# BC817W/BC818W

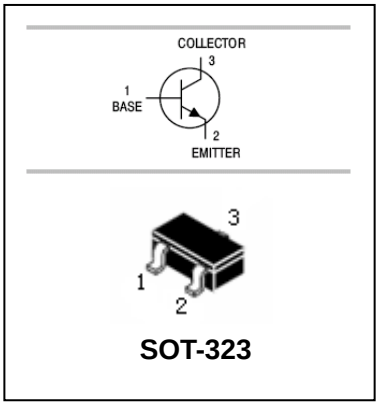
**SOT-323 Bipolar Transistor(NPN)**

## FEATURES

- High collector current.
- High current gain.
- Low collector-emitter saturation voltage.
- Complementary types:BC807W,BC808W.

## APPLICATIONS

- General purpose switching and amplification application.




**SOT-323**

## ORDERING INFORMATION

| Type No. | Package Code |
|---|---|
| BC817-16W | SOT-323 |
| BC817-25W | SOT-323 |
| BC817-40W | SOT-323 |
| BC818-16W | SOT-323 |
| BC818-25W | SOT-323 |
| BC818-40W | SOT-323 |

## MAXIMUM RATING @ Ta=25℃ unless otherwise specified

| Symbol | Parameter | | Value | Units |
|---|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | BC817W<br>BC818W | 50<br>30 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | BC817W<br>BC818W | 45<br>25 | V |
| $V_{EBO}$ | Emitter-Base Voltage | | 5 | V |
| $I_C$ | Collector Current -Continuous | | 500 | mA |
| $I_{CM}$ | Peak Collecter Current | | 1 | A |
| $I_B$ | Base Current | | 100 | mA |
| $I_{BM}$ | Peak Base Current | | 200 | mA |
| $P_{tot}$ | Total Power Dissipation | | 250 | mW |
| $T_j$,$T_{stg}$ | Junction and Storage Temperature | | -65 to +150 | ℃ |

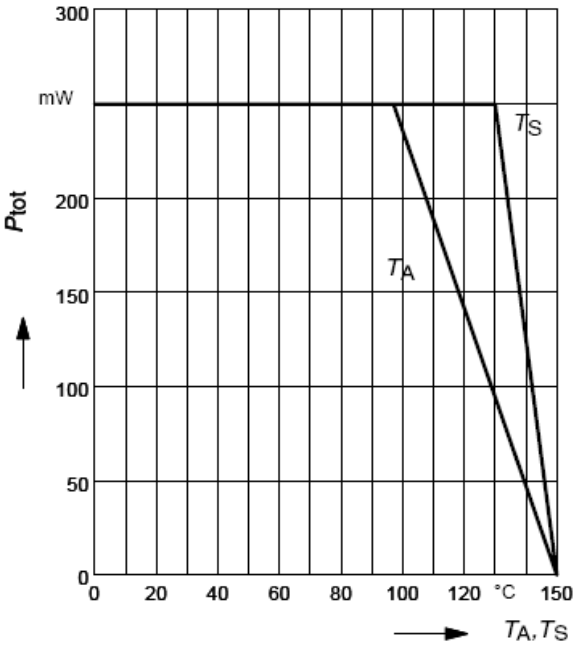
## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage<br>BC817W<br>BC818W | $V_{(BR)CBO}$ | $I_C$=10uA,$I_B$=0 | 50<br>30 | | | V |
| Collector-emitter breakdown voltage BC817W<br>BC818W | $V_{(BR)CEO}$ | $I_C$=10mA,$I_B$=0 | 45<br>25 | | | V |
| Emitter-base breakdown voltage<br>BC817W<br>BC818W | $V_{(BR)EBO}$ | $I_E$=10uA,$I_C$=0 | 5 | | | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=25V,$I_E$=0<br>$V_{CB}$=25V,$I_E$=0,$T_j$=150℃ | | | 100<br>50 | nA<br>μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=5V,$I_C$=0 | | | 100 | nA |
| DC current gain | $h_{FE}$ | $V_{CE}$=1V,$I_C$=100mA<br>16W<br>25W<br>40W | <br>100<br>160<br>250 | | <br>250<br>400<br>600 | |
| | | $V_{CE}$=1V,$I_C$=300mA<br>16W<br>25W<br>40W | <br>60<br>100<br>170 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=500mA, $I_B$= 50mA | | | 0.7 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=500mA, $I_B$= 50mA | | | 1.2 | V |
| Transition frequency | $f_T$ | $V_{CE}$=5V,$I_C$=50mA,<br>f=100MHz | | 170 | | MHz |
| Collector-base capacitance | $C_{Cb}$ | $V_{CB}$=10V,$I_E$=0,f=1MHz | | 6 | | pF |

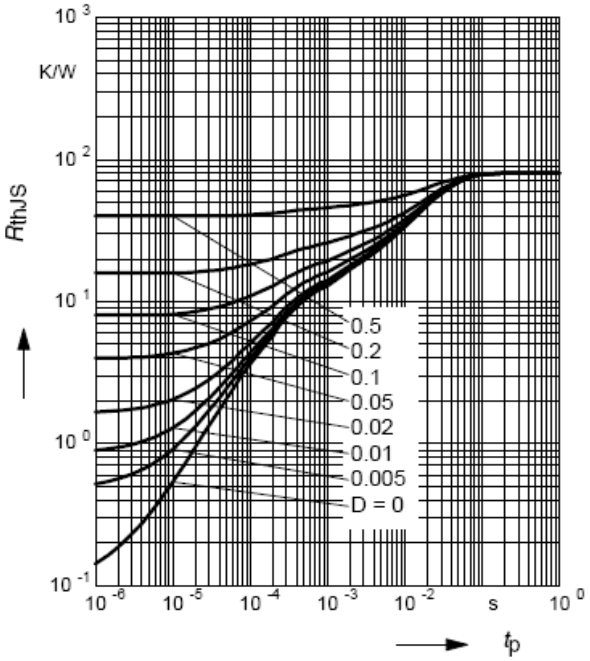
## YPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

**Total power dissipation** $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy

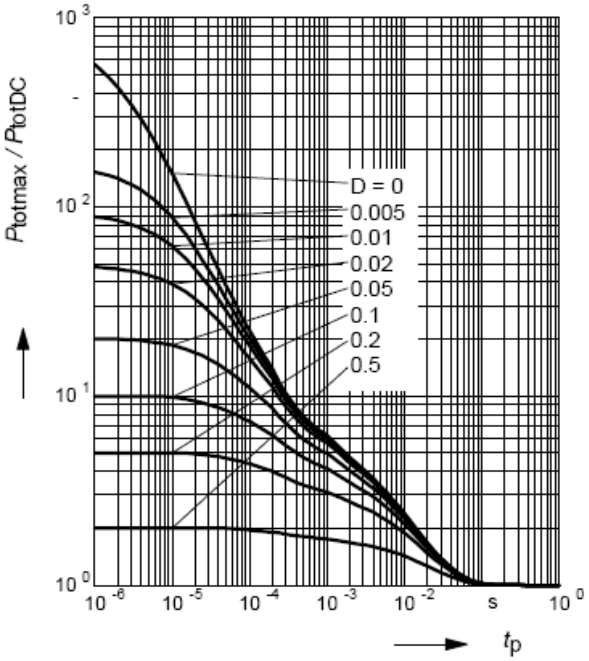



**Permissible Pulse Load** $R_{thJS} = f(t_p)$



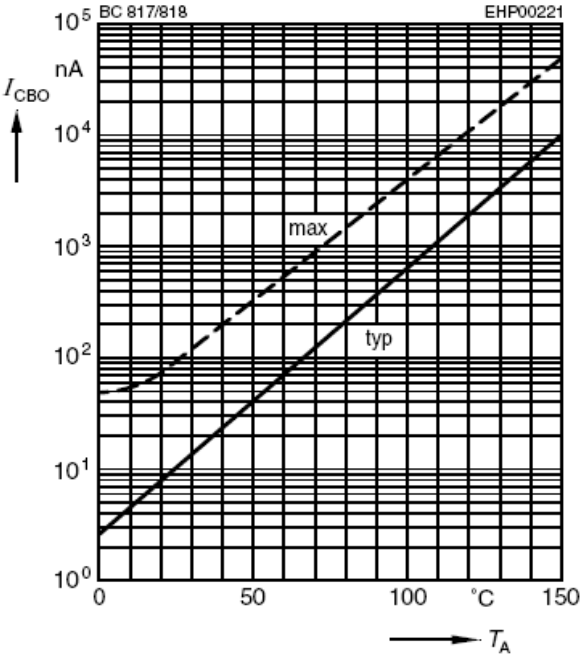

**Permissible Pulse Load**

$P_{totmax} / P_{totDC} = f(t_p)$



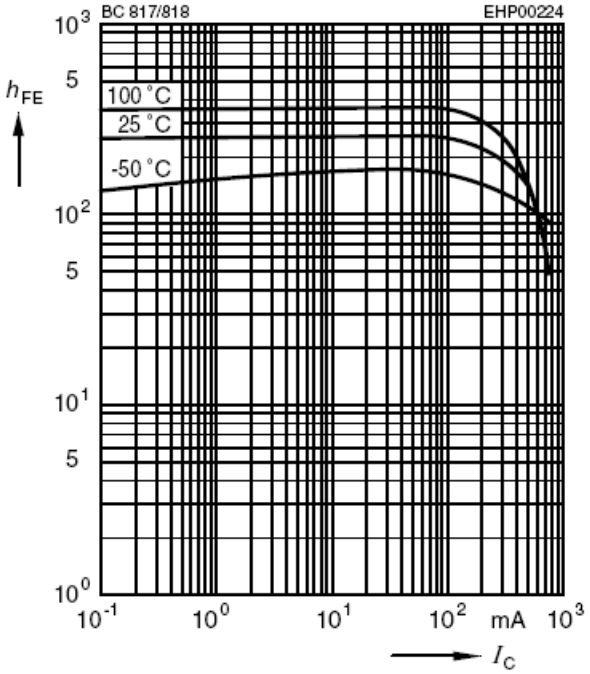

**Collector cutoff current** $I_{CBO} = f(T_A)$

$V_{CBO}$ = 25V



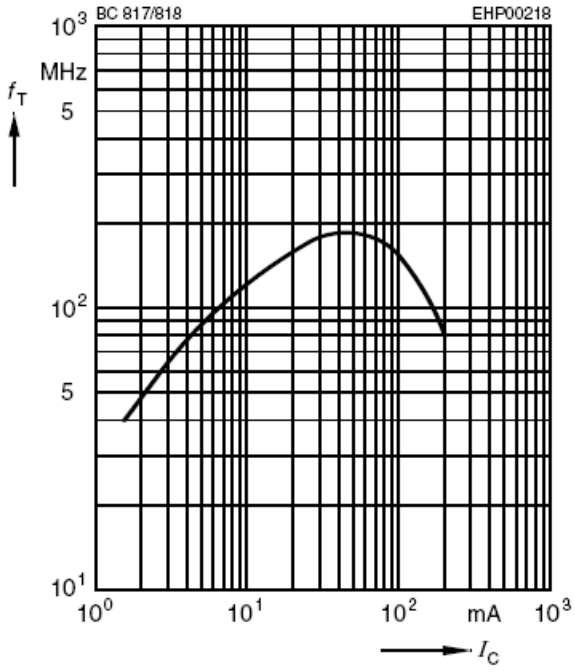
**DC current gain $h_{FE} = f(I_C)$**

$V_{CE}$ = 1V



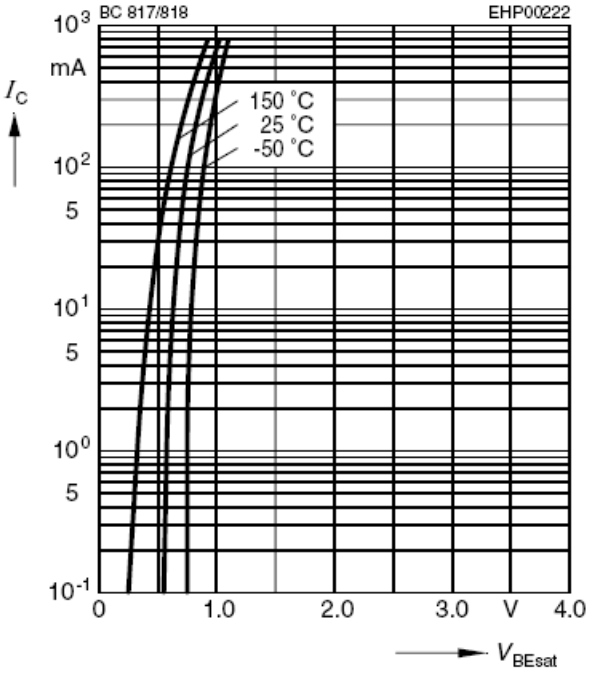

**Transition frequency $f_T = f(I_C)$**

$V_{CE}$ = 5V



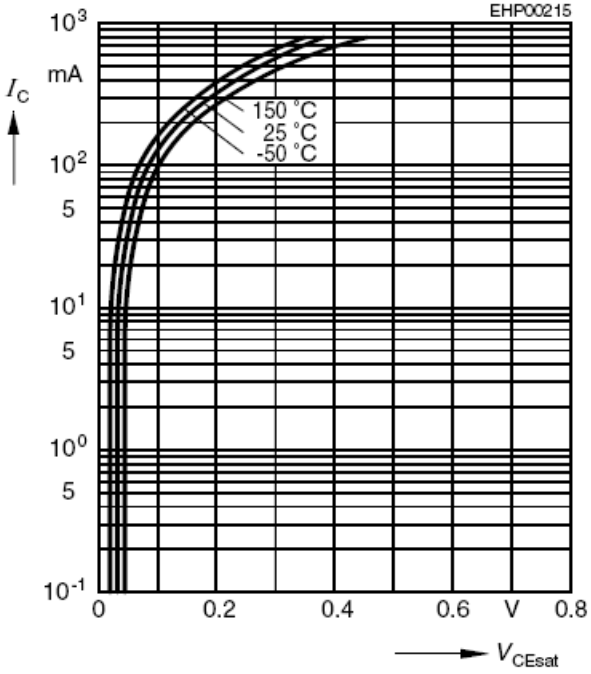

**Base-emitter saturation voltage**

$I_C = f(V_{BEsat})$, $h_{FE}$ = 10




**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat})$, $h_{FE}$ = 10



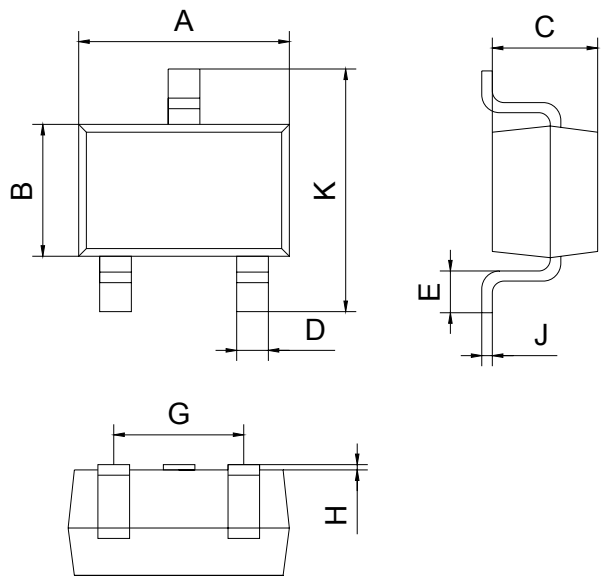
# BC817W/BC818W

**SOT-323 Bipolar Transistor(NPN)**

## PACKAGE OUTLINE

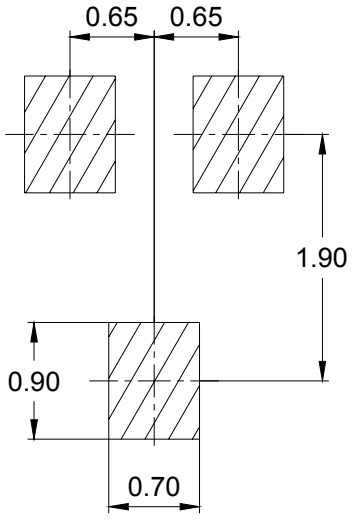
Plastic surface mounted package

SOT-323




| SOT-323 | | |
|---|---|---|
| Dim | Min | Max |
| A | 2.00 | 2.20 |
| B | 1.15 | 1.35 |
| C | 0.95 Typical | |
| D | 0.30 Typical | |
| E | 0.25 | 0.40 |
| G | 1.2 | 1.4 |
| H | 0.02 | 0.10 |
| J | 0.10 Typical | |
| K | 2.20 | 2.40 |
| All Dimensions in mm | | |

## SOLDERING FOOTPRINT




Unit : mm

## PACKAGE INFORMATION

| Package | Reel | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) |
|---|---|---|---|---|---|---|
| SOT -323 | 3000pcs | 7inch | 45,000pcs | 203×203×195 | 180,000pcs | 438×438×220 |