〈TRIGGER ELEMENT〉

BS08E

TRIGGER APPLICATION
PLANE MOUNTED TYPE(SC-59 OUTLINE)

DESCRIPTION

BS08E is a silicon planer transistor, bilateral switching integrated circuit. It is suitable for trigger application of thyristor.

FEATURE

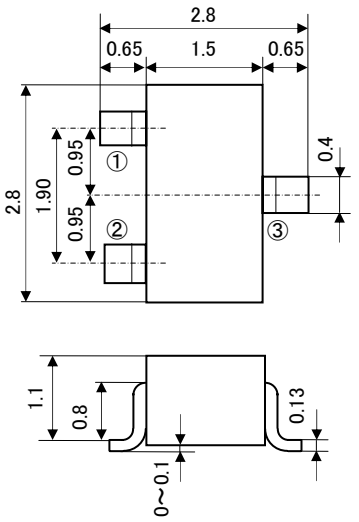
- Low switching voltage Vs=7～9V
- Good switching voltage temperature coefficient 0.01%/℃
- With gate electrode, it is easy for control and synchronism of switching.

APPLICATION

Trigger circuit of thyristor・triac oscillator, timer.

OUTLINEDRAWING

Unit:mm



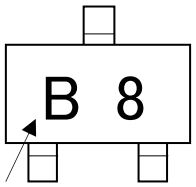
TERMINAL CONNECTER
①:T2 TERMINAL
②:T1 TERMINAL
③:GATE

JEITA:SC-59
JEDEC:Similar to TO-236

MAXIMUM RATINGS(Ta=25℃)

Parameter	Symbol	Conditions	Ratings	Unit
DC on current	IT	Ta=25℃	175	mA
Repetitive peak on-current	–	1% duty, tw=10μs, Ta=100℃	1	A
Not repetitive peak on-current	–	tw=10μs, Ta=25℃	2	A
On-state dissipation	P	Ta=25℃	150	mW
DC gate current	IG	–	5	mA
Junction temperature	Tj	–	+150	℃
Storage temperature	Tstg	–	−55～+150	℃

MARKING



TYPE NAME

ELECTRICAL CHARACTERISTICS(Ta=25℃)

Parameter	Symbol	Test conditions	Limits			Uniit
			Min	Typ	Max	
Switching voltage	VS	Ta=25℃	7	8	9	V
Switching current	IS	Ta=25℃	–	–	200	μA
Switching voltage difference	| VS1−VS2 |	Ta=25℃	–	–	0.5	V
Switching current difference	| IS1−IS2 |	Ta=25℃	–	–	100	μA
Holding current	IH	Ta=25℃	–	–	1.5	mA
Off current	ID	VD=5V, Ta=25℃	–	–	1.0	μA
		VD=5V, Ta=85℃	–	–	10	
Switching voltage temperature coefficient	–	Ta=−55℃～+85℃	–	±0.01	–	%/℃
On voltage	VT	IT=175mA, Ta=25℃	–	–	1.4	V
Gate trigger current	IGT	VD=5V, Ta=25℃	10	–	200	μA
Gate not trigger voltage	VGD	VD=5V, Ta=85℃	0.2	–	–	V

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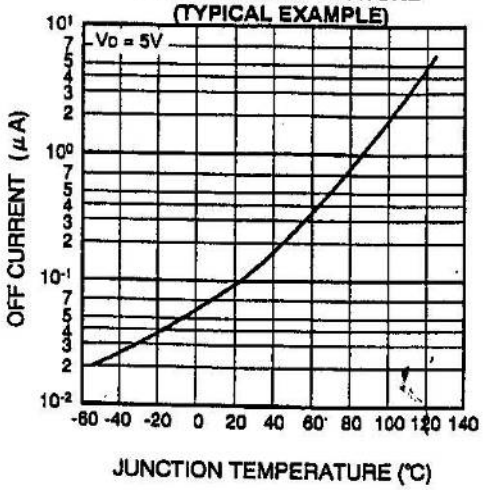
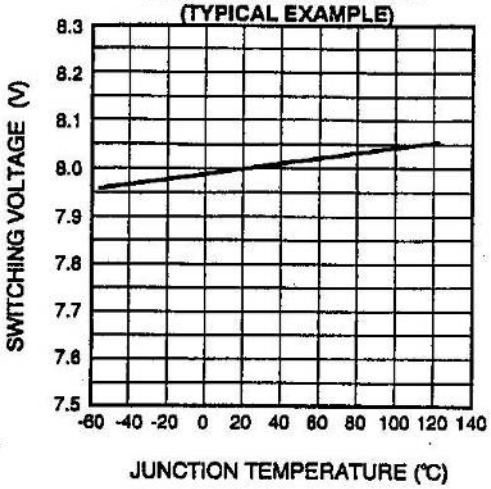
PERFORMANCE CURVES

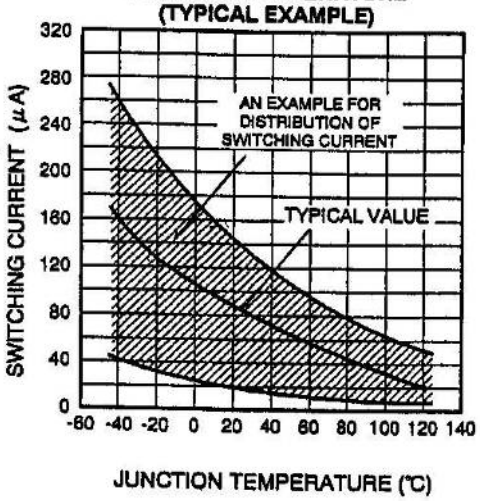
OFF CURRENT VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



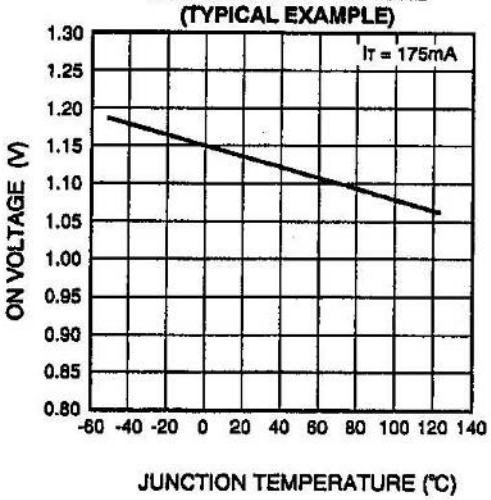
SWITCHING VOLTAGE VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



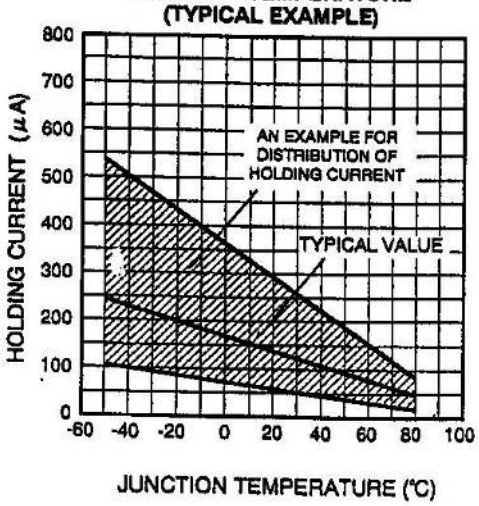
SWITCHING CURRENT VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



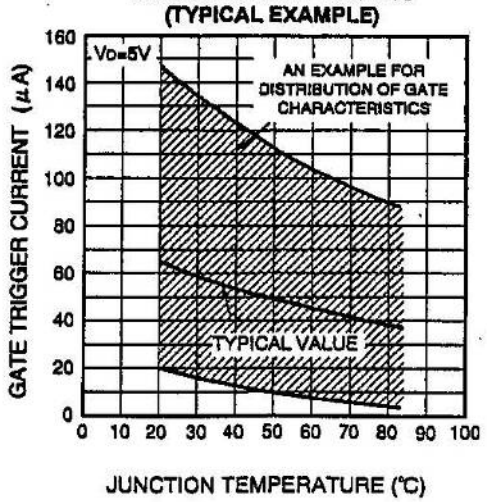
ON VOLTAGE VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



HOLDING CURRENT VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



GATE TRIGGER CURRENT VS.
JUNCTION TEMPERATURE
(TYPICAL EXAMPLE)



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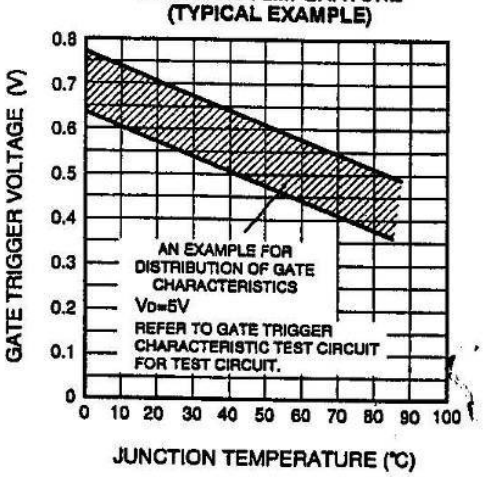
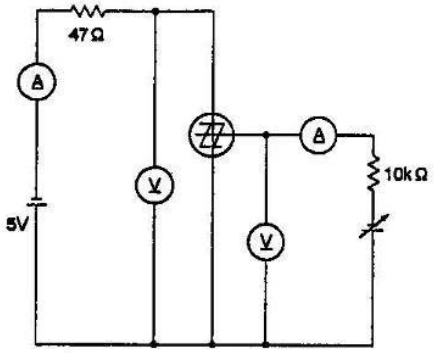
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL EXAMPLE)

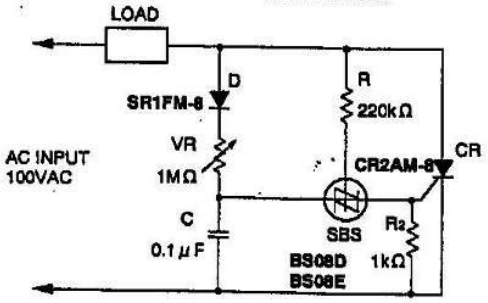


GATE TRIGGER CHARACTERISTIC TEST CIRCUIT



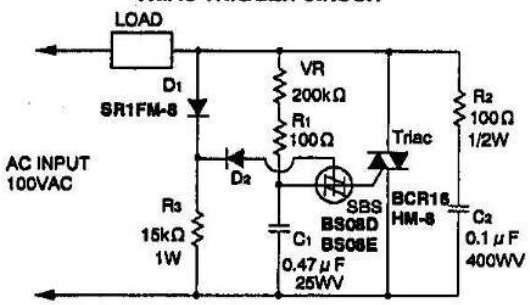
APPLICATION EXAMPLE

THYRISTOR TRIGGER CIRCUIT



The above circuit is a thyristor phase control circuit making use of an . In this circuit, using the SBS gate, the residual charge on C is reset, reducing the hysteresis characteristics. Therefore, over the range of the variable resistor, phase control (in the range 5 to 175°C) is possible, making this circuit widely useful in DC motor control and other control applications.

TRIAC TRIGGER CIRCUIT



The above circuit is a triac phase control circuit making use of an SBS. In this circuit, an SBS gate is used to reduce the hysteresis characteristics. Thus, by using the variable resistance, phase control is possible over the wide range of 10 to 160 °C. Therefore, this circuit is widely usable in such applications as lighting control circuits, electric heater control, and other load control applications.

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