



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



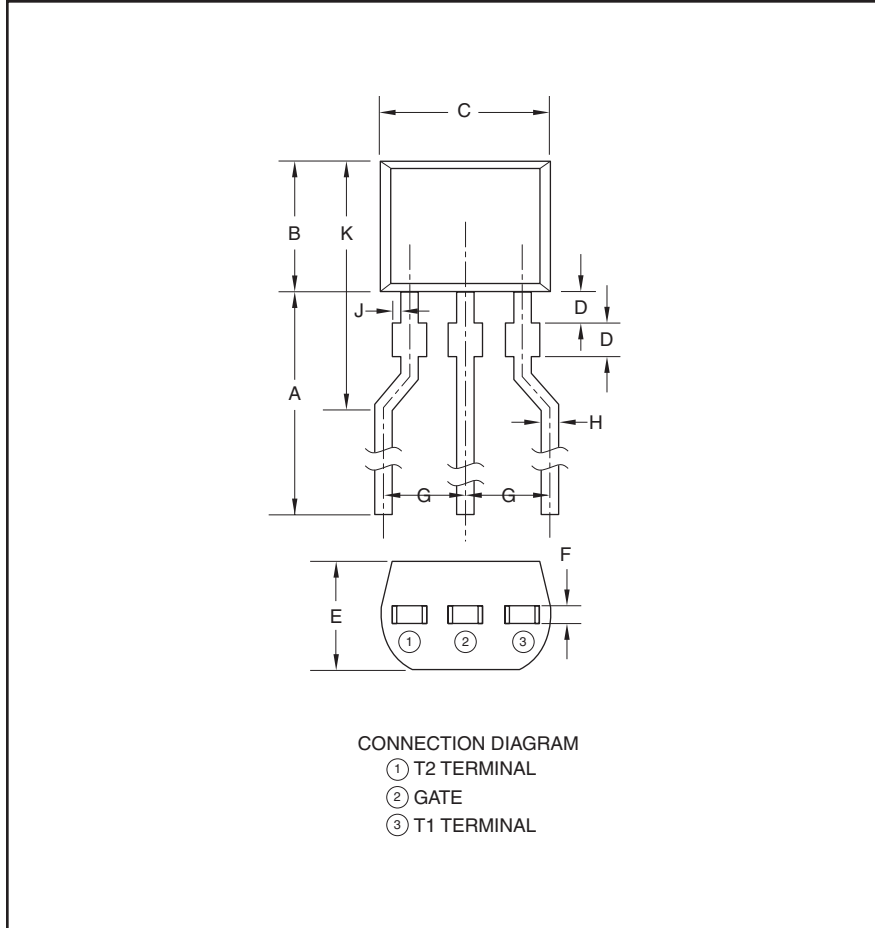
## Contact us

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Outline Drawing and Circuit Diagram

| Dimension | Inches     | Millimeters |
|-----------|------------|-------------|
| A         | 0.55 Min.  | 14.0 Min.   |
| B         | 0.12 Max.  | 3.0 Max.    |
| C         | 0.16       | 4.0         |
| D         | 0.39       | 1.0         |
| E         | 0.098 Max. | 2.5 Max.    |

| Dimension | Inches    | Millimeters |
|-----------|-----------|-------------|
| F         | 0.016     | 0.4         |
| G         | 0.10      | 2.5         |
| H         | 0.018     | 0.45        |
| J         | 0.004     | 0.1         |
| K         | 0.29 Max. | 7.5 Max.    |



#### Description:

The BS08D-T112 bilateral switch is a silicon planar monolithic integrated circuit with the electrical characteristics of a bilateral thyristor. The device is designed to switch at 7 to 9 volts with a 0.01%/°C temperature coefficient and have excellently matched characteristics in both directions.

#### Features:

- Low Switching Voltage of 7 to 9 Volts
- Excellent Switching Voltage Temperature Characteristics (0.01%/°C)
- High Reliability Devices
- Gate Electrode Facilitating Switching Operation Control and Synchronization

#### Applications:

- Trigger Circuits for Thyristor or Triac, Oscillators, Timers

#### Ordering Information:

BS08D-T112 is tape and fencil packaged (2500/box).



Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272 www.pwrx.com

**BS08D-T112**  
Silicon Bilateral Switch

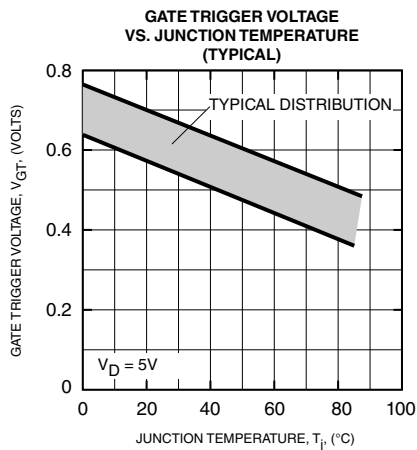
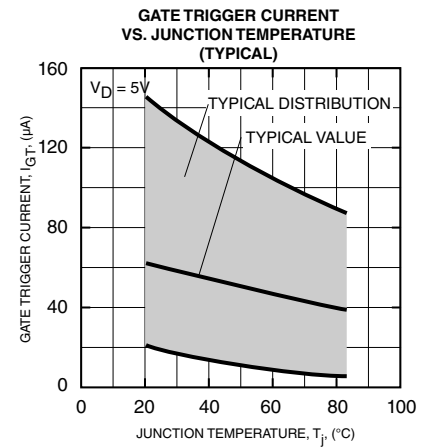
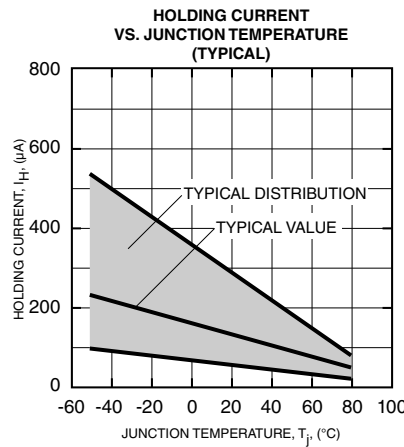
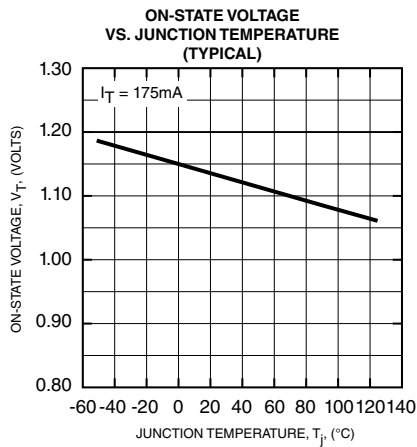
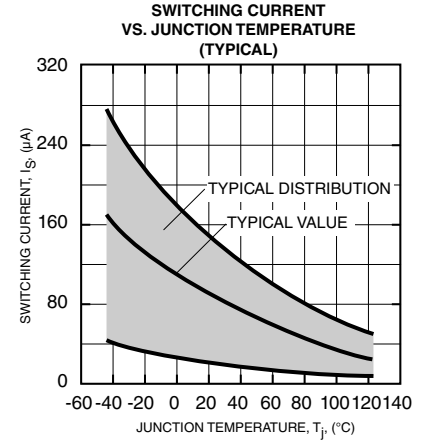
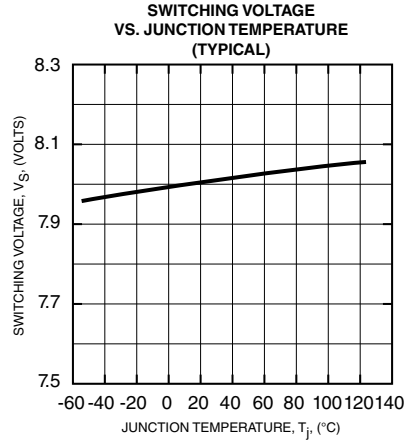
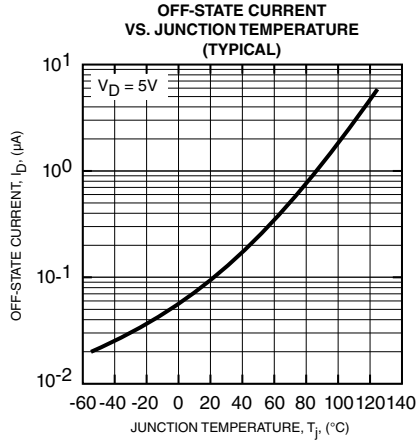
**Absolute Maximum Ratings,  $T_j = 25^\circ\text{C}$  unless otherwise specified**

| Characteristics  | Symbol           | BS08D-T112 | Units            |
|--|------------------|------------|------------------|
| DC Forward Anode Current   | $I_T$            | 175        | mA               |
| Repetitive Peak Forward Current<br>(1% Duty Cycle, 10 $\mu\text{s}$ Pulsewidth), $T_a = 100^\circ\text{C}$ | —                | 1.0        | Amperes          |
| Non-repetitive Peak Forward Current (10 $\mu\text{s}$ Pulsewidth)  | —                | 2.0        | Amperes          |
| Power Dissipation  | $P_T$            | 450        | mW               |
| DC Gate Current  | $I_G$            | 5          | mA               |
| Storage Temperature  | $T_{\text{stg}}$ | -55 to 125 | $^\circ\text{C}$ |
| Operating Temperature  | $T_j$            | -55 to 125 | $^\circ\text{C}$ |

**Electrical and Mechanical Characteristics,  $T_j = 25^\circ\text{C}$  unless otherwise specified**

| Characteristics                              | Symbol              | Test Conditions                              | Min. | Typ.       | Max. | Units               |
|--|---------------------|--|------|------------|------|---------------------|
| Switching Voltage                            | $V_S$               | $T_a = 25^\circ\text{C}$                     | 7    | 8          | 9    | Volts               |
| Switching Current                            | $I_S$               | $T_a = 25^\circ\text{C}$                     | —    | —          | 200  | $\mu\text{A}$       |
| Absolute Switching Voltage Difference        | $ V_{S1} - V_{S2} $ | $T_a = 25^\circ\text{C}$                     | —    | —          | 0.5  | Volts               |
| Absolute Switching Current Difference        | $ I_{S1} - I_{S2} $ | $T_a = 25^\circ\text{C}$                     | —    | —          | 100  | $\mu\text{A}$       |
| Holding Current                              | $I_H$               | $T_a = 25^\circ\text{C}$                     | —    | —          | 1.5  | mA                  |
| Off-state Current                            | $I_D$               | $V_D = 5\text{V}, T_a = 25^\circ\text{C}$    | —    | —          | 1.0  | $\mu\text{A}$       |
|  |                     | $V_D = 5\text{V}, T_a = 85^\circ\text{C}$    | —    | —          | 10   | $\mu\text{A}$       |
| Temperature Coefficient of Switching Voltage | —                   | $T_a = -55$ to $85^\circ\text{C}$            | —    | $\pm 0.01$ | —    | $\%/^\circ\text{C}$ |
| Peak On-state Voltage                        | $V_T$               | $I_T = 175\text{mA}, T_a = 25^\circ\text{C}$ | —    | —          | 1.4  | Volts               |
| Gate Trigger Current                         | $I_{GT}$            | $V_D = 5\text{V}, T_a = 25^\circ\text{C}$    | 10   | —          | 200  | $\mu\text{A}$       |
| Gate Non-trigger Voltage                     | $V_{GD}$            | $V_D = 5\text{V}, T_a = 85^\circ\text{C}$    | 0.2  | —          | —    | Volts               |

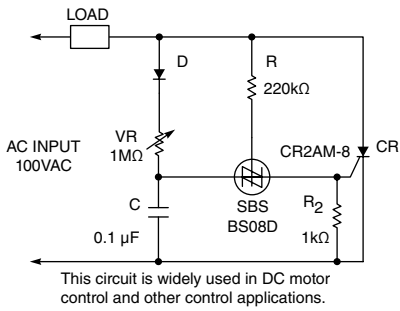
**BS08D-T112**  
Silicon Bilateral Switch



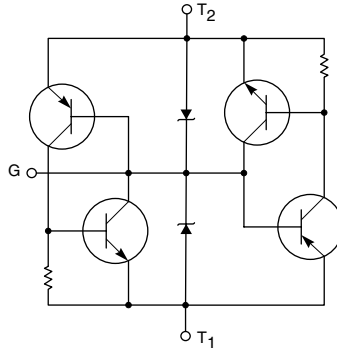
**BS08D-T112**  
Silicon Bilateral Switch

**APPLICATION EXAMPLES**

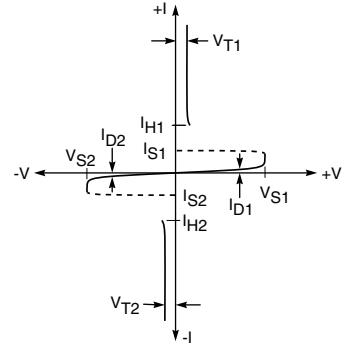
**THYRISTOR TRIGGER CIRCUIT**



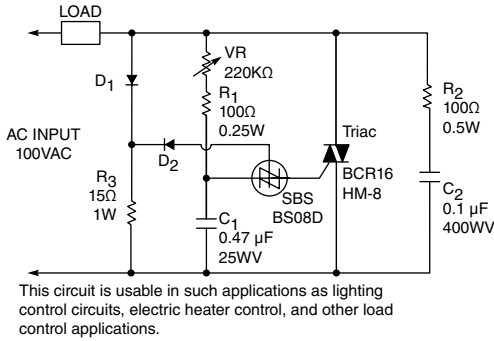
**EQUIVALENT CIRCUIT**



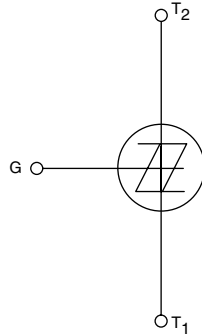
**STATIC CHARACTERISTICS**



**TRIAC TRIGGER CIRCUIT**



**CIRCUIT SYMBOL**



**GATE CHARACTERISTICS MEASUREMENT CIRCUIT**

