

BC846 SERIES  
BC847 SERIES  
BC848 SERIES

SURFACE MOUNT SILICON  
NPN TRANSISTORS



SOT-23 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BC846, BC847 and BC848 series devices are silicon NPN 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
$V_{CBO}$	30	50	80	V
$V_{CEO}$	30	45	65	V
$V_{EBO}$	5.0	6.0	6.0	V
$I_C$		100		mA
$I_{CM}$		200		mA
$I_{BM}$		200		mA
$P_D$		330		mW
$T_J, T_{stg}$		-55 to +150		$^\circ\text{C}$
$\theta_{JA}$		375		$^\circ\text{C/W}$

**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
$BV_{EBO}$	$I_E=10\mu\text{A}$ (BC846, BC847)	6.0			V
$BV_{EBO}$	$I_E=10\mu\text{A}$ (BC848)	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
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$		0.70		V
$V_{BE(SAT)}$	$I_C=100\text{mA}, I_B=5.0\text{mA}$		0.90		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
$C_{cb}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			4.5	pF

		<u>BC846A</u>		<u>BC846B</u>		<u>BC847C</u>	
		<u>BC847A</u>	<u>BC848A</u>	<u>BC847B</u>	<u>BC848B</u>	<u>BC848C</u>	
MIN	MAX	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

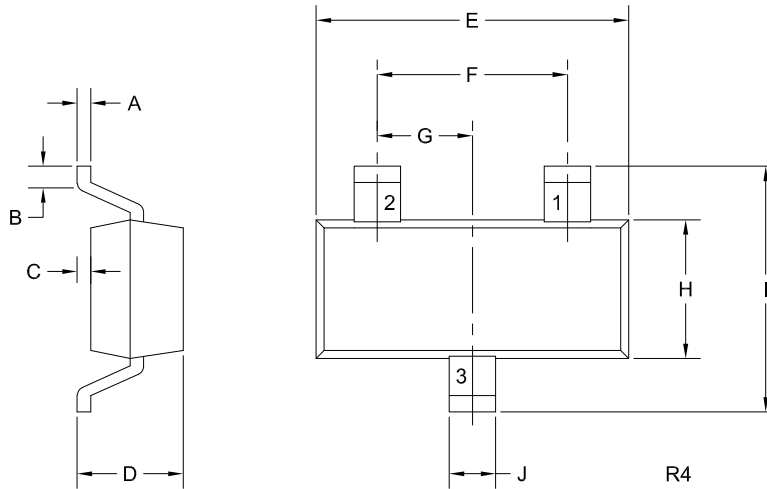
R2 (24-November 2020)

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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	0.044	0.89	1.12
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	0.104	2.10	2.64
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R4)

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

R2 (24-November 2020)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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