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GENERAL SEMICONDUCTOR INDUSTRIES, INC.

SURGE SUPPRESSORS GHV-2 THRU GHV-16

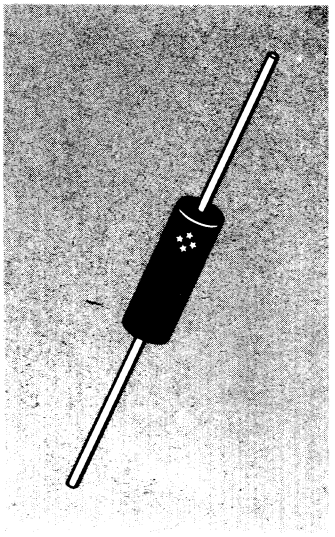
LOW VOLTAGE SURGE SUPRESSOR (Bipolar)

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. Noise is typically 30db below zero.

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

MAXIMUM RATINGS

- Surge: 30 amps, 8.4 msec
  100 amps, 1.0 msec.
  (capacitance, decay to 50%)
- Operating and Storage Temperature:
  −65°C to +150°C.
- $t_{clamping}$ (0 volts to BV min.):
  Less than 1 x 10^{-8} seconds
- Steady State Power: 1 watt @ 50°C.



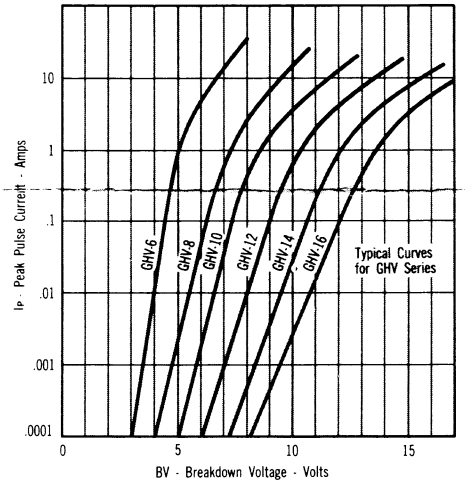


FIGURE 1 - Voltage Current Characteristic Curves

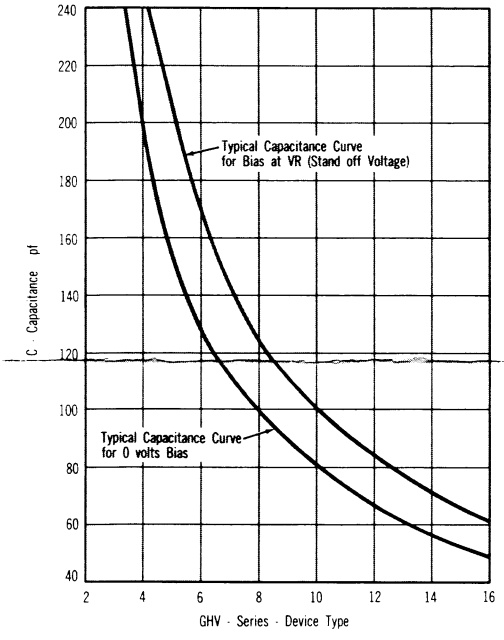
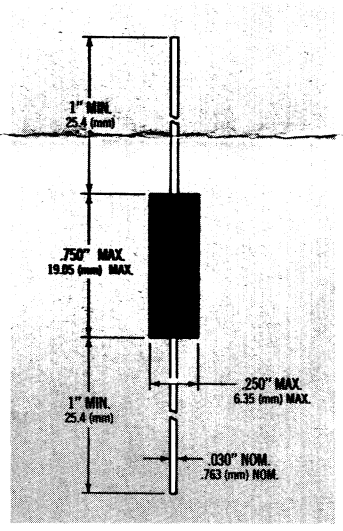


FIGURE 2 - Typical Capacitance Curves for GHV Series Surge Suppressors

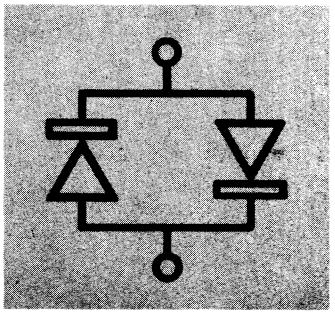


ELECTRICAL CHARACTERISTICS @ 25°C (Both Polarities)

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

MECHANICAL CHARACTERISTICS

Case: Molded
Leads: Solderable



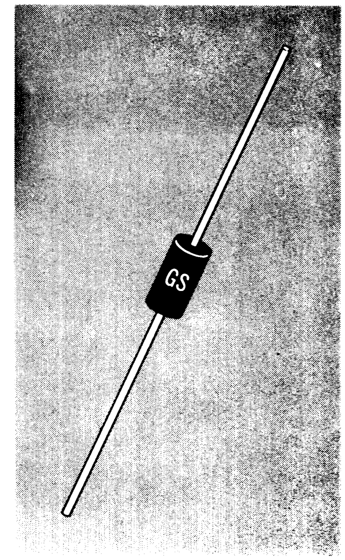
GENERAL SEMICONDUCTOR INDUSTRIES, INC.

VARISTOR GSV SERIES

These varistors consists of two matched silicon junctions connected in parallel and opposite in polarity. They are designed to replace copper oxide varistors in telephone equipment and for numerous applications ranging from fractional voltage regulators, negative temperature coefficient resistors, signal limiters and expanders and meter protection. The GSV varistors are packaged in a plastic encapsulated material. Higher voltage devices are also available from the factory.

MAXIMUM RATINGS

- Steady State Power: 1 watt @ 50°C.
- Operating and Storage Temperature: −65°C to +175°C.
- Surge: 30 amps, 8.4 msec @ 25°C. 100 amps, 1.0 msec @ 25°C.
- $t_{clamping}$ (0 volts to BV min.): Less than 1 x 10^{-8} seconds



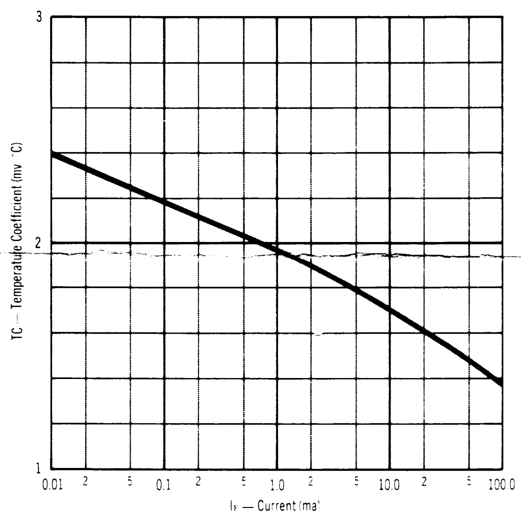


FIGURE I — Ambient Temperature Coefficient of Voltage vs. Varistor Current

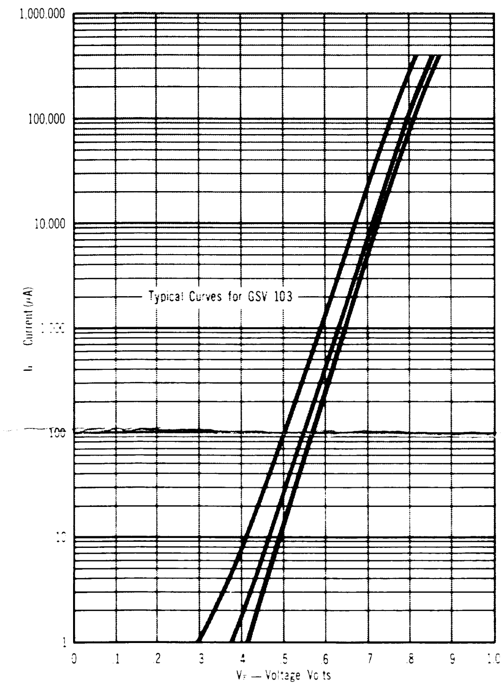
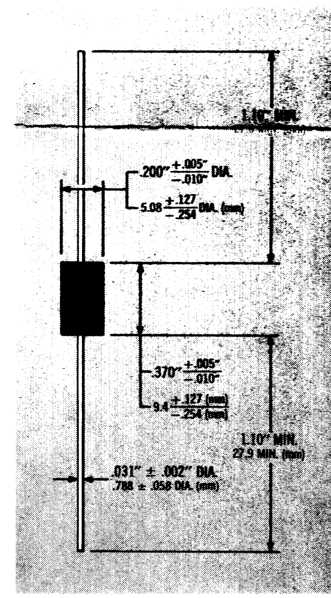
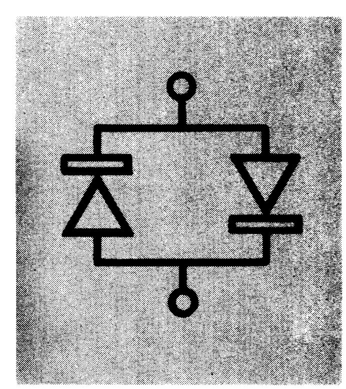


FIGURE II — Range Curve, Current-Voltage for GSV Varistor





ELECTRICAL CHARACTERISTICS @ 25°C (BOTH POLARITIES)

TYPE	SYMBOL	CONDITIONS	LIMITS min.	LIMITS max.	UNITS
GSV101	V_F	10 μ Amps	.35	.50	Volts
	V_F	100 ma Amps	.74	.85	Volts
GSV102	V_F	100 ma Amps	.74	.85	Volts
	I_F	.2 volts		.1	μ Amps
GSV103	V_F	1 μ Amps	.30	.45	Volts
	V_F	10 μ Amps	.40	.50	Volts
	V_F	100 μ Amps	.48	.58	Volts
	V_F	1 ma Amps	.56	.66	Volts
	V_F	10 ma Amps	.65	.74	Volts
	V_F	100 ma Amps	.75	.82	Volts

GENERAL SEMICONDUCTOR INDUSTRIES, INC. 2001 West Tenth Place, Tempe, Arizona 85281 • 602-968-3101 • TWX910–950-1942
Mailing Address: P.O. Box 3078

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