

**NPN Silicon Epitaxial Planar Transistor****BC846W/BC847W/BC848W****FEATURES**

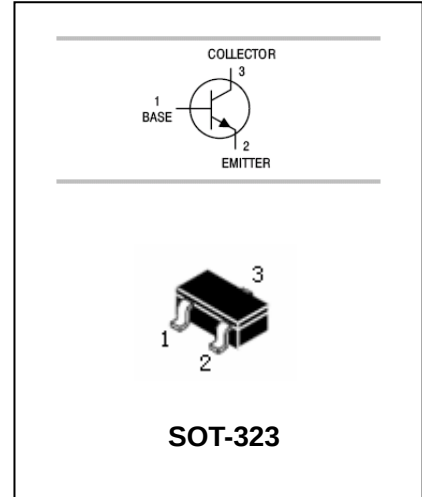
- Low Current.
- Low voltage.
- Power dissipation.( $P_C=200\text{mW}$ )

**APPLICATIONS**

- General purpose switching and amplification application.

**ORDERING INFORMATION**

| Type No. | Marking     | Package Code |
|----------|-------------|--------------|
| BC846W   | 1A/1B       | SOT-323      |
| BC847W   | 1E/1F/1G    | SOT-323      |
| BC848W   | 1Js/1Ks/1Ls | SOT-323      |

**MAXIMUM RATING @  $T_a=25^\circ\text{C}$  unless otherwise specified**

| Symbol         | Parameter                        | Value              | Units            |
|----------------|----------------------------------|--------------------|------------------|
| $V_{CBO}$      | Collector-Base Voltage           | BC846W<br>80       | V                |
|                |                                  | BC847W<br>50       |                  |
|                |                                  | BC848W<br>30       |                  |
| $V_{CEO}$      | Collector-Emitter Voltage        | BC846W<br>65       | V                |
|                |                                  | BC847W<br>45       |                  |
|                |                                  | BC848W<br>30       |                  |
| $V_{EBO}$      | Emitter-Base Voltage             | BC846W,BC847W<br>6 | V                |
|                |                                  | BC848W<br>5        |                  |
| $I_C$          | Collector Current -Continuous    | 100                | mA               |
| $P_C$          | Collector Dissipation            | 200                | mW               |
| $T_j, T_{stg}$ | Junction and Storage Temperature | -65~150            | $^\circ\text{C}$ |

**NPN Silicon Epitaxial Planar Transistor****BC846W/BC847W/BC848W****ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

| Parameter                            | Symbol        | Test conditions                                                                               | MIN               | TYP               | MAX               | UNIT |
|--------------------------------------|---------------|-----------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$<br>BC846W<br>BC847W<br>BC848W                                           | 80<br>50<br>30    |                   |                   | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA, I_B=0$<br>BC846W<br>BC847W<br>BC848W                                                | 65<br>45<br>30    |                   |                   | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$<br>BC846W<br>BC847W<br>BC848W                                           | 6<br>6<br>5       |                   |                   | V    |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=30V, I_E=0$                                                                           |                   |                   | 15                | nA   |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=5V, I_C=0$                                                                            |                   |                   | 100               | nA   |
| DC current gain                      | $h_{FE}$      | $V_{CE}=5V, I_C=10\mu A$<br>BC846AW, BC847AW<br>BC846BW, BC847BW, BC848BW<br>BC847CW, BC848CW | 90<br>150<br>270  |                   |                   |      |
|                                      |               | $V_{CE}=2V, I_C=100mA$<br>BC846AW, BC847AW<br>BC846BW, BC847BW, BC848BW<br>BC847CW, BC848CW   | 110<br>200<br>420 | 180<br>290<br>520 | 220<br>450<br>800 |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=0.5mA$                                                                         |                   | 90                | 250               | mV   |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=10mA, I_B=0.5mA$                                                                         |                   | 700               |                   | V    |
| Transition frequency                 | $f_T$         | $V_{CE}=5V, I_C=10mA, f=100MHz$                                                               | 100               |                   |                   | MHz  |
| Collector capacitance                | $C_C$         | $V_{CB}=10V, I_E=0, f=1MHz$                                                                   |                   |                   | 3                 | pF   |

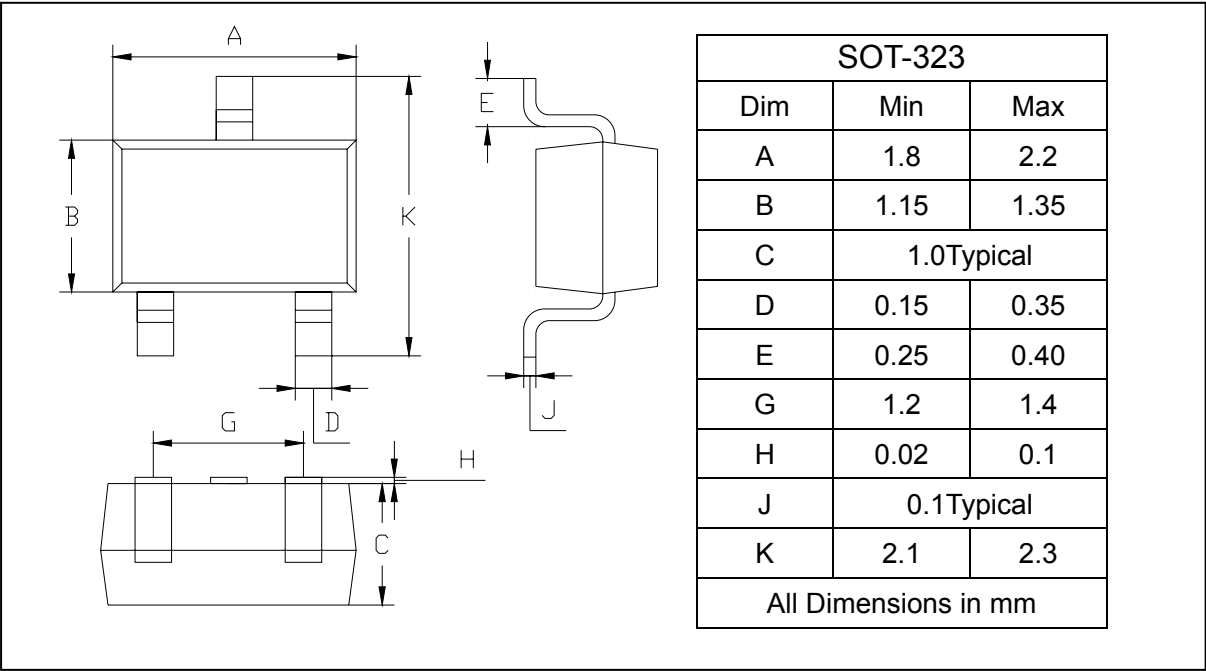
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**BC846W/BC847W/BC848W**

PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



PACKAGE INFORMATION

|                      |         |                |
|----------------------|---------|----------------|
| Device               | Package | Shipping       |
| BC846W/BC847W/BC848W | SOT-323 | 3000/Tape&Reel |