



# General Semiconductor Industries, Inc.

SQUARE D COMPANY

## BIDIRECTIONAL SURGE SUPPRESSORS

GHV-2  
THRU  
GHV-16

T-11-23

CASE 19

### MAXIMUM RATINGS

- Steady State Power: 1 Watt at 50° C.
- $t_{clamping}$  (0 volts to BV min): Less than  $1 \times 10^{-8}$  second (theoretical)
- Operating and Storage temperatures: -65° to +150° C
- Surge: 30 Amps, 8.4 msec  
100 Amps, 1.0 msec  
(exponential decay to 50%)

### MECHANICAL CHARACTERISTICS

- Molded case
- Solderable leads
- Body marked with Logo and type number

### APPLICATION

The GHV series devices are silicon transient voltage suppressors designed for protection against large voltage transients on signal lines. They are low capacitance, low noise devices which can be used directly across the input of analog and digital circuitry with minimum signal loss.

Their small size and high surge current capability make them ideal suppressors for telephone and CATV repeaters, replacing typical device series "strings" which consume much needed space. The device has been proven effective in lightning environments.

### DESCRIPTION

The GHV series products combines the technology of forward biased P-N junction device, stacked to provide

### DESCRIPTION CONT'D

symmetrical voltage characteristics of a non-biased resistor. An additional feature of this method of manufactured low voltage protection, is the reduction of capacitance for low voltage signal line protection.

FIGURE 1-Voltage Current Characteristic Curves

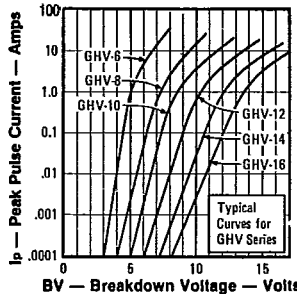
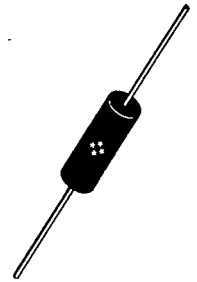
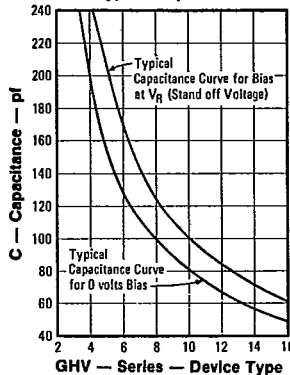
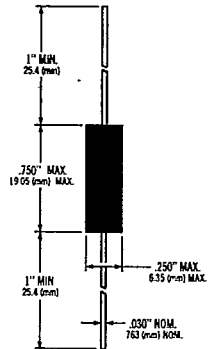


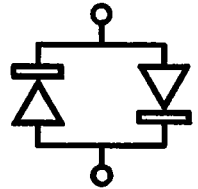
FIGURE 2-Typical Capacitance Curves



### CASE OUTLINE



### SCHEMATIC



### ELECTRICAL CHARACTERISTICS @ 25° C (Both Polarities)

GS PART NUMBER	BREAKDOWN VOLTAGE @ 10 mA BV±5%	STAND-OFF VOLTAGE VR	MAXIMUM LEAKAGE CURRENT @ VR	MAXIMUM CAPACITANCE @ 0 V, 1MHz	TYPICAL TEMP. COEFF. OF BV
	VOLTS	VOLTS	μA	pF	mv/°C
GHV-2	1.33	.8	10	517	-4
GHV-3	2.0	1.2	10	319	-6
GHV-4	2.7	1.6	10	259	-8
GHV-5	3.3	2.0	10	191	-10
GHV-6	4.0	2.4	10	159	-12
GHV-7	4.7	2.8	10	140	-14
GHV-8	5.4	3.2	10	130	-16
GHV-9	6.0	3.6	10	114	-18
GHV-10	6.7	4.0	10	102	-20
GHV-11	7.3	4.4	10	93	-22
GHV-12	8.0	4.8	10	86	-24
GHV-13	8.7	5.2	10	79	-26
GHV-14	9.4	5.6	10	74	-28
GHV-15	10.0	6.0	10	67	-30
GHV-16	10.7	6.4	10	62	-32