

# BRBT1208CWBD

Rev.A Oct.-2023

## 描述 / Descriptions

TO-263 塑封封装 双向可控硅。

Triac in a TO-263 Plastic Package.

## 特征 / Features

中电流可控硅，低通态压降，高可靠性和稳定性，热敏电阻特性低，无卤产品。

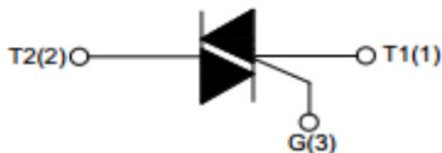
Medium current triac, Low on state voltage drop, High reliability and stability, Low thermal resistance, HF Product.

## 用途 / Applications

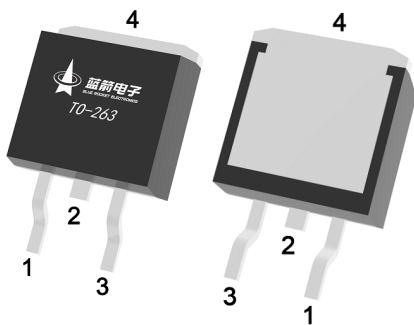
适用于一般用途交流开关。如固态继电器、加热调节、异步电动机起动电路、电机速度控制器等。

Suitable for general purpose AC switching .Such as static relays, heating regulation, induction motor starting circuits, motor speed controllers, etc.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Main Terminal 1    PIN 2、 4 : Main Terminal 2    PIN 3: Gate

## 印章代码 / Marking

见印章说明。

See Marking Instructions.

**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter  | 符号<br>Symbol                          | 数值<br>Rating | 单位<br>Unit       |
|--|---------------------------------------|--------------|------------------|
| Repetitive peak off-state/reverse voltages(T <sub>j</sub> =125°C)  | V <sub>DRM</sub> /V <sub>RPM</sub>    | 800          | V                |
| RMS on-state current(T <sub>C</sub> =90°C)   | I <sub>T(RMS)</sub>                   | 12           | A                |
| Non repetitive surge peak on-state current(full cycle, T <sub>j</sub> =25°C)                                 | I <sub>TSM(t=20ms)</sub>              | 120          | A                |
| I <sup>2</sup> t value for fusing(T <sub>j</sub> =25°C)  | I <sup>2</sup> t <sub>(tp=10ms)</sub> | 78           | A <sup>2</sup> s |
| Critical rate of rise of on-state current (I <sub>G</sub> =2I <sub>GT</sub> , f=120Hz T <sub>j</sub> =125°C) | dI/dt<br>I-II-III                     | 50           | A/μs             |
| Peak gate current(t <sub>p</sub> =20μs T <sub>j</sub> =125°C)  | I <sub>GM</sub>                       | 4.0          | A                |
| Average gate power dissipation(T <sub>j</sub> =125°C)  | P <sub>G(AV)</sub>                    | 1            | W                |
| Operating junction temperature range   | T <sub>j</sub>                        | -40~125      | °C               |
| Storage junction temperature range   | T <sub>stg</sub>                      | -40~150      | °C               |
| Junction to ambient(AC)  | R <sub>th(j-a)</sub>                  | 60           | °C/W             |
| Junction to case for(AC)   | R <sub>th(j-c)</sub>                  | 1.4          |                  |

**电性能参数 / Electrical Characteristics(T<sub>j</sub>=25°C)**
**免缓冲器和逻辑电平 ( 3象限 ) / Snubberless and logic level ( 3 quadrants)**

| 符号<br>Symbol     | 测试条件<br>Test Conditions   | 信号区<br>Quadrant       | 数值<br>Value |      | 单位<br>Unit |
|------------------|---|-----------------------|-------------|------|------------|
| I <sub>GT</sub>  | V <sub>D</sub> =12V R <sub>L</sub> =30Ω   | I-II-III              | Max.        | 35   | mA         |
| V <sub>GT</sub>  | V <sub>D</sub> =12V R <sub>L</sub> =30Ω   | I-II-III              | Max.        | 1.3  | V          |
| V <sub>GD</sub>  | V <sub>D</sub> =V <sub>DRM</sub> R <sub>L</sub> =3.3KΩ<br>T <sub>j</sub> =125°C | I-II-III              | Min.        | 0.2  | V          |
| I <sub>L</sub>   | I <sub>G</sub> =1.2I <sub>GT</sub>  | I-III                 | Max.        | 50   | mA         |
|                  |   | II                    |             | 60   |            |
| I <sub>H</sub>   | I <sub>T</sub> =100mA   |                       | Max.        | 40   | mA         |
| (dV/dt)          | V <sub>D</sub> =67% V <sub>DRM</sub> Gate Open                                  | T <sub>j</sub> =125°C | Min.        | 500  | V/μs       |
| V <sub>TM</sub>  | I <sub>TM</sub> =17A t <sub>p</sub> =380μs                                      | T <sub>j</sub> =25°C  | Max.        | 1.55 | V          |
| I <sub>DRM</sub> | V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RPM</sub>               | T <sub>j</sub> =25°C  |             | 5    | μA         |
| I <sub>RPM</sub> |   | T <sub>j</sub> =125°C |             | 1    | mA         |

电参数曲线图 / Electrical Characteristic Curve

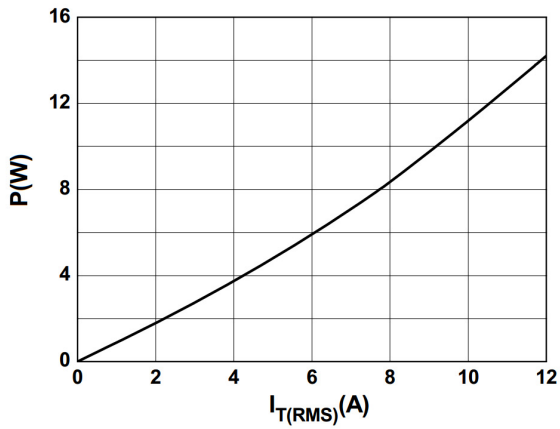


FIG.1 Maximum power dissipation versus RMS on-state current

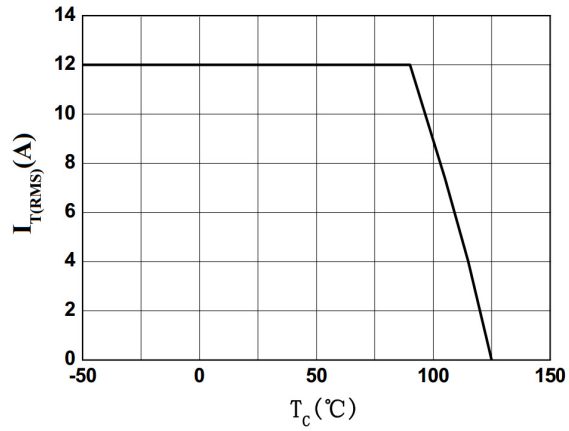


FIG.2: RMS on-state current versus case temperature

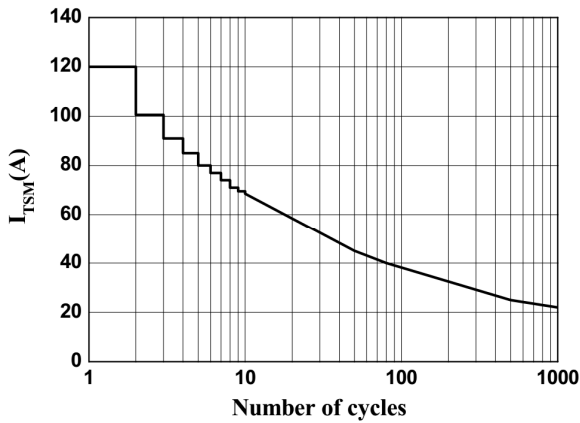


FIG.3: Surge peak on-state current versus number of cycles

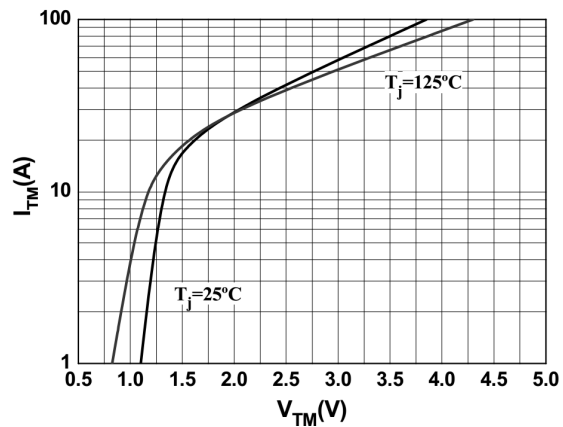


FIG.4: On-state characteristics

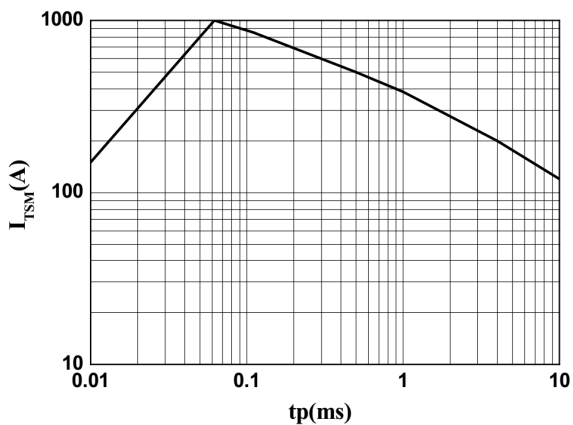


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I_2t$  ( $di/dt < 100\text{A}/\mu\text{s}$ )

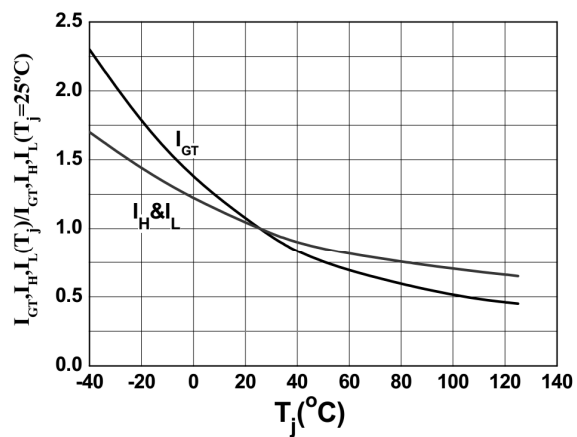
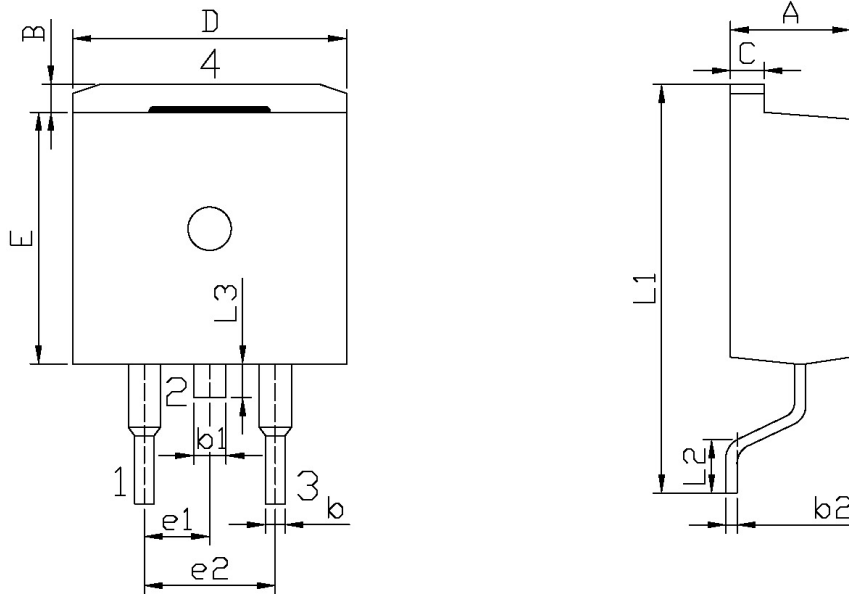


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

外形尺寸图 / Package Dimensions

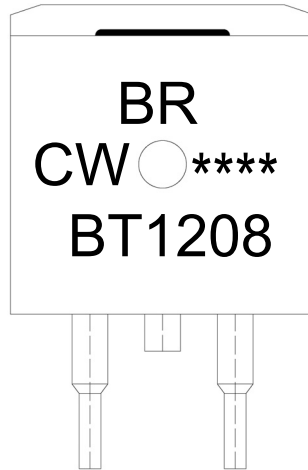


单位: mm

| Symbol | Dimensions In Millimeters |       | Symbol | Dimensions In Millimeters |       |
|--------|---------------------------|-------|--------|---------------------------|-------|
|        | Min                       | Max   |        | Min                       | Max   |
| A      | 4.30                      | 4.70  | E      | 9.00                      | 9.40  |
| B      | 1.00                      | 1.40  | e1     | 2.34                      | 2.74  |
| b      | 0.70                      | 0.90  | e2     | 4.88                      | 5.28  |
| b1     | 1.15                      | 1.35  | L1     | 15.00                     | 16.00 |
| b2     | 0.40                      | 0.60  | L2     | 2.24                      | 2.84  |
| C      | 1.20                      | 1.40  | L3     | 1.20                      | 1.60  |
| D      | 9.80                      | 10.20 |        |                           |       |

TQ-263

印章说明 / Marking Instructions



说明：

BR： 为公司代码

CW： 为 I<sub>GT</sub> 分档代码

\*\*\*\*： 为生产批号代码，随生产批号变化

BT1208： 为型号代码

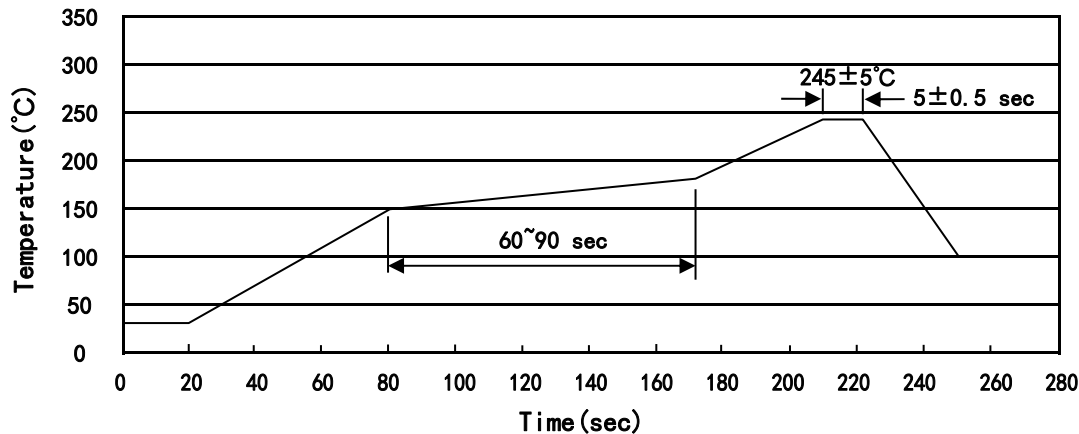
Note:

BR: Company Code

CW: I<sub>GT</sub> Bracket code

\*\*\*\*: Lot No. Code, code change with Lot No

BT1208: Product Type Code

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**


说明：

- 1、预热温度 150~180°C，时间 60~90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Reel                                    | Inner Box 盒 | Outer Box 箱 |
| TO-263               | 800                | 1                       | 800                    | 6                            | 4,800                  | 13" ×24                                 | 360×360×50  | 380×335×366 |

套管包装 / TUBE

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Tube<br>只/套管 | Tubes/Inner Box<br>套管/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>只/箱 | Tube 套管                                 | Inner Box 盒 | Outer Box 箱 |
| TO-263               | 50                 | 20                      | 1,000                  | 5                            | 5,000                  | 532×33×7.0                              | 555×164×50  | 575×290×180 |

**使用说明 / Notices**