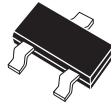


BC846 SERIES  
BC847 SERIES  
BC848 SERIES

SURFACE MOUNT  
NPN SILICON TRANSISTOR



SOT-23 CASE

# Central<sup>TM</sup>

Semiconductor Corp.

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BC846, BC847 and BC848 Series types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose switching and amplifier applications.

**MARKING CODE: PLEASE SEE MARKING CODE TABLE ON FOLLOWING PAGE**

Note: Reverse Lead Codes Available, Add "R" to the end of the Part # and Marking Code.

**MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$ )

	SYMBOL	BC848	BC847	BC846	UNITS
Collector-Base Voltage	$V_{CBO}$	30	50	80	V
Collector-Emitter Voltage	$V_{CEO}$	30	45	65	V
Emitter-Base Voltage	$V_{EBO}$		5.0		V
Collector Current	$I_C$		100		mA
Peak Collector Current	$I_{CM}$		200		mA
Peak Base Current	$I_{BM}$		200		mA
Power Dissipation	PD		350		mW
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		357		$^\circ\text{C/W}$

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

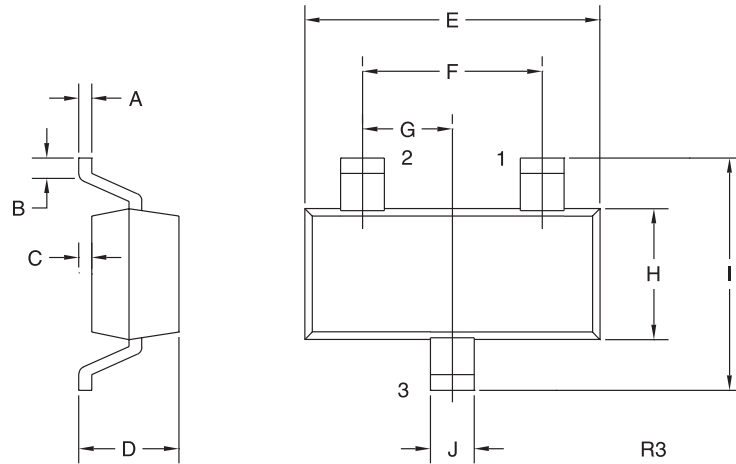
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=30\text{V}$			15	nA
$I_{CBO}$	$V_{CB}=30\text{V}, T_A=150^\circ\text{C}$			5.0	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$			100	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$ (BC848)	30			V
$BV_{CBO}$	$I_C=10\mu\text{A}$ (BC847)	50			V
$BV_{CBO}$	$I_C=10\mu\text{A}$ (BC846)	80			V
$BV_{CEO}$	$I_C=10\text{mA}$ (BC848)	30			V
$BV_{CEO}$	$I_C=10\text{mA}$ (BC847)	45			V
$BV_{CEO}$	$I_C=10\text{mA}$ (BC846)	65			V
$BV_{EBO}$	$I_E=10\mu\text{A}$	5.0			V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$			0.25	V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=5.0\text{mA}$			0.6	V
$V_{BE(ON)}$	$I_C=2.0\text{mA}, V_{CE}=5.0\text{V}$	0.58		0.70	V
$V_{BE(ON)}$	$I_C=10\text{mA}, V_{CE}=5.0\text{V}$			0.77	V
$f_T$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100			MHz
NF	$V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2\text{K}\Omega, f=1\text{KHz}, \text{BW}=200\text{Hz}$			10	dB

		<u>BC846A</u>		<u>BC846B</u>		<u>BC847C</u>	
		<u>BC847A</u>		<u>BC847B</u>		<u>BC848C</u>	
		<u>BC848A</u>		<u>BC848B</u>		<u>BC848C</u>	
		MIN	MAX	MIN	MAX	MIN	MAX
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$	110	220	200	450	420	800

R0 (29-October 2003)

**SURFACE MOUNT  
NPN SILICON TRANSISTOR**

**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

STANDARD	*REVERSE
1) BASE	1) EMITTER
2) EMITTER	2) BASE
3) COLLECTOR	3) COLLECTOR

DEVICE	MARKING CODE
BC846A	1A
BC846B	1B
BC847A	1E
BC847B	1F
BC847C	1G
BC848A	1J
BC848B	1K
BC848C	1L

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

\* Reverse Lead Codes Available, Add "R" to the end of the Part # and Marking Code.