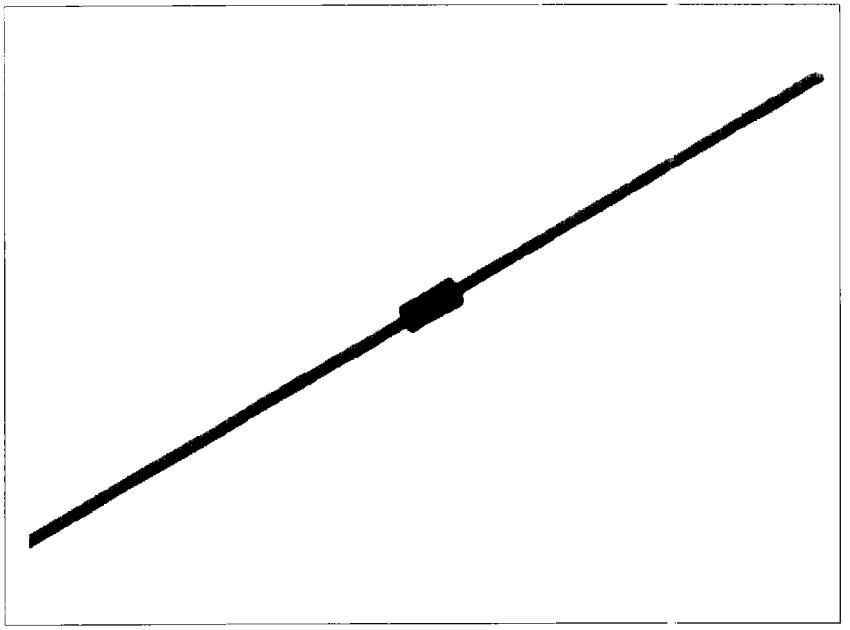
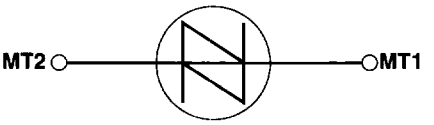


TECCOR ELECTRONICS, INC.
A SIEBE COMPANY



BILATERAL SILICON TRIGGER SWITCH (STS)

HS Series

General Description

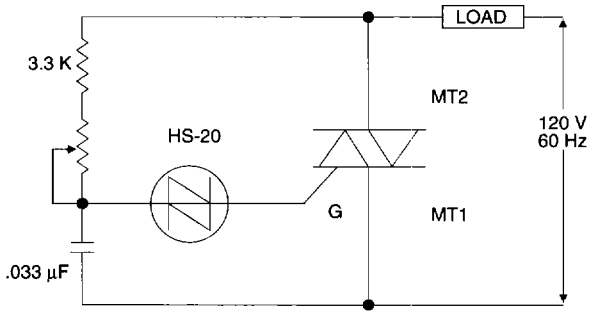
The new "HS" series of bilateral Silicon Trigger Switch (STS) offers low breakover voltages, in economical DO-35 package, and glass-passivated junctions for reliability.

The "HS" devices switch from the blocking mode to full conduction when the applied voltage, of either polarity, exceeds the Breakover Voltage (V_{BO}). Combined with a small capacitor, the STS will provide the necessary firing current for SCR or triac devices with its FULL BREAKBACK characteristic.

The Teccor "HS" triggers are not only bilateral but are also very symmetrical and are ideal for either full-wave or bidirectional Thyristor controls.

For applications which require very low triggering voltages, the HS-10 STS, with a triggering voltage (V_{BO}) of 8-10 Volts, will allow even a 24VAC line to be phase controlled.

Typical STS-Triac Full-Wave Phase Control Circuit using lower Voltage Trigger



STANDARD VARIABLE OUTPUT CONTROL
(Light, Heat, Motor Speed)

Silicon Trigger Switch (STS) Specifications

- **Maximum Ratings, Absolute-Maximum Values**

Maximum Trigger Firing Capacitance1.0µF
Device Dissipation
(at T_A = -40° to + 40°C)250mW
Derate Above +40°C3.6mW/°C

- **Temperature Ranges**

Storage-40°C to + 125°C
Operating (Junction)-40°C to + 100°C

- **Thermal Resistance**

Junction to Ambient ($R_{\theta JA}$) = 278°C/W
Junction to Lead ($R_{\theta JL}$) = 100°C/W
based on maximum lead temperature of 85°C at ≤250mW

Features

- **Low-switching voltage**
- **Economical DO-35 package**
- **Low on-state voltage**
- **Low off-state current**

Electrical Specifications

ELECTRICAL SPECIFICATIONS—PART NUMBERS–**HS10** AND **HS20**

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
P_D	Power Dissipation			0.25	W
I_F	DC Forward Current			0.15	A
I_{FM} (REP)	Repetitive Peak Forward Current (1% DUTY CYCLE, 10 ms Pulse Width, TA = 25°C)			3	A
I_{FM} (NON-REP)	Non-Repetitive Forward Current (Peak One Cycle, TA = 25°C, 60HZ)			1	A
V_{S1} or V_{S2}	Switching Voltage HS 10 HS 20	 8 18	 10 21	 12 24	VDC
I_{S1} or I_{S2}	Switching Current		100	400	µADC
V_{S1}-V_{S2}	Differential Switching Voltage			2	VDC
I_H	Holding Current (1)			0.5	mADC
I_B	Off-State Blocking Current (VF = 6VDC, TA = 25°C) (VF = 6VDC, TA = 80°C)			 1 10	µADC
V_F	Forward On-State Voltage (IF = 10mA)			1.8	VDC
V_O	Peak Output Voltage (CT = 0.1µF, R_L = 20Ω, FIG. 5)	3.5	5		V_{PK}
T_{COEF}	Temperature Coefficient Of Switching Current		.045		%/°C
t_{on}	Turn-On Time (2)		1		µSEC

GENERAL NOTES

- Lead solder temperature is maximum of +230°C for 10 seconds maximum; ≥ 1/16" (1.59mm) from case
- See "Package Dimensions" section of this catalog on Page 95.

NOTES TO ELECTRICAL SPECIFICATIONS

(1) Initial on-state current ≥ 1mA

(2) Turn-on time is measured from the time V_S is achieved to the time when main terminal voltage drops to within 90% of the difference between V_S and V_F

Figure 1 — V-I Characteristics

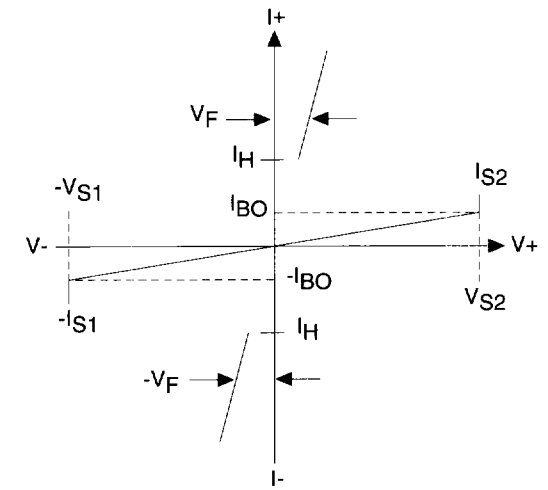


Figure 2 — Normalized V_{BO} Change vs. Junction Temperature

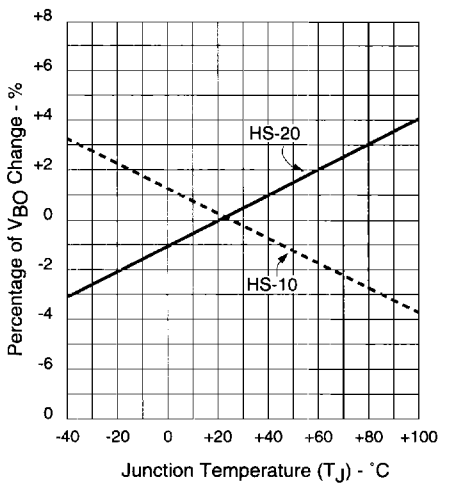


Figure 3 — Repetitive Peak On-State Current vs Pulse Duration

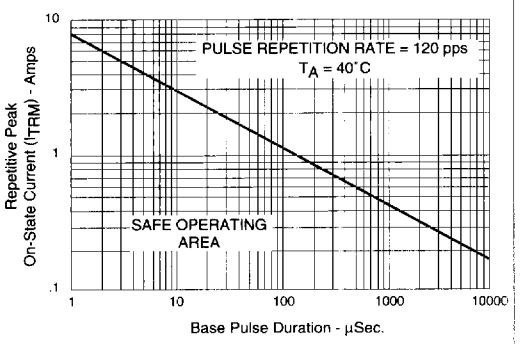


Figure 4 — Normalized DC Holding Current vs Junction Temperature

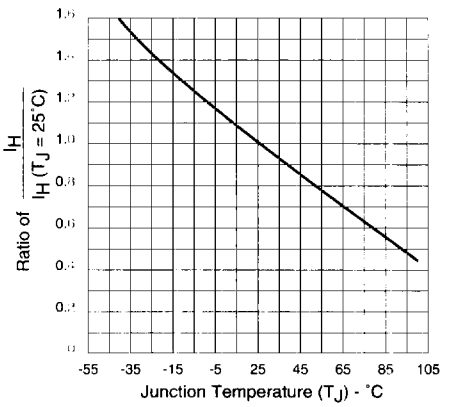


Figure 5 — Circuit Used to Measure V_O Characteristic