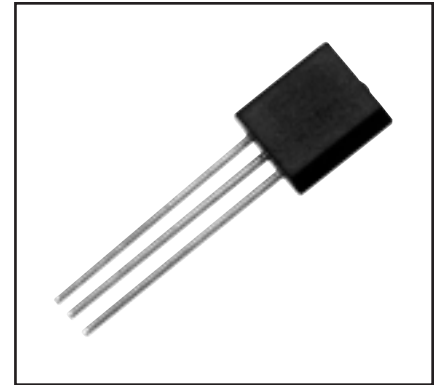
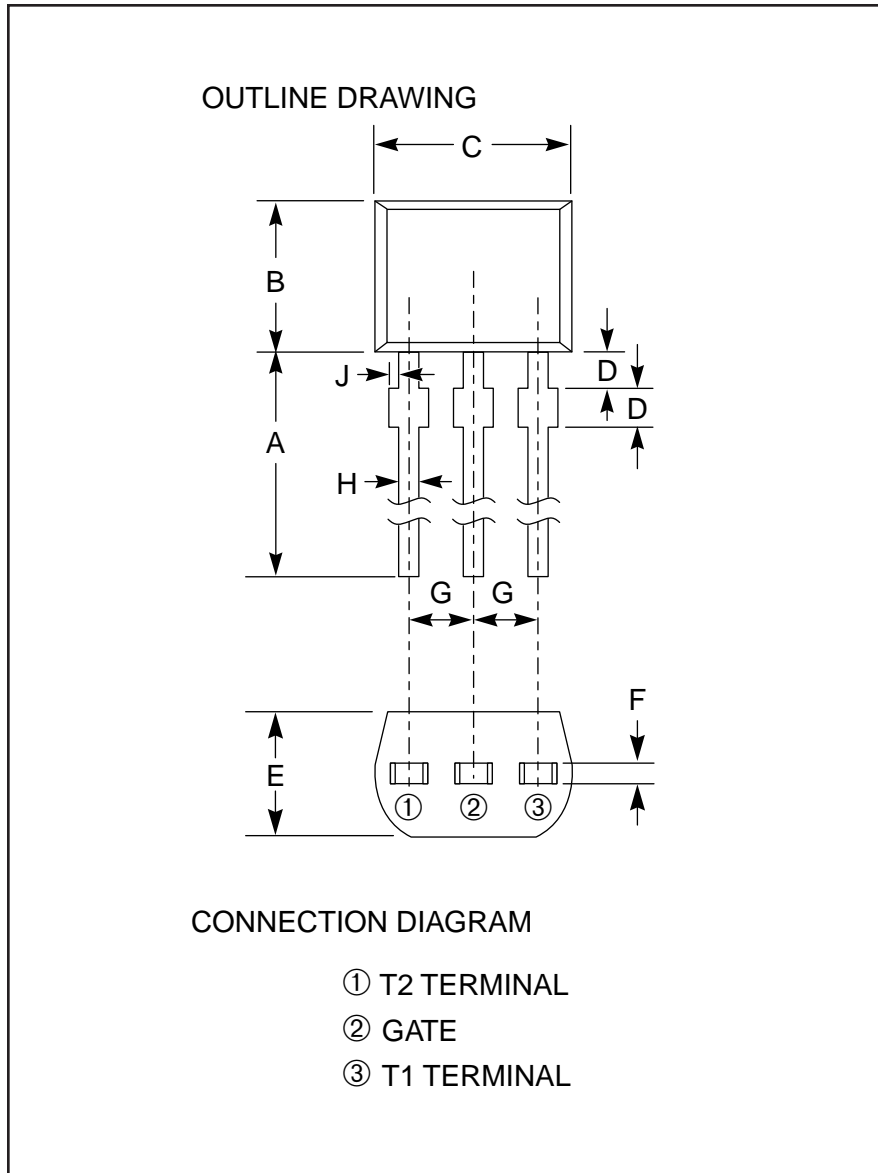


### Silicon Bilateral Switch



#### Description:

The BS08D 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:

Example: Select the complete five digit part number you desire from the table - i.e. BS08D is a 175mA Silicon Bilateral Switch.

Type
BS08D

#### Outline Drawing

Dimensions	Inches	Millimeters
A	0.55 Min.	14.0 Min.
B	0.12 Max.	3.0 Max.
C	0.16	4.0
D	0.14	3.55
E	0.098 Max.	2.5 Max.
F	0.016	0.4
G	0.05 ± 0.012	1.27
H	0.018	0.45

**BS08D**  
Silicon Bilateral Switch

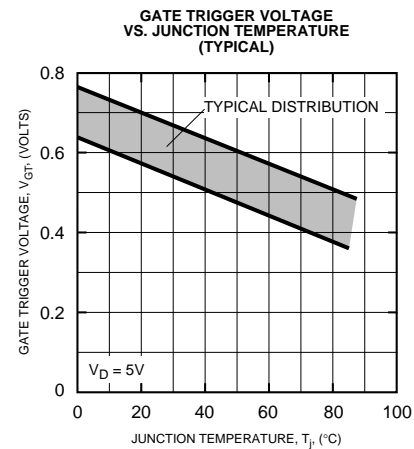
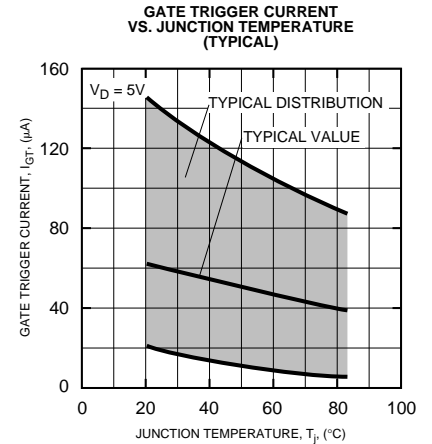
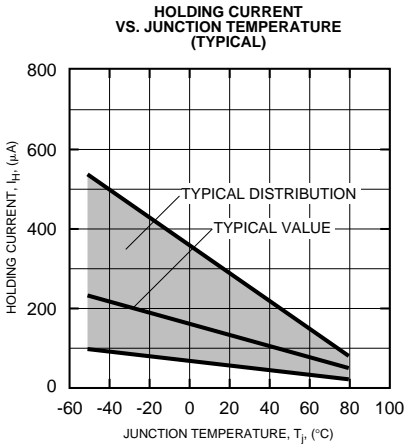
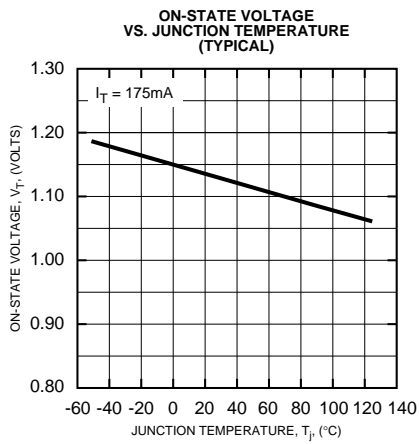
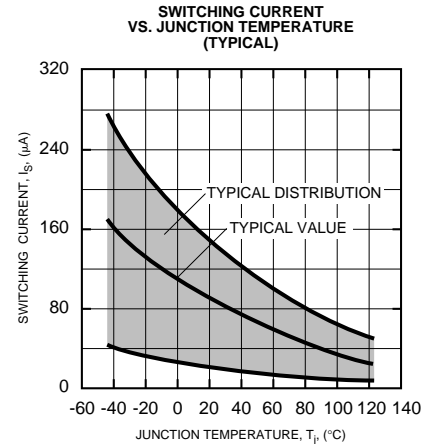
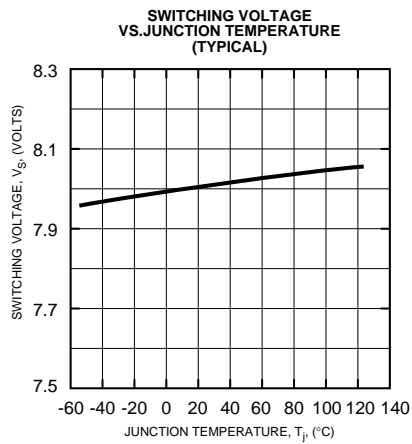
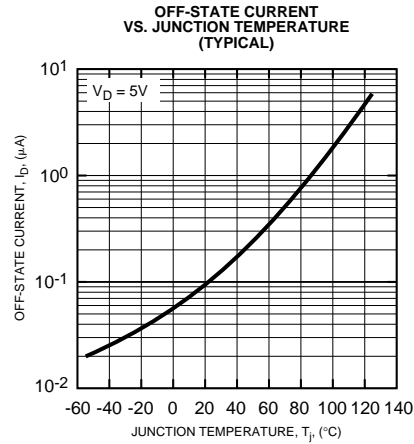
**Absolute Maximum Ratings,  $T_a = 25^\circ\text{C}$  unless otherwise specified**

Ratings	Symbol	BS08D	Units
DC Forward Anode Current	$I_T$	175	mA
Repetitive Peak Forward Current (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	$T_{stg}$	-55 to 125	$^\circ\text{C}$
Operating Temperature	$T_j$	-55 to 125	$^\circ\text{C}$

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

Characteristics	Symbol	Test Conditions	BS08D			Units
			Min.	Typ.	Max.	
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

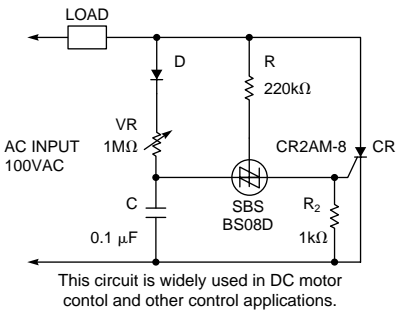
**BS08D**  
Silicon Bilateral Switch



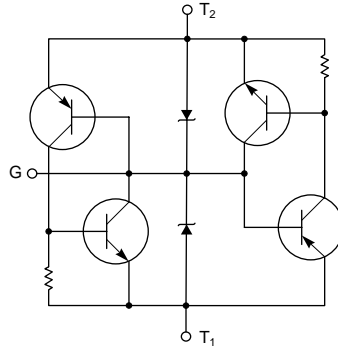
**BS08D**  
Silicon Bilateral Switch

**APPLICATION EXAMPLES**

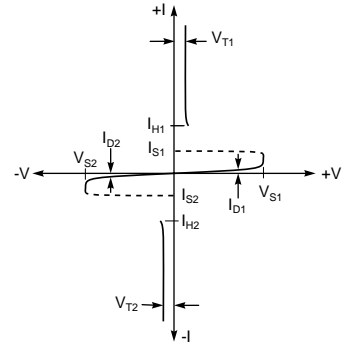
**THYRISTOR TRIGGER CIRCUIT**



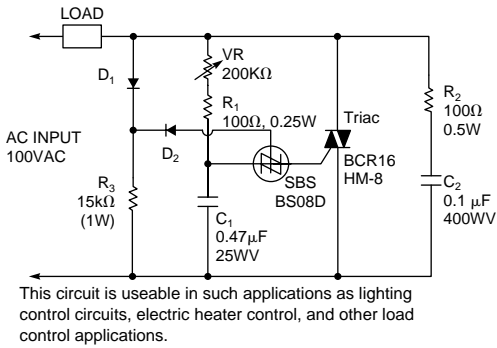
**EQUIVALENT CIRCUIT**



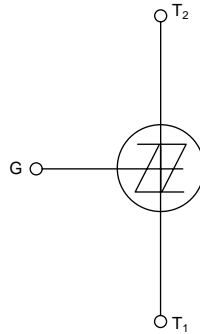
**STATIC CHARACTERISTICS**



**TRIAC TRIGGER CIRCUIT**



**CIRCUIT SYMBOL**



**GATE CHARACTERISTICS MEASUREMENT CIRCUIT**

