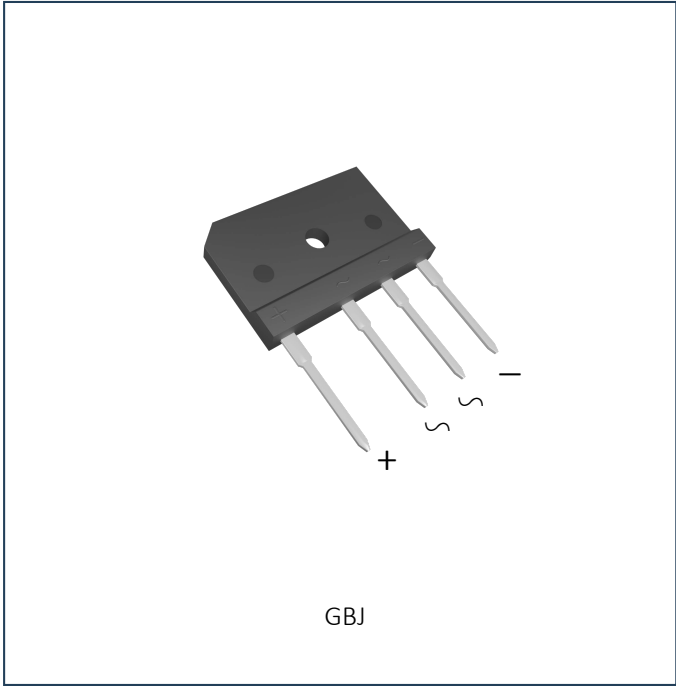


**GBJ4003H**

快恢复桥式整流器

Fast Recovery Bridge Rectifier

封装外形 Package



机械数据 Mechanical Data

- 快恢复时间 fast recovery time
- 高浪涌电流能力 High surge current capability
- 低漏电流 Low leakage current
- 符合 RoHS 指令 2011/65/EU  
Compliant to RoHS directive 2011/65/EU
- 焊料浸渍温度最高为 275℃，持续 7 秒Solder  
dip 275 °C max. 7 s

主要参数 Device summary

| 参数         | 典型值               |
|------------|-------------------|
| $I_F(AV)$  | 40A               |
| $V_{RRM}$  | 300V              |
| $V_F(typ)$ | 0.80V@20A 125°C   |
| $I_R(typ)$ | 0.05mA@300V 125°C |
| $T_J(max)$ | 150°C             |

产品特点 Features

- 模塑料符合 UL 94 V-0 易燃等级，符合 RoHS 标准  
Molding compound meets UL 94 V-0 flammability  
rating, RoHS-compliant
- 端子: 镀锡引线, 可焊接 J-STD-002 和 JESD22-B102  
Terminals: Tin plated leads, solderable per J-STD-  
002 and JESD22-B102
- 极性: 本体标记  
Polarity: As marked on body

## 最大额定值 Maximum ratings(Ta=25°C)

| 项目<br>Parameter                                                          |                                                                     | 符号<br>Symbol     | 数值<br>Value | 单位<br>Unit |
|--------------------------------------------------------------------------|---------------------------------------------------------------------|------------------|-------------|------------|
| 反向电压 Peak repetitive reverse voltage                                     |                                                                     | V <sub>RRM</sub> | 300         | V          |
| 正向电流<br>Forward current                                                  | 带散热片 T <sub>c</sub> =110°C<br>With heatsink T <sub>c</sub> =110°C   | I <sub>F</sub>   | 40          | A          |
|                                                                          | 不带散热片 T <sub>c</sub> =25°C<br>Without heatsink T <sub>c</sub> =25°C |                  | 3.2         |            |
| 浪涌电流<br>Non-repetitive single pulse surge current t=8.3ms                |                                                                     | I <sub>FSM</sub> | 360         | A          |
| 结温 Junction temperature                                                  |                                                                     | T <sub>j</sub>   | -55~+150    | °C         |
| 存储温度 Storage temperature                                                 |                                                                     | T <sub>STG</sub> | -55~+150    | °C         |
| 绝缘电压 (端子至外壳交流 1 分钟)<br>Dielectric strength(terminal to case AC 1 minute) |                                                                     | V <sub>dis</sub> | 2500        | V          |
| 安装扭矩<br>Mounting torque@Recommend torque: 5kg·cm                         |                                                                     | T <sub>or</sub>  | 8           | kg·cm      |

## 电特性 Electrical characteristics(Ta=25°C)

| 项目<br>Parameter           | 测试条件<br>Tests conditions |                                                                                                  | 数值 Value     |              |              | 单位<br>Unit |
|---------------------------|--------------------------|--------------------------------------------------------------------------------------------------|--------------|--------------|--------------|------------|
|                           |                          |                                                                                                  | 最小值<br>(min) | 典型值<br>(typ) | 最大值<br>(max) |            |
| 反向电压<br>V <sub>RRM</sub>  | I <sub>R</sub> =0.05mA   |                                                                                                  | 300          | -            | -            | V          |
| 反向漏电<br>I <sub>R</sub>    | T <sub>j</sub> =25°C     | V <sub>R</sub> =V <sub>RRM</sub>                                                                 | -            | -            | 0.03         | mA         |
|                           | T <sub>j</sub> =125°C    |                                                                                                  | -            | -            | 0.75         |            |
| 正向电压<br>V <sub>F</sub>    | T <sub>j</sub> =25°C     | I <sub>F</sub> =20A                                                                              | -            | -            | 1.2          | V          |
|                           | T <sub>j</sub> =100°C    | I <sub>F</sub> =10A                                                                              | -            | 0.76         | -            |            |
|                           |                          | I <sub>F</sub> =20A                                                                              | -            | 0.86         | -            |            |
|                           | T <sub>j</sub> =125°C    | I <sub>F</sub> =10A                                                                              | -            | 0.70         | -            |            |
|                           |                          | I <sub>F</sub> =20A                                                                              | -            | 0.80         | -            |            |
| 反向恢复时间<br>T <sub>rr</sub> | T <sub>j</sub> =25°C     | Reverse recovery condition<br>I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A | -            | -            | 60           | nS         |

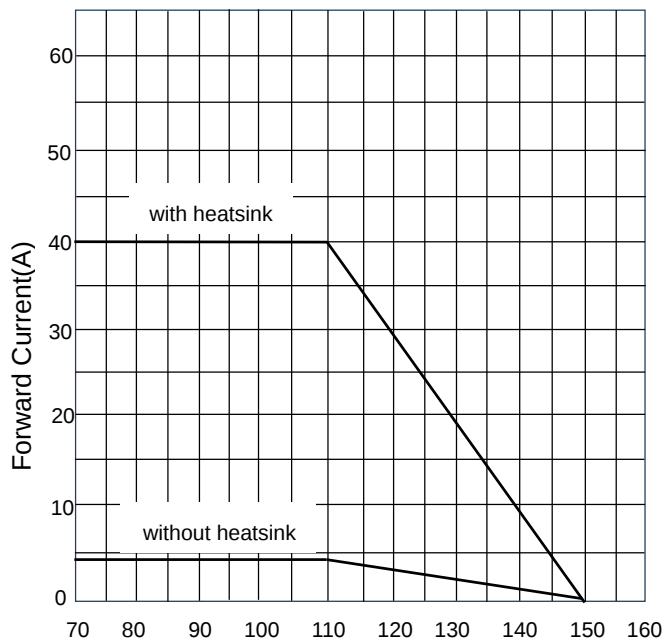
## 热特性 Thermal characteristics(Ta=25°C)

| 项目<br>Parameter                                                           | 符号<br>Symbol         | 数值<br>Value | 单位<br>Unit |
|---------------------------------------------------------------------------|----------------------|-------------|------------|
| 结到环境热阻 (无散热片)<br>Junction to ambient thermal resistance(without heatsink) | R <sub>th(j-a)</sub> | 18          | °C/W       |
| 结到管壳热阻 (有散热片)<br>Thermal resistance from junction to case(with heatsink)  | R <sub>th(j-c)</sub> | 1.0         | °C/W       |

## 典型特征图 Typical Characteristics

图 1: 正向电流与外壳温度

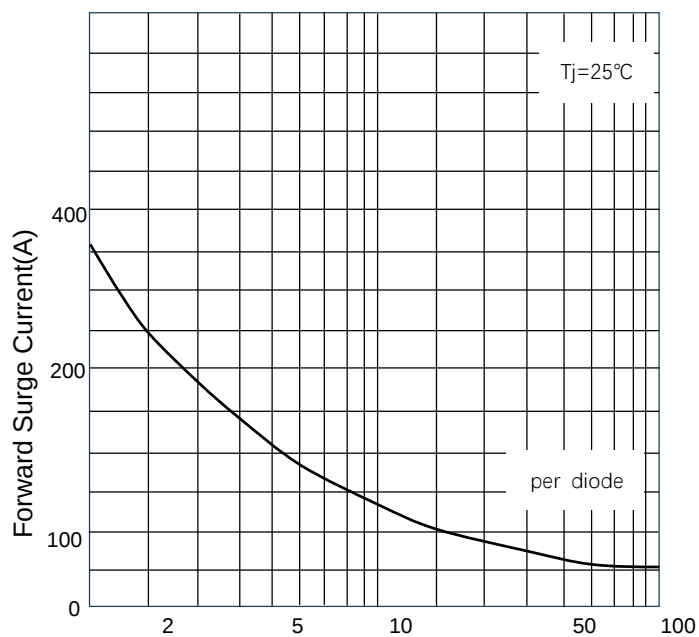
FIG 1:  $I_F$ - $T_C$



Case Temperature(°C)

图 2: 正向浪涌循环次数

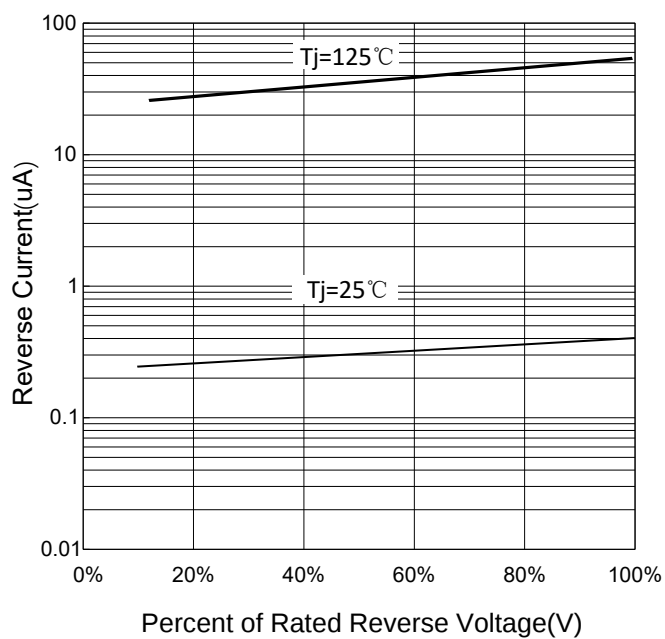
FIG 2: Surge Forward Current Capability



Number of Cycles

图 3: 反向电压与反向电流

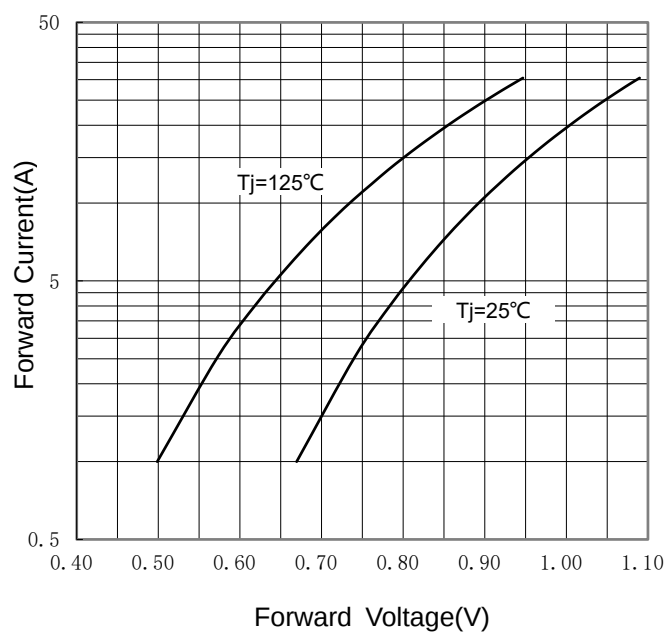
FIG 3:  $V_R$ - $I_R$



Percent of Rated Reverse Voltage(V)

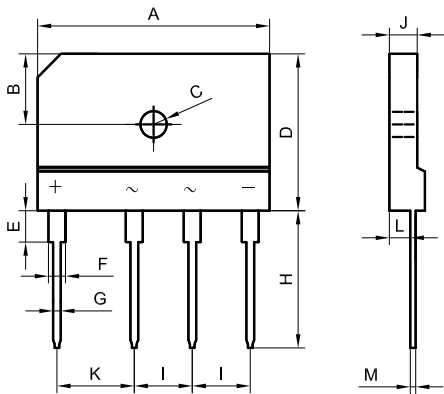
图 4: 正向电流与正向电压

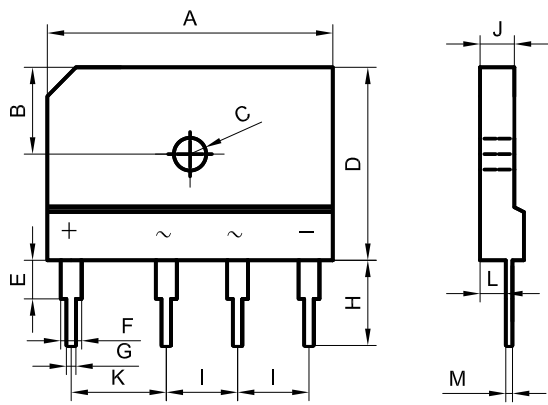
FIG 4:  $I_F$ - $V_F$

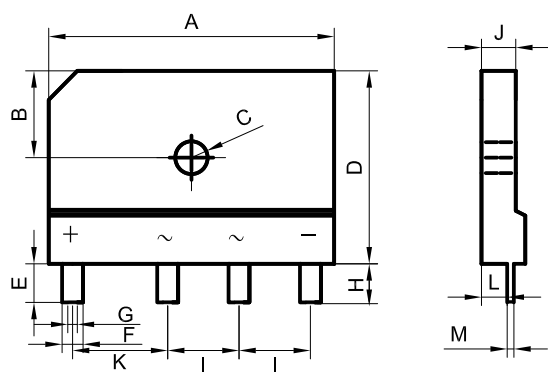


Forward Voltage(V)

# 外形尺寸 Outline Dimensions

|     |                                                                                   |                                         |            |            |            |
|-----|-----------------------------------------------------------------------------------|-----------------------------------------|------------|------------|------------|
| GBJ |  | <b>Dim</b>                              | <b>Min</b> | <b>Typ</b> | <b>Max</b> |
|     |                                                                                   | A                                       | 29.50      | 30.00      | 30.50      |
|     |                                                                                   | B                                       | 8.80       | 9.00       | 9.20       |
|     |                                                                                   | C                                       | 3.10       | 3.25       | 3.40       |
|     |                                                                                   | D                                       | 19.50      | 20.00      | 20.50      |
|     |                                                                                   | E                                       | 3.70       | 4.00       | 4.30       |
|     |                                                                                   | F                                       | 2.00       | 2.20       | 2.40       |
|     |                                                                                   | G                                       | 0.90       | 1.00       | 1.10       |
|     |                                                                                   | H                                       | 17.00      | 17.50      | 18.00      |
|     |                                                                                   | I                                       | 7.30       | 7.50       | 7.70       |
|     |                                                                                   | J                                       | 4.40       | 4.60       | 4.80       |
|     |                                                                                   | K                                       | 9.80       | 10.00      | 10.20      |
|     |                                                                                   | L                                       | 3.10       | 3.40       | 3.10       |
|     |                                                                                   | M                                       | 0.50       | 0.60       | 0.70       |
|     |                                                                                   | 尺寸单位: (mm)<br>Dimensions in millimeters |            |            |            |

|         |                                                                                    |                                         |            |            |            |
|---------|------------------------------------------------------------------------------------|-----------------------------------------|------------|------------|------------|
| GBJ-C40 |  | <b>Dim</b>                              | <b>Min</b> | <b>Typ</b> | <b>Max</b> |
|         |                                                                                    | A                                       | 29.50      | 30.00      | 30.50      |
|         |                                                                                    | B                                       | 8.80       | 9.00       | 9.20       |
|         |                                                                                    | C                                       | 3.10       | 3.25       | 3.40       |
|         |                                                                                    | D                                       | 19.50      | 20.00      | 20.50      |
|         |                                                                                    | E                                       | 3.70       | 4.00       | 4.30       |
|         |                                                                                    | F                                       | 2.00       | 2.20       | 2.40       |
|         |                                                                                    | G                                       | 0.90       | 1.00       | 1.10       |
|         |                                                                                    | H                                       | 7.80       | 8.00       | 8.20       |
|         |                                                                                    | I                                       | 7.30       | 7.50       | 7.70       |
|         |                                                                                    | J                                       | 4.40       | 4.60       | 4.80       |
|         |                                                                                    | K                                       | 9.80       | 10.00      | 10.20      |
|         |                                                                                    | L                                       | 3.10       | 3.40       | 3.10       |
|         |                                                                                    | M                                       | 0.50       | 0.60       | 0.70       |
|         |                                                                                    | 尺寸单位: (mm)<br>Dimensions in millimeters |            |            |            |

|         |                                                                                     |                                         |            |            |            |
|---------|-------------------------------------------------------------------------------------|-----------------------------------------|------------|------------|------------|
| GBJ-D35 |  | <b>Dim</b>                              | <b>Min</b> | <b>Typ</b> | <b>Max</b> |
|         |                                                                                     | A                                       | 29.50      | 30.00      | 30.50      |
|         |                                                                                     | B                                       | 8.80       | 9.00       | 9.20       |
|         |                                                                                     | C                                       | 3.10       | 3.25       | 3.40       |
|         |                                                                                     | D                                       | 19.50      | 20.00      | 20.50      |
|         |                                                                                     | E                                       | 3.70       | 4.00       | 4.30       |
|         |                                                                                     | F                                       | 2.00       | 2.20       | 2.40       |
|         |                                                                                     | G                                       | 0.90       | 1.00       | 1.10       |
|         |                                                                                     | H                                       | 3.10       | 3.50       | 3.90       |
|         |                                                                                     | I                                       | 7.30       | 7.50       | 7.70       |
|         |                                                                                     | J                                       | 4.40       | 4.60       | 4.80       |
|         |                                                                                     | K                                       | 9.80       | 10.00      | 10.20      |
|         |                                                                                     | L                                       | 3.10       | 3.40       | 3.10       |
|         |                                                                                     | M                                       | 0.50       | 0.60       | 0.70       |
|         |                                                                                     | 尺寸单位: (mm)<br>Dimensions in millimeters |            |            |            |

## 订购信息 Ordering Information

| 订单型号<br>Order code | 印记<br>Marking | 封装<br>Package | 重量<br>Weight<br>(g) | 包装形式<br>Packing | 基本包装<br>Base qty<br>(pcs) | 盒<br>Box<br>(pcs) | 箱<br>Carton<br>(pcs) |
|--------------------|---------------|---------------|---------------------|-----------------|---------------------------|-------------------|----------------------|
| CGBJ4003H000B      | GBJ4003H      | GBJ           | 7.1                 | 盒装 Box          | 250                       | 250               | 2000                 |
| CGBJ4003HC40B      | GBJ4003H      | GBJ           | 7.0                 | 盒装 Box          | 250                       | 250               | 2000                 |
| CGBJ4003HD35B      | GBJ4003H      | GBJ           | 7.0                 | 盒装 Box          | 250                       | 250               | 2000                 |

注 note:

- \*. "C40"为短脚，详见外形尺寸。"C40" means short pin, the size is shown in the Outline Dimensions.
- \*. "D35"为短脚，详见外形尺寸。"D35" means short pin, the size is shown in the Outline Dimensions.

### 请仔细阅读

感谢您使用或即将使用本公司的产品。建议您在使用前仔细阅读本资料。

- 本公司竭力为用户提供更优质的产品及服务。
- 江苏信达兴微电子有限公司会不定期的优化产品及相应规格书，也许无法及时通知到您，请定期下载最新的版本。
- 江苏信达兴微电子有限公司对任何将其产品用于特殊目的的行为不承担任何责任与风险。
- 江苏信达兴微电子有限公司对自身的产品拥有专利权。
- 任何半导体产品在特定条件下都有一定的失效或发生故障的可能。买方在使用江苏信达兴微电子有限公司产品进行系统设计和整机制造时请遵守安全标准并采取安全措施，以避免可能造成人身伤害或财产损失的情况！

### Please Read Carefully

Thank you for choosing our company's products. We suggest that you carefully read this material before use.

- Our company strives to provide users with higher quality products and services.
- Jiangsu POWERSi Microelectronics Co., Ltd. will periodically optimize its products and corresponding specifications, and may not be able to notify you in a timely manner. Please download the latest version regularly.
- Jiangsu POWERSi Microelectronics Co., Ltd. assumes no responsibility or risk for any use of its products for special purposes.
- Jiangsu POWERSi Microelectronics Co., Ltd. holds patent rights for its own products.
- Any semiconductor product has a certain possibility of failure or malfunction under specific conditions. The user is requested to comply with safety standards and take safety measures when using products from Jiangsu POWERSi Microelectronics Co., Ltd. for system design and complete machine manufacturing, in order to avoid situations that may cause personal injury or property damage!