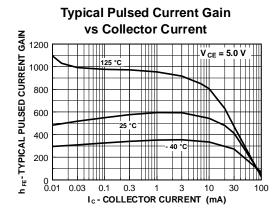
ON CHARACTERISTICS

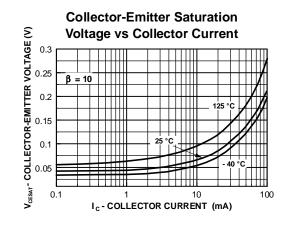
h _{FE}	DC Current Gain	$I_C = 2.0 \text{ mA}, V_{CE} = 5.0 \text{ V}$	110	630	
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 10 mA, I _B = 0.5 mA		0.25	V
		$I_C = 100 \text{ mA}, I_B = 5.0 \text{ mA}$		0.65	V
$V_{BE(on)}$	Base-Emitter ON Voltage	$I_C = 2.0 \text{ mA}, V_{CE} = 5.0 \text{ V}$	0.58	0.7	V
		$I_C = 10 \text{ mA}, V_{CE} = 5.0 \text{ V}$		0.77	V

SMALL SIGNAL CHARACTERISTICS

f⊤	Current Gain - Bandwidth Product	$I_C = 20 \text{ mA}, V_{CE} = 5.0,$ f = 100 mHz	200	MHz
C _{obo}	Output Capacitance	V _{CB} = 10 V, f = 1.0 MHz	2.0	pF

Typical Characteristics

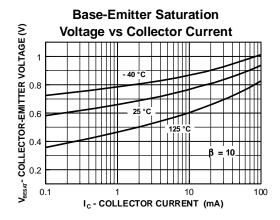


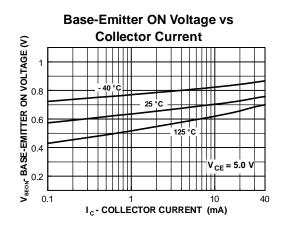


NPN Multi-Chip General Purpose Amplifier

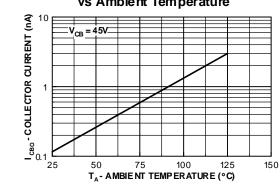
(continued)

Typical Characteristics

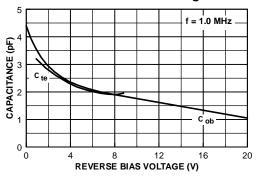




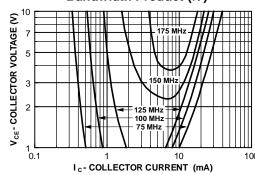
Collector-Cutoff Current vs Ambient Temperature



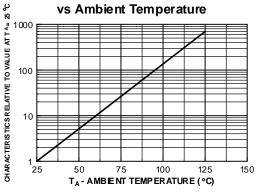
Input and Output Capacitance vs Reverse Bias Voltage



Contours of Constant Gain Bandwidth Product (f_T)



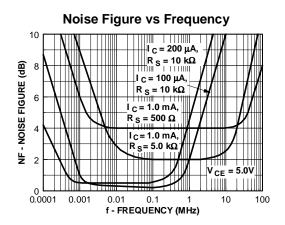
Normalized Collect or-Cutoff Current

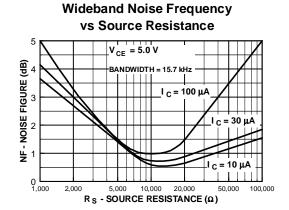


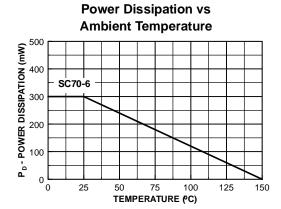
NPN Multi-Chip General Purpose Amplifier

(continued)

Typical Characteristics (continued)







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