

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

	TEST CONDITIONS	BC846A		BC846B		BC847C	
		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

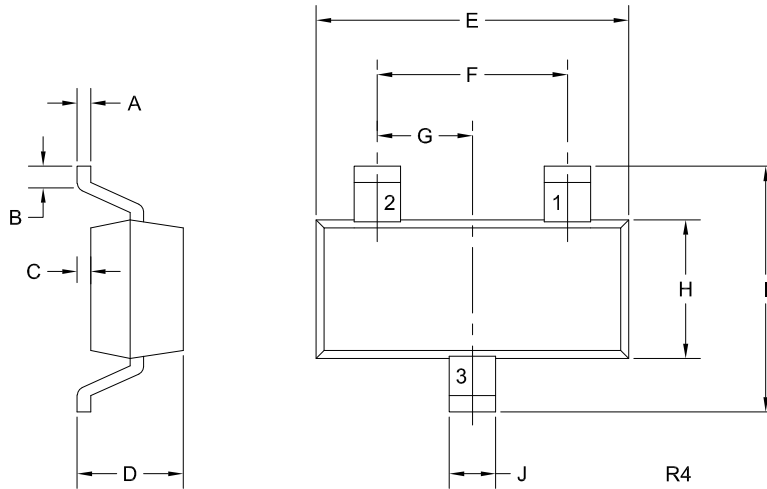
R2 (24-November 2020)

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**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

- |                 |                 |
|-----------------|-----------------|
| <b>STANDARD</b> | <b>*REVERSE</b> |
| 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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