## / Descriptions

SOT-23 NPN Silicon NPN transistor in a SOT-23 Plastic Package.

## / Features

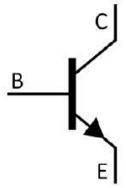
BCW68

Complementary to BCW68.

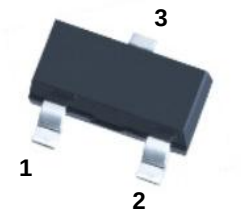
## / Applications

Medium power amplifier applications.

## / Equivalent Circuit




## / Pinning




PIN1 Base PIN 2 Emitter PIN 3 Collector

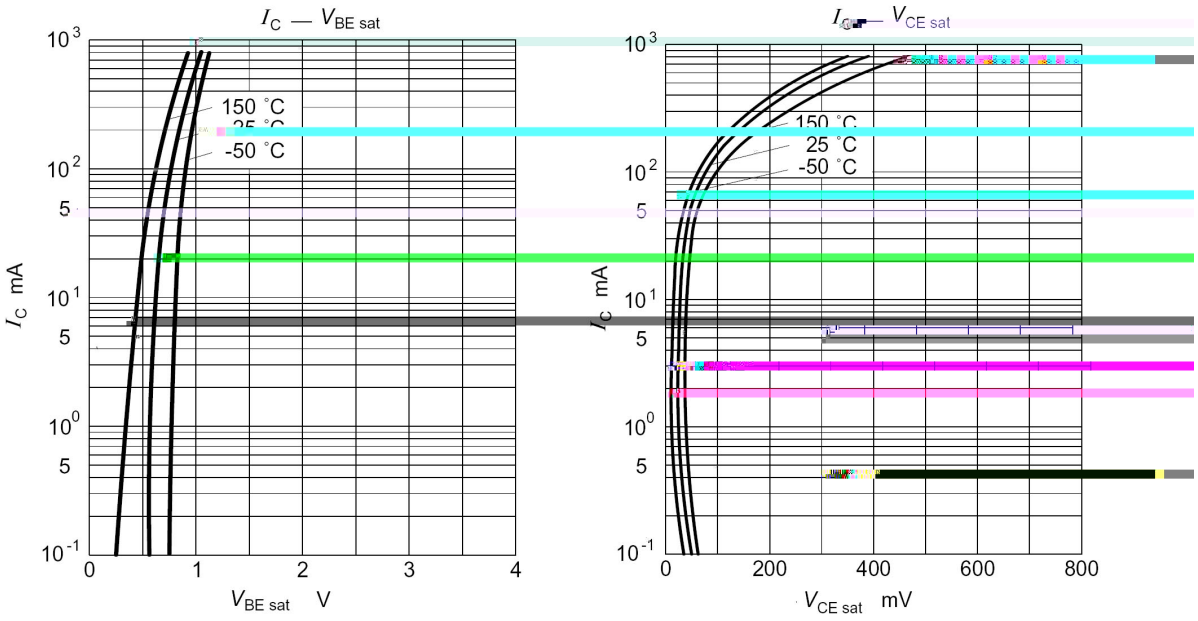
## / $h_{FE}$ Classifications & Marking

| $h_{FE}$ Classifications Symbol | F | G | H |
|---|---|---|---|
| $h_{FE}$ Range | 100 250 | 160 400 | 250 630 |
| Marking | HDAO | HDAY | HDAG |

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector to Base Voltage | $V_{CBO}$ | 75 | V |
| Collector to Emitter Voltage | $V_{CEO}$ | 45 | V |
| Emitter to Base Voltage | $V_{EBO}$ | 5.0 | V |
| Collector Current(DC) | $I_C$ | 800 | mA |
| Peak Collector Current | $I_{CM}$ | 1.0 | A |
| Peak Base Current | $I_B$ | 100 | mA |
| Collector Power Dissipation | $P_C$ | 330 | mW |
| Junction Temperature | $T_j$ | 150 | |
| Storage Temperature Range | $T_{stg}$ | -55 150 | |

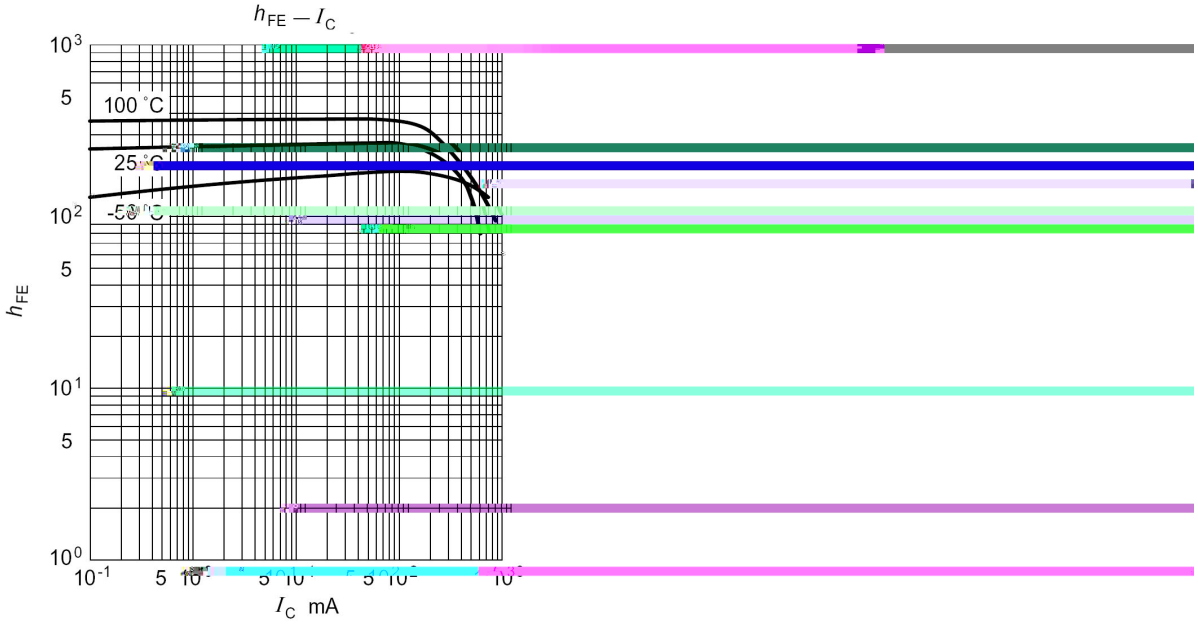
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector to Base Breakdown Voltage | $V_{CBO}$ | $I_C$=10 A | 75 | | | V |
| Collector to Emitter Breakdown Voltage | $V_{CEO}$ | $I_{CEO}$=10mA | 45 | | | V |
| Emitter to Base Breakdown Voltage | $V_{EBO}$ | $I_{EBO}$=10 A | 5.0 | | | V |
| Collector-Emitter Cut-off Current | $I_{CES}$ | $V_{CB}$=45 V | | | 0.1 | A |
| Emitter Base Cut-Off Current | $I_{EBO}$ | $V_{EB}$=4.0V | | | 0.1 | A |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$=1.0V $I_C$=100mA | 100 | | 630 | |
| | $h_{FE(2)}$ | $V_{CE}$=1.0V $I_C$=10mA | 75 | | | |
| | $h_{FE(3)}$ | $V_{CE}$=2.0V $I_C$=500mA | 35 | | | |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)(1)}$ | $I_C$=100mA $I_B$=10mA | | | 0.3 | V |
| | $V_{CE(sat)(2)}$ | $I_C$=500mA $I_B$=50mA | | | 0.7 | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$=500mA $I_B$=50mA | | | 2.0 | V |

## / Electrical Characteristic Curve

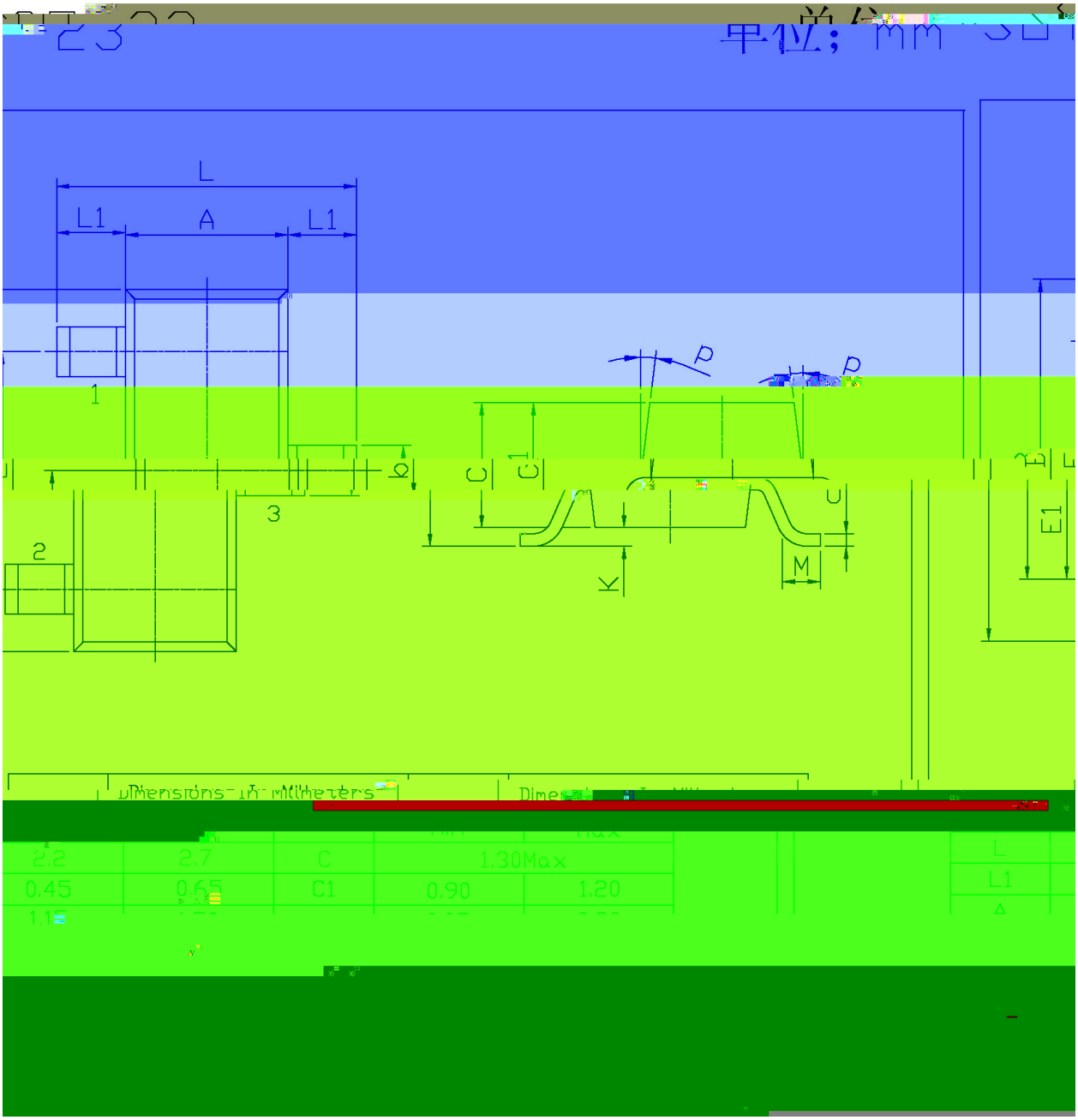



**DC current gain** $h_{FE} = f(I_C)$

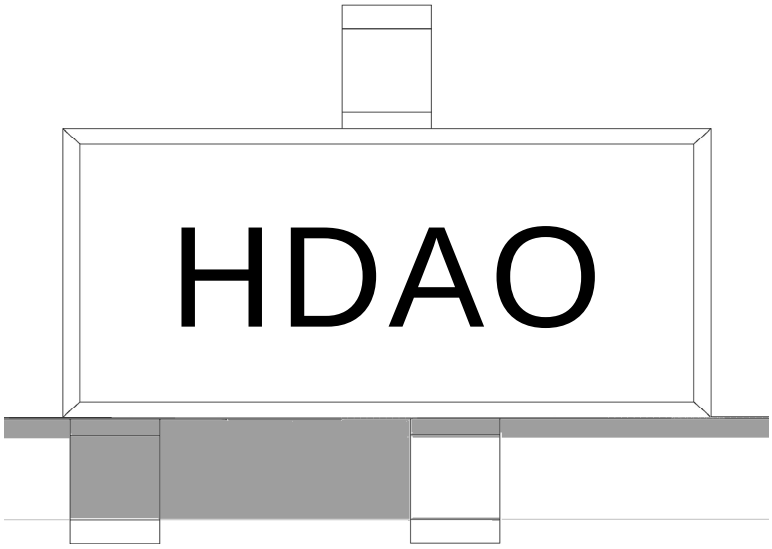
$V_{CE}$ = 1V



## / Package Dimensions



## / Marking Instructions




H

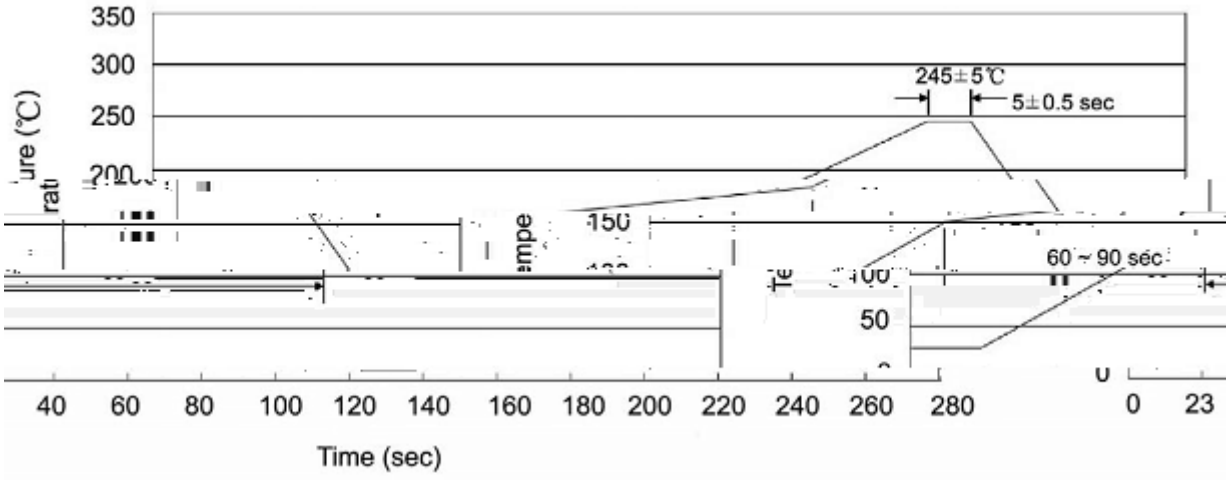
DAO

Note:

H: Company Code

DAO: Product Type Code

## ( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)




| | | | | |
|---|---|---|---|---|
| | | | Note: | |
| 1 | 25 150 | 60 90sec; | 1.Preheating:25~150 | , Time:60~90sec. |
| 2 | 245±5 | 5±0.5sec; | 2.Peak Temp.:245±5 | , Duration:5±0.5sec. |
| 3 | 2 10 /sec. | | 3. Cooling Speed: 2~10 /sec. | |

## / Resistance to Soldering Heat Test Conditions

| | | | |
|---|---|---|---|
| 260±5 | 10±1 sec. | Temp.:260±5 | Time:10±1 sec |

## / Packaging SPEC.

/ REEL

| Package Type | Units | | | | | Dimension | | (unit mm$^3$) |
|---|---|---|---|---|---|---|---|---|
| | Units/Reel / | Reels/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Reel | Inner Box | Outer Box |
| SOT-23 | 3,000 | 10 | 30,000 | 6 | 180,000 | 7 ×8 | 180×120×180 | 390×385×205 |

## / Notices