

**BC846 SERIES
BC847 SERIES
BC848 SERIES**

**SURFACE MOUNT SILICON
NPN TRANSISTORS**



SOT-23 CASE



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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_{CB0}	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		$^\circ\text{C}$
θ_{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	μA
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>BC847A</u>		<u>BC847B</u>		<u>BC847C</u>	
		<u>BC848A</u>		<u>BC848B</u>		<u>BC848C</u>	
		MIN	MAX	MIN	MAX	MIN	MAX
h_{FE}	$V_{CE}=5.0V, I_C=2.0mA$	110	220	200	450	420	800

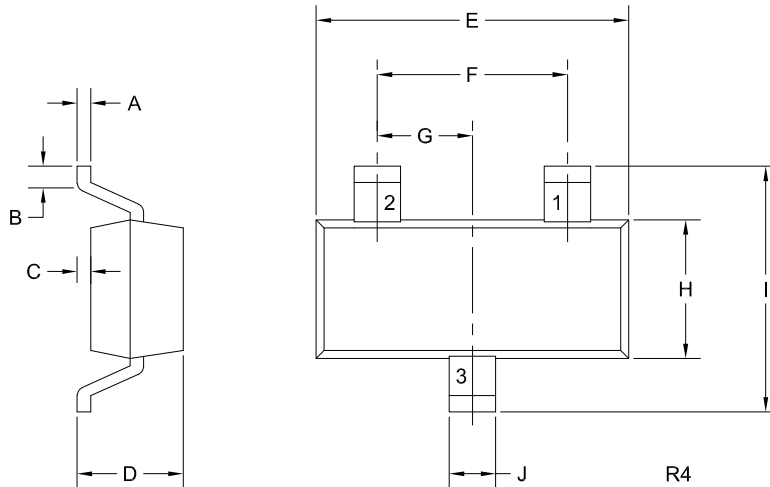
R2 (24-November 2020)

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

STANDARD

- 1) Base
- 2) Emitter
- 3) Collector

***REVERSE**

- 1) Emitter
- 2) Base
- 3) Collector

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

DIMENSIONS				
SYMBOL	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)

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OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

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