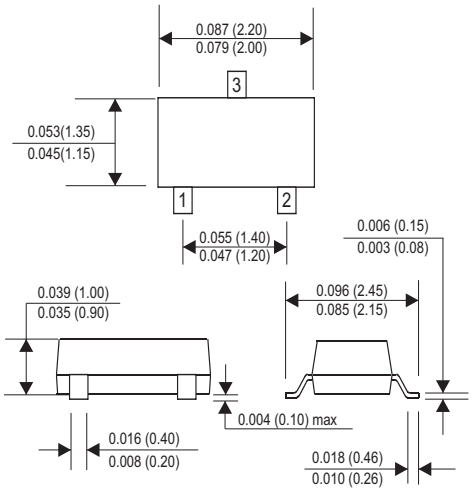
# BC856AW-G Thru. BC858CW-G (PNP)

## RoHS Device

## Features

-Ideally suited for automatic insertion
-For Switching and AF Amplifier Applications
-Power dissipation
PCM: 0.15W (@TA=25°C)
-Collector current
ICM: -0.1A
-Collector-base voltage
VCBO: BC856W= -80V
BC857W= -50V
BC858W= -30V
-Operating and storage junction temperature range: TJ, TSTG= -65 to +150°C

**SOT-323**



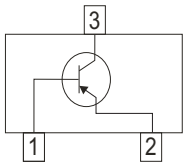

Dimensions in inches and (millimeter)

## Mechanical data

-Case: SOT-323, molded plastic.
-Terminals: solderable per MIL-STD-750, method 2026.

## Circuit diagram

-1.BASE
-2.EMITTER
-3.COLLECTOR




## Maximum Ratings (at Ta=25°C unless otherwise noted)

| Parameter | | Symbol | Value | Units |
|---|---|---|---|---|
| Collector-Base Voltage | BC856W-G<br>BC857W-G<br>BC858W-G | VCBO | -80<br>-50<br>-30 | V |
| Collector-Emitter Voltage | BC856W-G<br>BC857W-G<br>BC858W-G | VCEO | -65<br>-45<br>-30 | V |
| Emitter-Base Voltage | | VEBO | -5 | V |
| Collector Current -Continuous | | IC | -0.1 | A |
| Collector Power Dissipation | | PC | 150 | mW |
| Junction Temperature | | TJ | 150 | °C |
| Storage Temperature Range | | TSTG | -65 to +150 | °C |

## Electrical Characteristics ($T_A$= 25 °C unless otherwise specified)

| Parameter | | Symbol | Test Conditions | MIN | MAX | Units |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | BC856W-G<br>BC857W-G<br>BC858W-G | $V_{CBO}$ | $I_C$ = -10μA , $I_E$=0 | -80<br>-50<br>-30 | | V |
| Collector-Emitter Breakdown Voltage | BC856W-G<br>BC857W-G<br>BC858W-G | $V_{CEO}$ | $I_C$ = -10mA , $I_B$=0 | -65<br>-45<br>-30 | | V |
| Emitter-Base Breakdown Voltage | | $V_{EBO}$ | $I_E$ = -1μA , $I_C$=0 | -5 | | V |
| Collector Cut-off Current | | $I_{CBO}$ | $V_{CB}$= -30V , $I_E$=0 | | -15 | nA |
| DC Current Gain | BC856AW,857AW,858AW<br>BC856BW,857BW,858BW<br>BC857CW,858CW | $h_{FE}$ | $V_{CE}$ = -5V , $I_C$= -2mA | 125<br>220<br>420 | 250<br>475<br>800 | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C$ =-100mA , $I_B$=-5mA | | -0.65 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | $I_C$ =-100mA , $I_B$=-5mA | | -1.1 | V |
| Transition Frequency | | $f_T$ | $V_{CE}$=-5V , $I_C$=-10mA<br>f=100MHz | 100 | | MHz |
| Collector Capacitance | | $C_{ob}$ | $V_{CB}$ =-10V , f=1MHz | | 4.5 | pF |

## Electrical Characteristic Curves (BC856AW-G Thru. BC858CW-G)

Fig.1- DC current gain as a function fo collector current ;typical values.

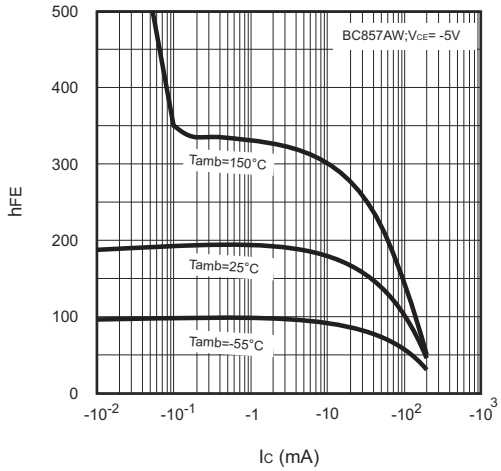



Fig.2- Base-Emitter Voltage as a function of collector current;typical values

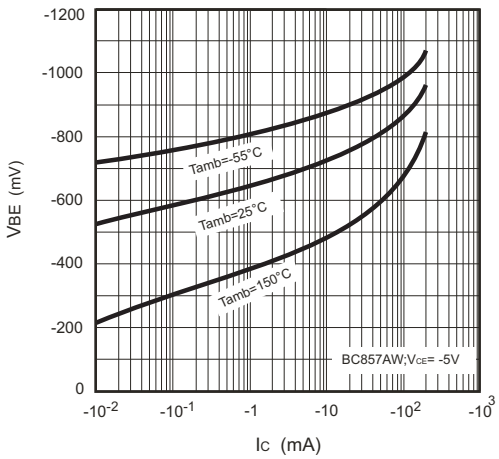



Fig.3- Collector-emitter saturation voltage as a function of collector current; typical values.

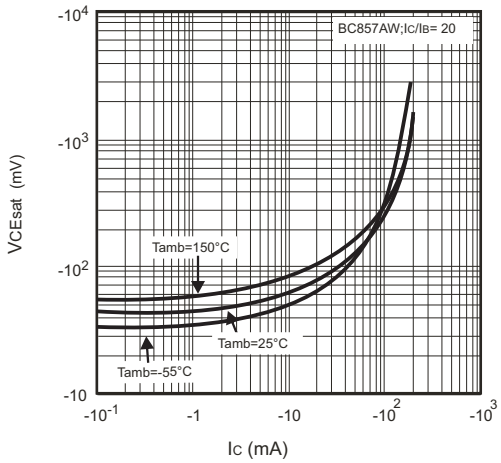



Fig.4- Base-emitter saturation voltage as a function of collector current; typical values

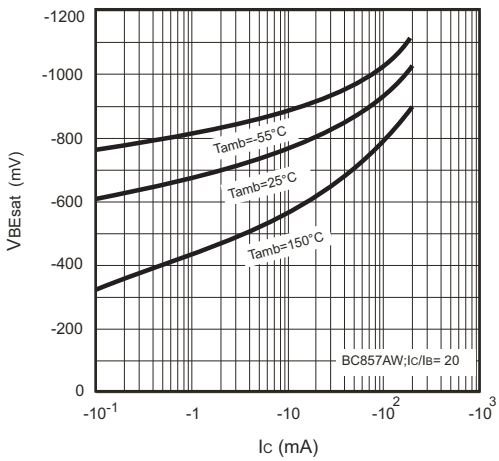



Fig.5- DC current gain as a function fo collector current ;typical values.

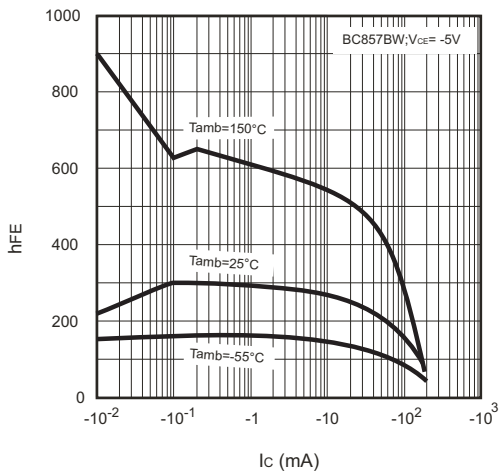
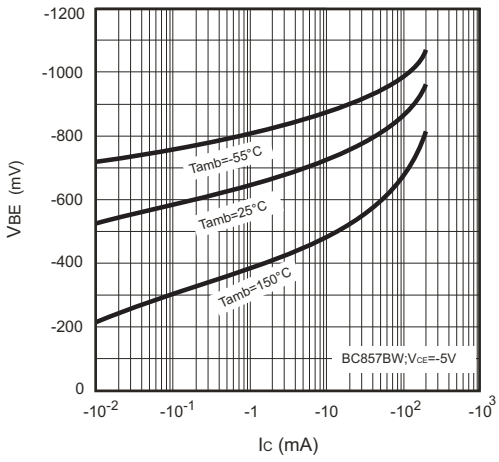



Fig.6- Base-emitter voltage as a function of collector current;typical values.



## Electrical Characteristic Curves (BC856AW-G Thru. BC858CW-G)

Fig.7- Collector-ernitter saturation voltage as a function of collector current typical values.

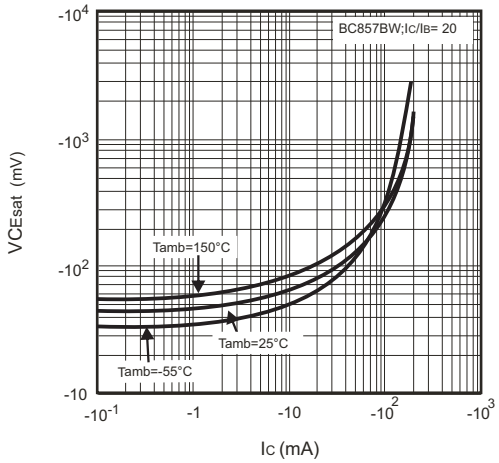



Fig.8- Base-Emitter Saturation Voltage as a function of collector current;typical values

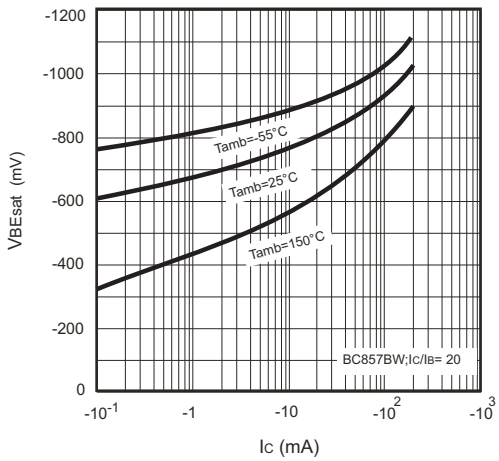



Fig.9- DC current gain as a function fo collector current ;typical values.

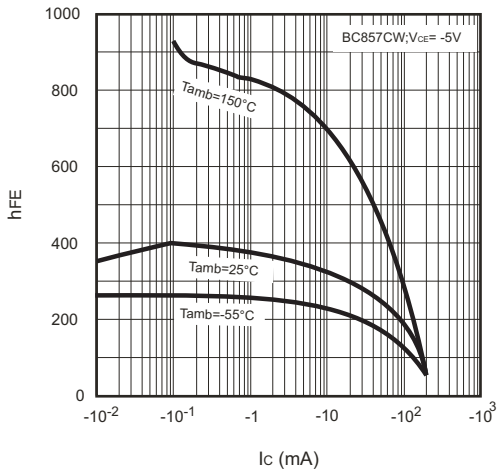



Fig.10- Base-Emitter Voltage as a function of collector current;typical values

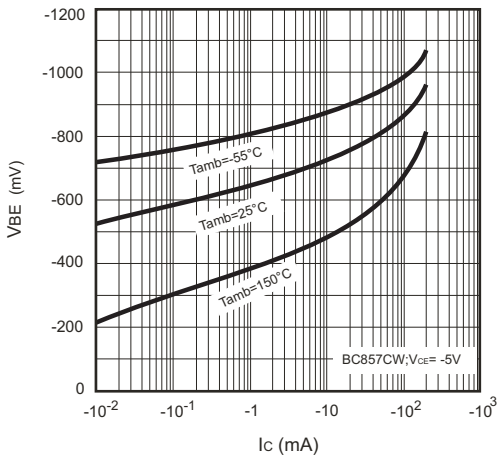



Fig.11- Collector-ernitter saturation voltage as a function of collector current; typical values.

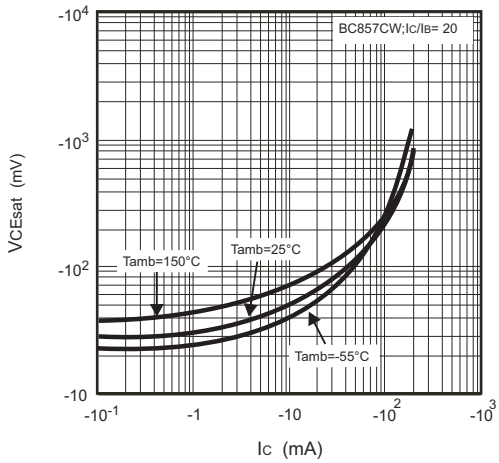
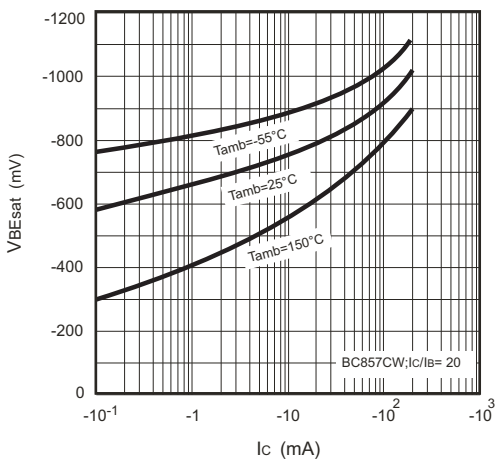
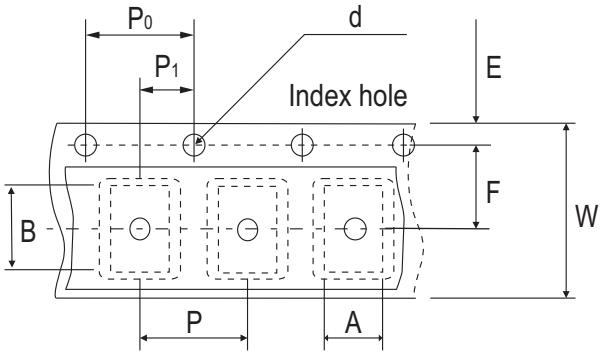
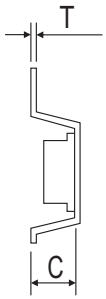


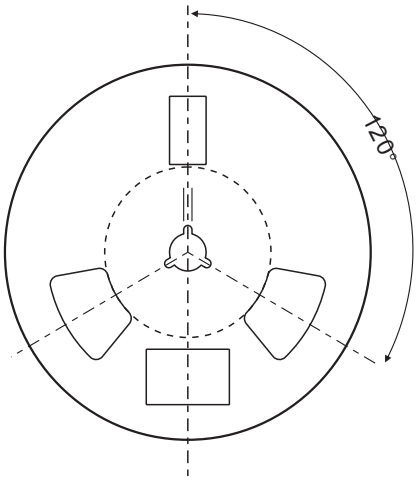

Fig.12- Base-Emitter Saturation Voltage as a function of collector current;typical values

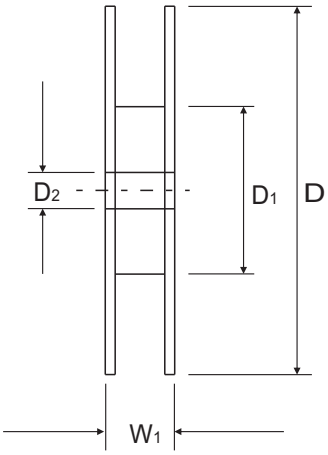


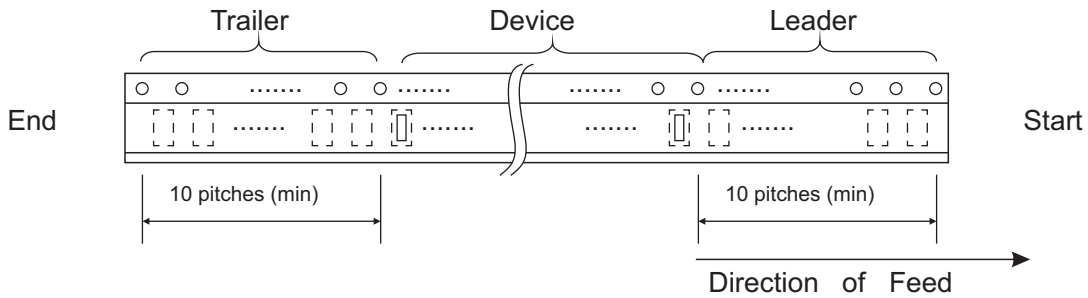
# Reel Taping Specification



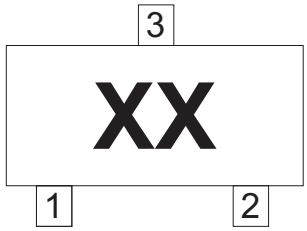




| | SYMBOL | A | B | C | d | D | D1 | D2 |
|---|---|---|---|---|---|---|---|---|
| SOT-323 | (mm) | 2.25 ± 0.10 | 2.55 ± 0.10 | 1.19 ± 0.10 | 1.55 + 0.10 | 178 ± 1.00 | 54.40 ± 0.40 | 13.0 ± 0.20 |
| | (inch) | 0.089 ± 0.004 | 0.100 ± 0.004 | 0.047 ± 0.004 | 0.061 + 0.004 | 7.008 ± 0.039 | 2.142 ± 0.016 | 0.512 ± 0.008 |

| | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|---|---|---|---|---|---|---|---|---|
| SOT-323 | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 8.00 + 0.30 / - 0.10 | 9.50 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138± 0.002 | 0.158 ± 0.004 | 0.158 ± 0.004 | 0.079 ± 0.004 | 0.315 + 0.012 / - 0.004 | 0.374 ± 0.039 |

## Marking Code

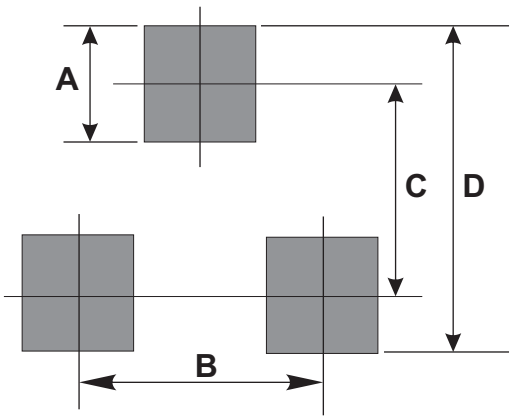
| Part Number | Marking Code |
|---|---|
| BC856AW-G | 3A |
| BC857AW-G | 3E |
| BC858AW-G | 3J |
| BC856BW-G | 3B |
| BC857BW-G | 3F |
| BC858BW-G | 3K |
| BC857CW-G | 3G |
| BC858CW-G | 3L |




**xx = Product type marking code**

## Suggested PAD Layout

| SIZE | SOT-323 | |
|---|---|---|
| | (mm) | (inch) |
| A | 0.80 | 0.031 |
| B | 1.30 | 0.051 |
| C | 1.94 | 0.076 |
| D | 2.74 | 0.108 |




## Standard Packaging

| Case Type | REEL PACK | |
|---|---|---|
| | REEL ( pcs ) | Reel Size (inch) |
| SOT-323 | 3,000 | 7 |