

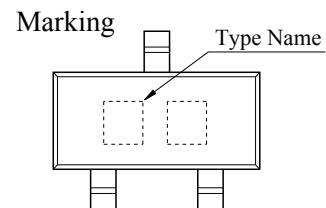
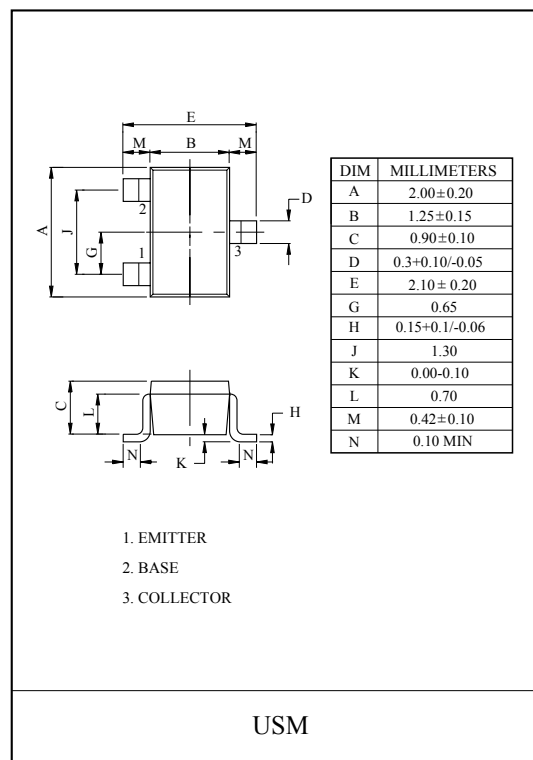
GENERAL PURPOSE APPLICATION.  
SWITCHING APPLICATION .

#### FEATURES

- High Voltage : BC846W  $V_{CEO}=65V$ .
- For Complementary With PNP Type BC856W/857W/858W.

#### MAXIMUM RATING (Ta=25℃)

| CHARACTERISTIC              | SYMBOL    | RATING    | UNIT |
|-----------------------------|-----------|-----------|------|
| Collector-Base Voltage      | BC846W    | 80        | V    |
|                             | BC847W    | 50        |      |
|                             | BC848W    | 30        |      |
| Collector-Emitter Voltage   | BC846W    | 65        | V    |
|                             | BC847W    | 45        |      |
|                             | BC848W    | 30        |      |
| Emitter-Base Voltage        | BC846W    | 6         | V    |
|                             | BC847W    | 6         |      |
|                             | BC848W    | 5         |      |
| Collector Current           | $I_C$     | 100       | mA   |
| Emitter Current             | $I_E$     | -100      | mA   |
| Collector Power Dissipation | $P_C$     | 100       | mW   |
| Junction Temperature        | $T_j$     | 150       | ℃    |
| Storage Temperature Range   | $T_{stg}$ | -55 ~ 150 | ℃    |



#### MARK SPEC

| TYPE | BC846W-A | BC846W-B | BC847W-A | BC847W-B | BC847W-C | BC848W-A | BC848W-B | BC848W-C |
|------|----------|----------|----------|----------|----------|----------|----------|----------|
| MARK | 1A       | 1B       | 1E       | 1F       | 1G       | 1J       | 1K       | 1L       |

# BC846W/7W/8W

## ELECTRICAL CHARACTERISTICS (Ta=25℃)

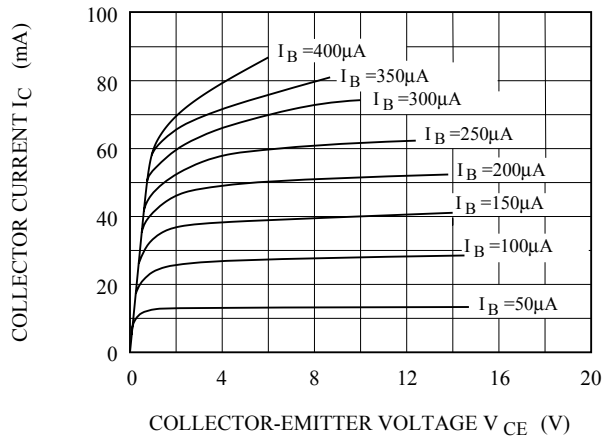
| CHARACTERISTIC                       |        | SYMBOL          | TEST CONDITION                                    | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|--------|-----------------|---------------------------------------------------|------|------|------|------|
| Collector Cut-off Current            |        | $I_{CBO}$       | $V_{CB}=30V, I_E=0$                               | -    | -    | 15   | nA   |
| DC Current Gain (Note)               | BC846W | $h_{FE}$        | $V_{CE}=5V, I_C=2mA$                              | 110  | -    | 450  |      |
|                                      | BC847W |                 |                                                   | 110  | -    | 800  |      |
|                                      | BC848W |                 |                                                   | 110  | -    | 800  |      |
| Collector-Emitter Saturation Voltage |        | $V_{CE(sat)} 1$ | $I_C=10mA, I_B=0.5mA$                             | -    | 0.09 | 0.25 | V    |
|                                      |        | $V_{CE(sat)} 2$ | $I_C=100mA, I_B=5mA$                              | -    | 0.2  | 0.6  |      |
| Base-Emitter Saturation Voltage      |        | $V_{BE(sat)} 1$ | $I_C=10mA, I_B=0.5mA$                             | -    | 0.7  | -    | V    |
|                                      |        | $V_{BE(sat)} 2$ | $I_C=100mA, I_B=5mA$                              | -    | 0.9  | -    |      |
| Base-Emitter Voltage                 |        | $V_{BE(ON)} 1$  | $V_{CE}=5V, I_C=2mA$                              | 0.58 | -    | 0.7  | V    |
|                                      |        | $V_{BE(ON)} 2$  | $V_{CE}=5V, I_C=10mA$                             | -    | -    | 0.75 | V    |
| Transition Frequency                 |        | $f_T$           | $V_{CE}=5V, I_C=10mA, f=100MHz$                   | -    | 300  | -    | MHz  |
| Collector Output Capacitance         |        | $C_{ob}$        | $V_{CB}=10V, I_E=0, f=1MHz$                       | -    | 2.5  | 4.5  | pF   |
| Noise Figure                         |        | NF              | $V_{CE}=6V, I_C=0.1mA$<br>$R_g=10k\Omega, f=1kHz$ | -    | 1.0  | 10   | dB   |

NOTE : According to the value of  $h_{FE}$  the BC846W, BC847W, BC848W are classified as follows.

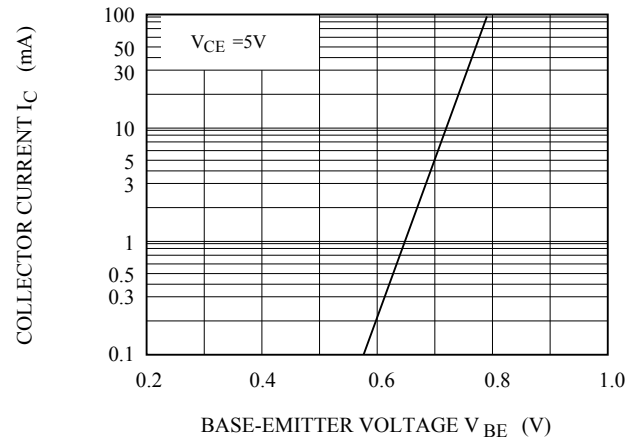
| CLASSIFICATION |        | A         | B         | C         |
|----------------|--------|-----------|-----------|-----------|
| $h_{FE}$       | BC846W | 110 ~ 220 | 200 ~ 450 | -         |
|                | BC847W | 110 ~ 220 | 200 ~ 450 | 420 ~ 800 |
|                | BC848W | 110 ~ 220 | 200 ~ 450 | 420 ~ 800 |

# BC846W/7W/8W

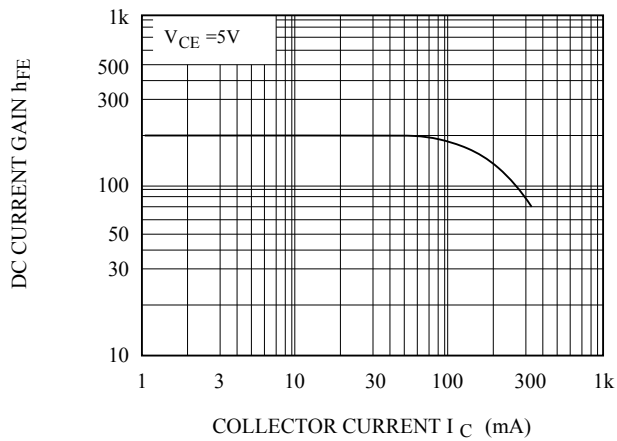
$I_C - V_{CE}$



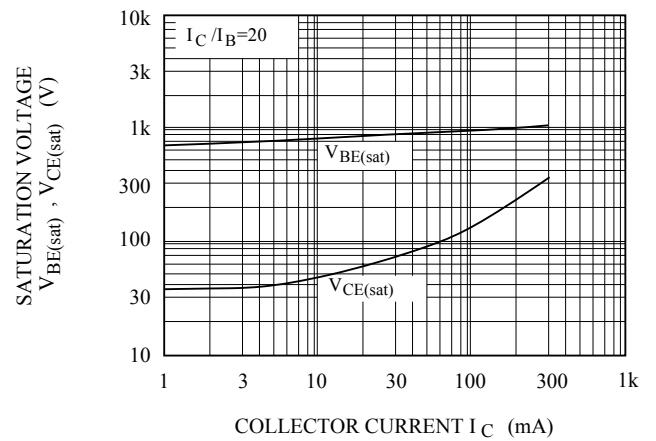
$I_C - V_{BE}$



$h_{FE} - I_C$



$V_{BE(sat)}, V_{CE(sat)} - I_C$



$C_{ob} - V_{CB}$

