

**BC846W SERIES  
BC847W SERIES**

**SURFACE MOUNT  
NPN SILICON TRANSISTOR**

**SUPERmini™**



**SOT-323 CASE**



[www.centralemi.com](http://www.centralemi.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	$^\circ\text{C}$
$\Theta_{JA}$		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	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$		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

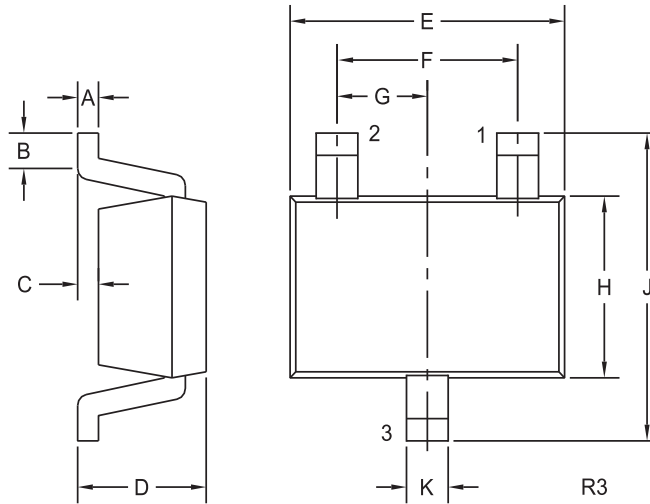
R1 (20-November 2009)

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SOT-323 CASE - MECHANICAL OUTLINE



LEAD CODE:

<b>STANDARD</b>	<b>*REVERSE</b>
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.

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