

**BC846W SERIES
BC847W SERIES**

**SURFACE MOUNT
NPN SILICON TRANSISTOR**

SUPERmini™



SOT-323 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BC846W and BC847W Series types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a SUPERmini™ 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	BC847W	BC846W	UNITS
V_{CBO}	50	80	V
V_{CEO}	45	65	V
V_{EBO}		5.0	V
I_C		100	mA
I_{CM}		200	mA
I_{BM}		200	mA
P_D		275	mW
T_J, T_{stg}		-65 to +150	$^\circ\text{C}$
Θ_{JA}		455	$^\circ\text{C/W}$

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	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		100	nA
BV_{CBO}	$I_C=10\mu\text{A}$ (BC847W)	50		V
BV_{CBO}	$I_C=10\mu\text{A}$ (BC846W)	80		V
BV_{CEO}	$I_C=10\text{mA}$ (BC847W)	45		V
BV_{CEO}	$I_C=10\text{mA}$ (BC846W)	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
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		3.0	pF
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

		BC846AW		BC846BW		BC847CW	
		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

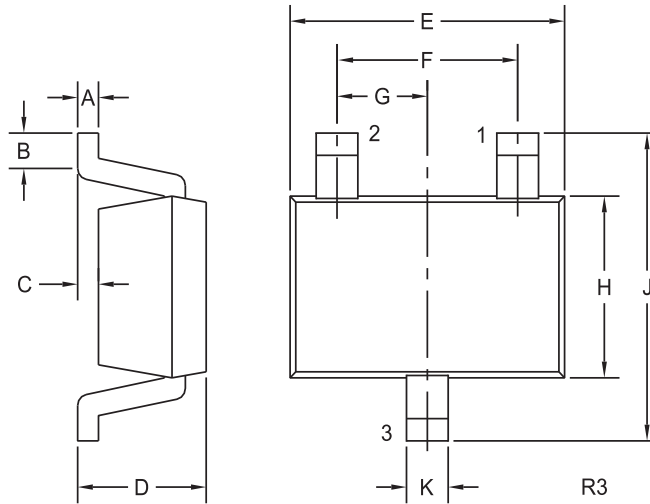
R1 (20-November 2009)

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SOT-323 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

DEVICE	MARKING CODE
BC846AW	1AT
BC846BW	1BT
BC847AW	1ET
BC847BW	1FT
BC847CW	1GT

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

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

R1 (20-November 2009)

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

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- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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- Application notes
- Application and design sample kits
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