

BC846 SERIES  
BC847 SERIES  
BC848 SERIES

SURFACE MOUNT  
NPN SILICON TRANSISTOR



SOT-23 CASE



www.centrasemi.com

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Peak Collector Current  
Peak Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

SYMBOL	BC848	BC847	BC846	UNITS
$V_{CB0}$	30	50	80	V
$V_{CEO}$	30	45	65	V
$V_{EBO}$		5.0		V
$I_C$		100		mA
$I_{CM}$		200		mA
$I_{BM}$		200		mA
$P_D$		350		mW
$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
$\theta_{JA}$		357		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	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
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=5.0\text{mA}$		0.60	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	$V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2.0\text{K}\Omega, f=1.0\text{KHz}, BW=200\text{Hz}$		10	dB

	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$	BC846A		BC846B		BC847C	
		MIN	MAX	MIN	MAX	MIN	MAX
$h_{FE}$		110	220	200	450	420	800

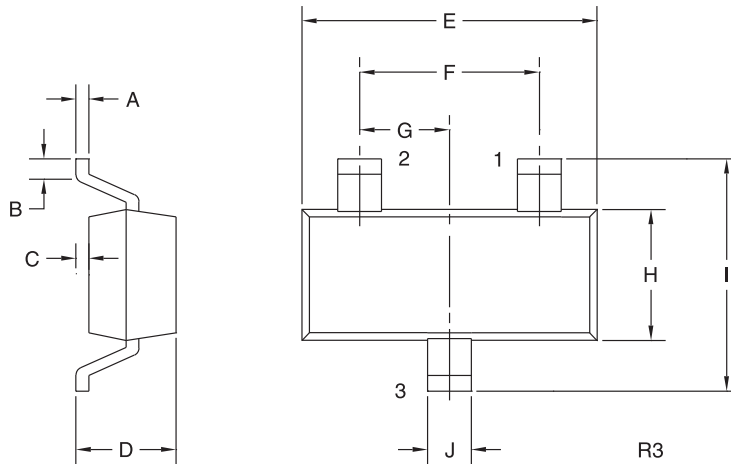
R1 (20-November 2009)

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**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.

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