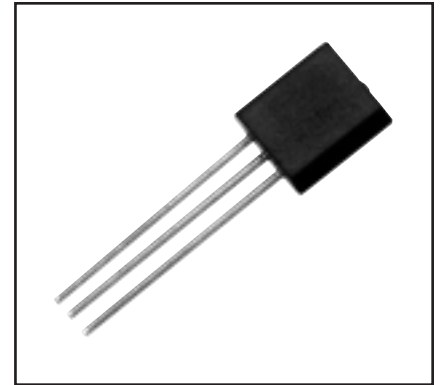
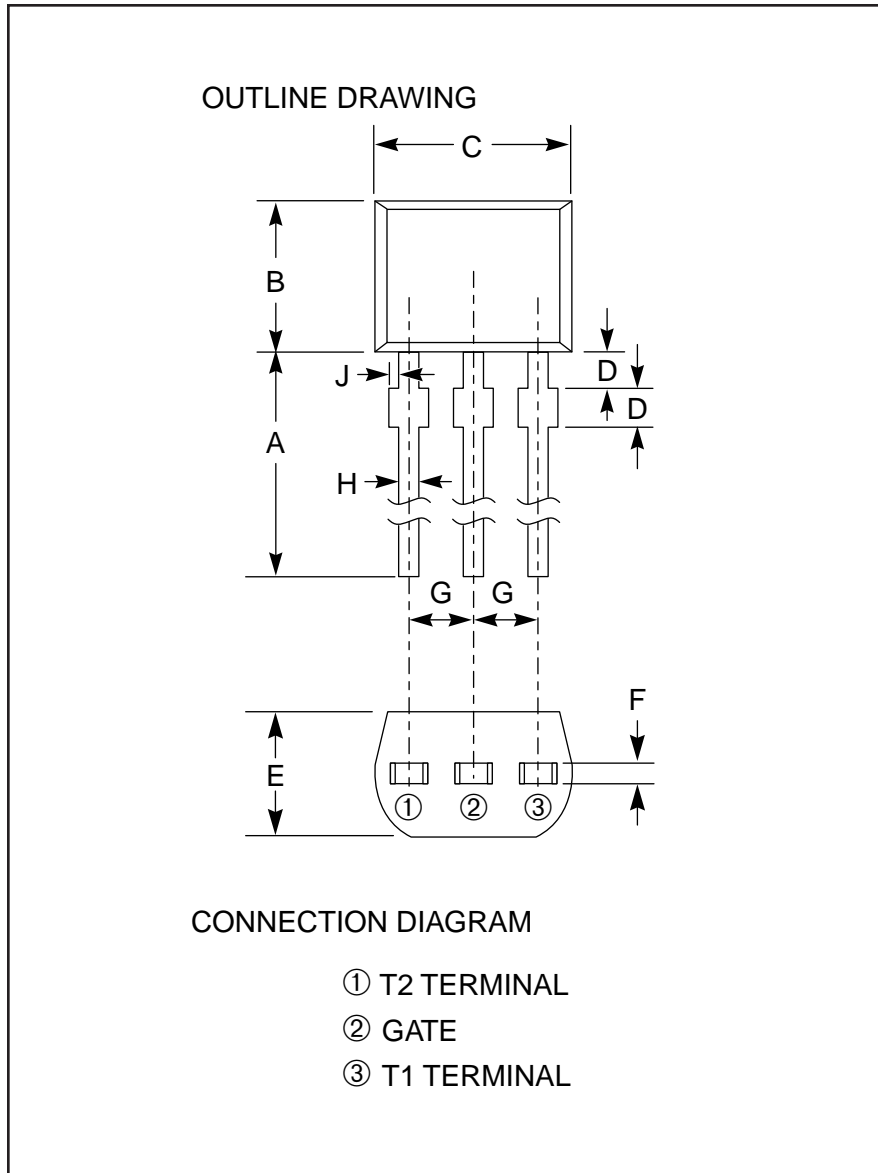


Silicon Bilateral Switch



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

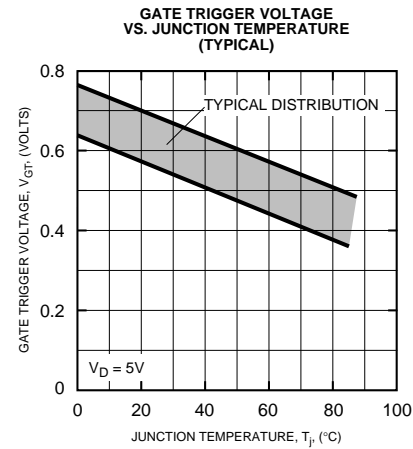
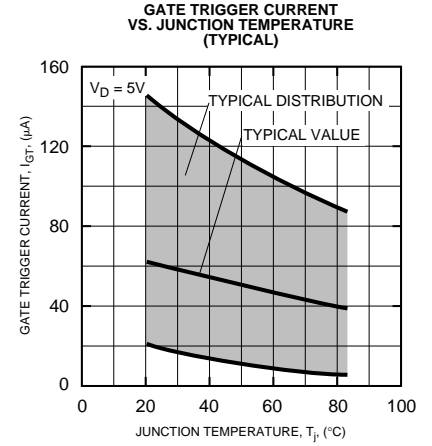
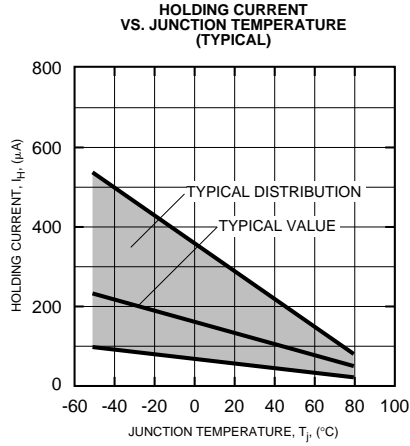
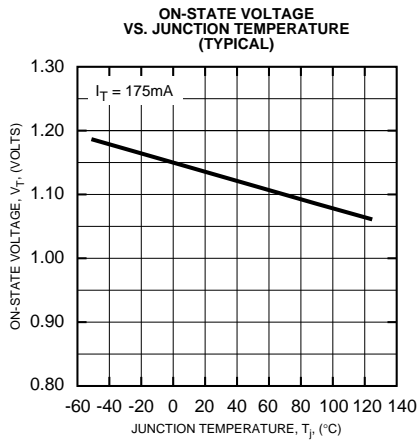
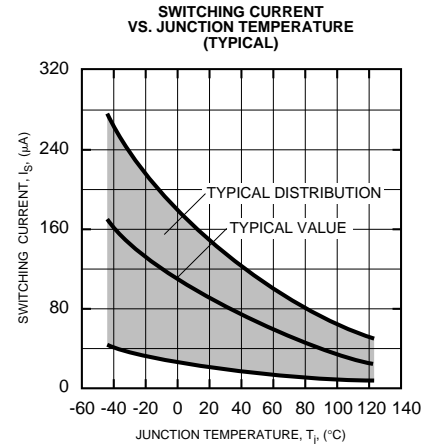
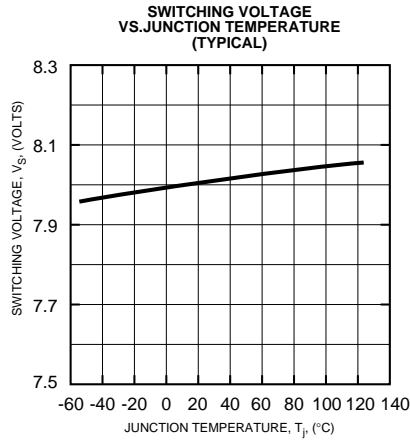
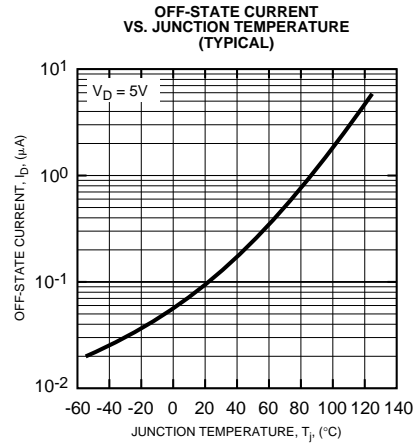
Absolute Maximum Ratings, $T_a = 25^\circ\text{C}$ unless otherwise specified

Ratings	Symbol	BS08D	Units
DC Forward Anode Current	I_T	175	mA
Repetitive Peak Forward Current (1% Duty Cycle, 10 μ s Pulsewidth), $T_a = 100^\circ\text{C}$	–	1.0	Amperes
Non-repetitive Peak Forward Current (10 μ 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	μA
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	μA
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	μA
		$V_D = 5\text{V}, T_a = 85^\circ\text{C}$	–	–	10	μA
Temperature Coefficient of Switching Voltage	–	$T_a = -55$ to 85°C	–	± 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	μA
Gate Non-trigger Voltage	V_{GD}	$V_D = 5\text{V}, T_a = 85^\circ\text{C}$	0.2	–	–	Volts

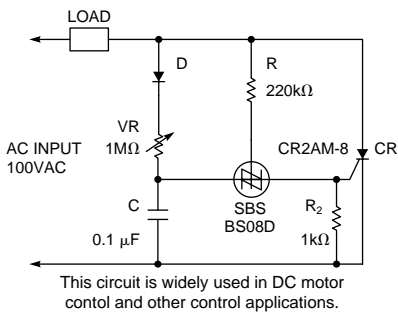
BS08D
Silicon Bilateral Switch



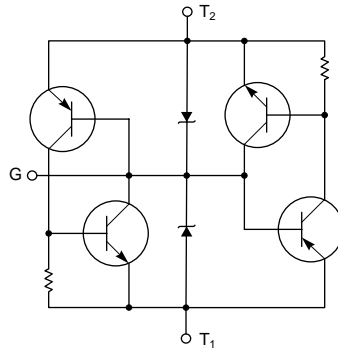
BS08D
Silicon Bilateral Switch

APPLICATION EXAMPLES

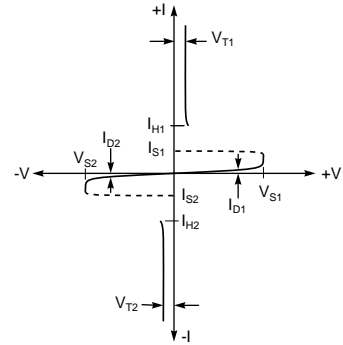
THYRISTOR TRIGGER CIRCUIT



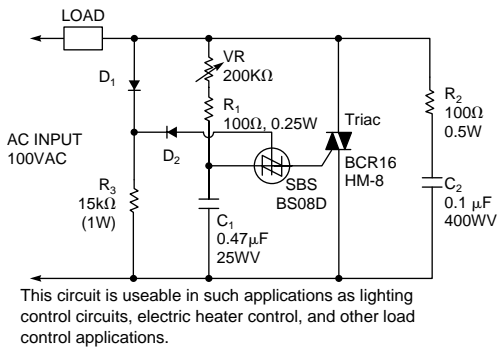
EQUIVALENT CIRCUIT



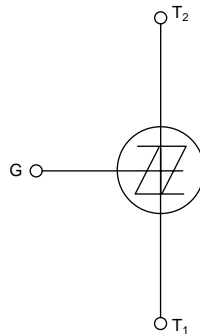
STATIC CHARACTERISTICS



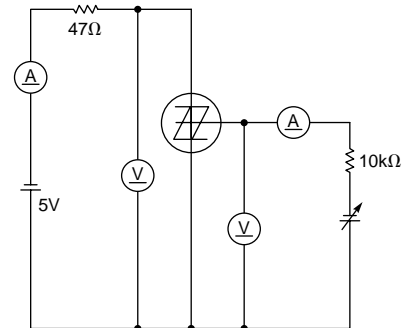
TRIAC TRIGGER CIRCUIT

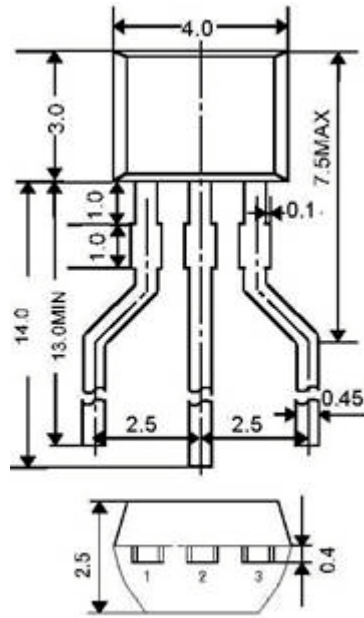


CIRCUIT SYMBOL



GATE CHARACTERISTICS MEASUREMENT CIRCUIT





MICRO(TO-92S) type taping specification

1. Taping specifications

All models of MICRO(TO-92S) package product is wrapped to tape.
 As for the taping, radial tape is used. The tape shall be folded and then packaged in a box
 For more information about taping dimensions, please refer to figure 1. tape shape and dimensions.
 About specifications of accordion type and dimensions of box , please refer to figure 2.

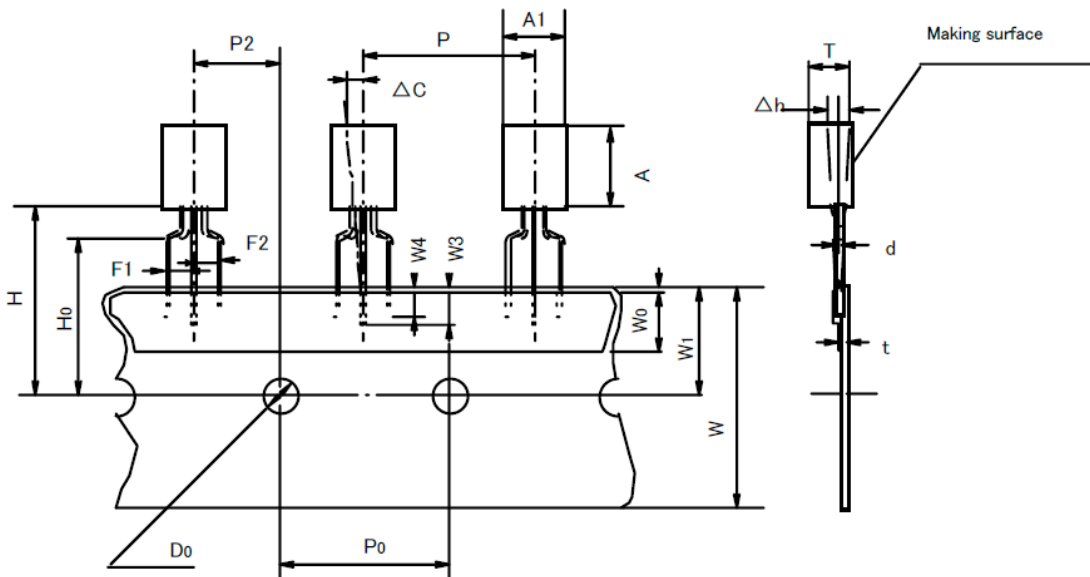
It is not coped about the rose product now.

2. Ordering unit

It is wrapped 2,500 by one reel.

Please inquire for the other packing specifications.

figure 1. tape shape and dimensions.

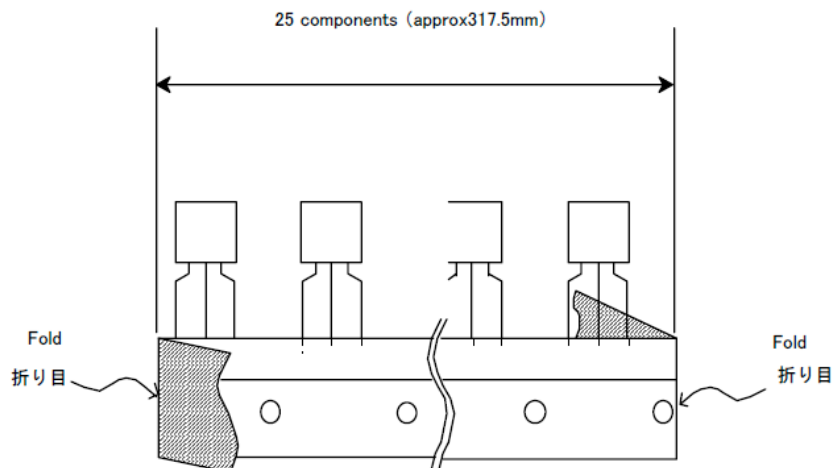


Unit : mm

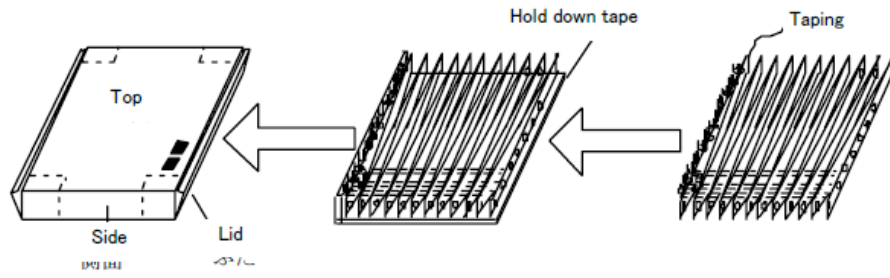
Item	Symbol	Dimensions Angle
Component width	A1	4.0 ^{+0.1} / _{-0.1}
Component height	A	3.0 ^{+0.1} / _{-0.1}
Component thickness	T	2.5 ^{+0.1} / _{-0.1}
Lead diameter	d	0.4 ^{+0.05} / _{-0.05}
Inserted lead length(1)	W3	2.5 MIN
Inserted lead length (2)	W4	2.0 MIN
Component pitch	P	12.7 ^{+1.0} / _{-1.0}
Sprocket hole pitch	P0	12.7 ^{+0.3} / _{-0.3}
Sprocket hole location(1)	P2	6.35 ^{+0.5} / _{-0.5}
Lead spacing	F1, F2	2.5 ^{+0.4} / _{-0.4}
Component inclination (1)	Δh	0 ^{+1.0} / _{-1.0}
Carrier tape width	W	18.0 ^{+1.0} / _{-0.5}
Hold-down tape width	W0	6.0 ^{+0.5} / _{-0.5}
Sprocket hole location (2)	W1	9.0 ^{+0.75} / _{-0.50}
Tape misalignment	W2	0.5 MAX
Component package bottom height	H	19.5 MIN
Lead clinch height	H0	16.0 ^{+0.5} / _{-0.5}
Sprocket hole diameter	D0	4.0 ^{+0.2} / _{-0.2}
Component inclination (2)	ΔC	0 ^{+1.0} / _{-1.0}
Lead form	$\Delta h'$	0 ^{+1.0} / _{-1.0}
Tape thickness	t	0.7 ^{+0.2} / _{-0.2}

figure 2. Specifications of accordion type and dimensions of box

(1) Specifications of accordion type



After lead-taping is completed, the tape shall be folded and then packaged in a box, as shown below



(2) Dimensions of box

