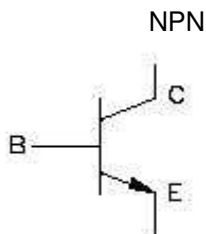
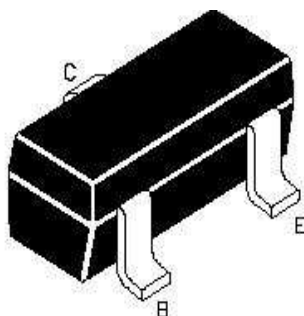


NPN SILICON PLANAR EPITAXIAL TRANSISTORS

BC846W , 847W, 848W

SOT-323

Formed SMD Package



Marking

BC846W =1D

BC846AW =1A

BC846BW =1B

BC847W =1H

BC847AW =1E

BC847BW =1F

BC847CW =1G

BC848W =1M

General Purpose Switching and Amplification.

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	BC846W	BC847W	BC848W	UNITS
Collector Base Voltage	V_{CBO}	80	50	30	V
Collector Emitter Voltage	V_{CEO}	65	45	30	V
Emitter Base Voltage	V_{EBO}	6	6	5	V
Collector Current (DC)	I_C	100			mA
Peak Collector Current	I_{CM}	200			mA
Peak Base Current	I_{BM}	200			mA
Power Dissipation $T_{amb}=25^\circ\text{C}$	$*P_{tot}$	200			mW
Storage Temperature	T_{stg}	- 65 to +150			$^\circ\text{C}$
Junction Temperature	T_j	150			$^\circ\text{C}$
Operating Ambient Temperature	T_{amb}	- 65 to +150			$^\circ\text{C}$

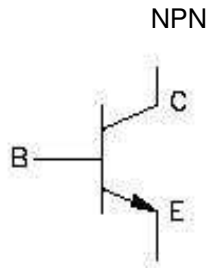
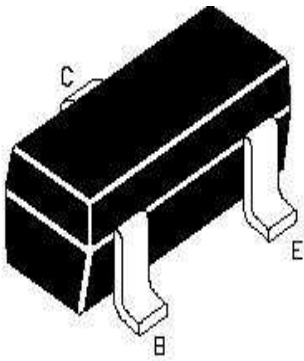
THERMAL RESISTANCE

From junction to ambient	$*R_{th(j-a)}$	625	K/W
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*Transistor mounted on an FR4 printed circuit board

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless specified otherwise)

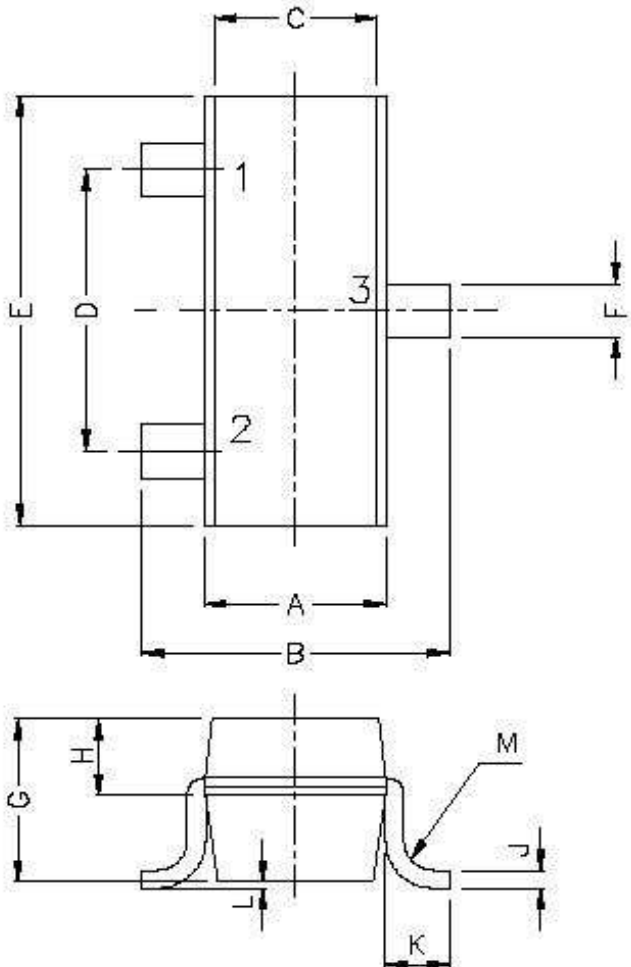
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Cut Off Current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$ $V_{CB}=30\text{V}, I_E=0, T_j=150^\circ\text{C}$			15 5	nA μA
Emitter Cut Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	nA
DC Current Gain	h_{FE}	$I_C=10\mu\text{A}, V_{CE}=5\text{V}$ BC846AW, BC847AW BC846BW, BC847BW, BC848BW BC847CW		90 150 270		

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
DC Current Gain	h_{FE}	$I_C=2\text{mA}$, $V_{CE}=5\text{V}$ BC846W	110		450	
		BC847W,BC848W	110		800	
		BC846AW,BC847AW	110		220	
		BC846BW,BC847BW	200		450	
		BC847CW	520		800	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$			0.25	V
		* $I_C=100\text{mA}$, $I_B=5\text{mA}$			0.60	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$		0.7		V
		* $I_C=100\text{mA}$, $I_B=5\text{mA}$		0.9		V
Base Emitter On Voltage	$V_{BE(on)}$	$I_C=2\text{mA}$, $V_{CE}=5\text{V}$	0.58		0.70	V
		$I_C=10\text{mA}$, $V_{CE}=5\text{V}$			0.77	V
Collector Capacitance	C_c	$I_E=I_C=0$, $V_{CB}=10\text{V}$, $f=1\text{MHz}$			3.0	pF
Transition Frequency	f_T	$I_C=10\text{mA}$, $V_{CE}=5\text{V}$, $f=100\text{MHz}$	100			MHz
Noise Figure	NF	$I_C=0.2\text{mA}$, $V_{CE}=5\text{V}$ $R_s=2\text{k}\Omega$, $f=1\text{KHz}$, $B=200\text{Hz}$			10	dB

**Pulse test $t_p=300\mu\text{s}$, $\delta \leq 0.02$

PACKAGE SOT-323



DIM	MIN	MAX
A	1.25	1.35
B	2.02	2.18
C	1.20	1.30
D	1.25	1.35
E	2.10	2.20
F	0.27	0.33
G	0.95	1.00
H	0.35	4.00
J	0.09	0.15
K	0.25	0.33
L	0.00	0.10
M	R 0.15	R 0.20

DIMENSIONS ARE IN mm

PIN CONFIGURATION

1. BASE
2. EMITTER
3. COLLECTOR

PACKING :— 3K/REEL

Component Disposal Instructions

- 1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.**
- 2. In Europe, please dispose as per EU Directive 2002/ 96/ EC on Waste Electrical and Electronic Equipment (WEEE).**

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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