

# Glass Ceramic ESD Suppressor – GESD Series

Operating Temp. :



Max. DC Working Voltage	5.5V	9V	15V
Operating Temp.	-55°C~85°C	-55°C~125°C.	-55°C~105°C

## FEATURES

- Ultra low capacitance, suitable for ultra high speed lines
- Extremely low leakage current (nA scale)
- Excellent solderability (Ni, Sn plating)
- Glass material packaging, good resistance to high temperature

## APPLICATIONS

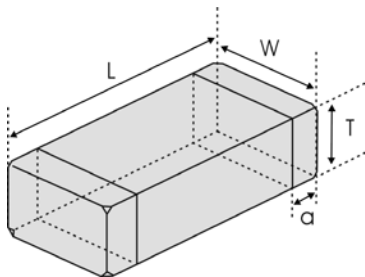
- ESD protection for ultra high speed lines, such as USB3.0 I/F, HDMI I/F, etc.
- ESD protection of mobile phone antenna

## PRODUCT IDENTIFICATION

<u>GESD</u> ①	<u>1005</u> ②	<u>H</u> ③	<u>090</u> ④	<u>CR10</u> ⑤	<u>G</u> ⑥	<u>P</u> ⑦	<u>T</u> ⑧
①	Type		② External Dimensions (LxW) (mm)		③ Feature Code		
GESD	Glass Ceramic ESD Suppressor		0603 [0201]	0.6x0.3	H For High Speed		
			1005 [0402]	1.0x0.5			
			1608 [0603]	1.6x0.8			
④	Max. Continuous Working Voltage		⑤ Capacitance @1MHz		⑥ Tolerance of Capacitance		
Example	Nominal Value		Example	Nominal Value	G Maximum		
5R5	5.5V		CR10	0.10pF			
090	9V						
150	15V						
⑦	Terminal Code		⑧ Packing				
P	Ni, Sn Plating		B	Bulk Package			
			T	Tape & Reel			

## SHAPE AND DIMENSIONS

Unit: mm [inch]



Type	L	W	T	a
GESD0603 [0201]	0.6±0.05 [.024±.002]	0.3±0.05 [.012±.002]	0.3±0.05 [.012±.002]	0.15±0.05 [.006±.002]
GESD1005 [0402]	1.0±0.15 [.039±.006]	0.5±0.15 [.020±.006]	0.5±0.15 [.020±.006]	0.25±0.10 [.010±.004]
GESD1608 [0603]	1.6±0.15 [.063±.006]	0.8±0.15 [.031±.006]	0.8±0.15 [.031±.006]	0.3±0.2 [.012±.008]

## SPECIFICATIONS

### GESD0603H TYPE

Part Number	Max. DC Working Voltage	Trigger Voltage	Max. Clamping Voltage	Cut-off Frequency	Typical Capacitance	ESD Capability (IEC61000-4-2)
Test Condition	DC	ESD	ESD	@-0.3dB	@1V <sub>rms</sub> , 1MHz	Direct Discharge
Units	Volts	Volts	Volts	GHz	pF	
Symbol	V <sub>WDC</sub>	V <sub>T</sub> <sup>*1</sup>	V <sub>C</sub> <sup>*2</sup>	f <sub>0</sub>	C	
GESD0603H5R5CR10GPT	5.5	100~150	20	7.0	<0.10	LEVEL-4 8kV, Over 1000 times
GESD0603H090CR10GPT	9	100~250	25	7.0	<0.10	
GESD0603H150CR10GPT	15	100~250	25	7.0	<0.10	

### GESD1005H TYPE

Part Number	Max. DC Working Voltage	Trigger Voltage	Max. Clamping Voltage	Cut-off Frequency	Typical Capacitance	ESD Capability (IEC61000-4-2)
Test Condition	DC	ESD	ESD	@-0.3dB	@1V <sub>rms</sub> , 1MHz	Direct Discharge
Units	Volts	Volts	Volts	GHz	pF	
Symbol	V <sub>WDC</sub>	V <sub>T</sub> <sup>*1</sup>	V <sub>C</sub> <sup>*2</sup>	f <sub>0</sub>	C	
GESD1005H5R5CR10GPT	5.5	100~150	20	7.0	<0.10	LEVEL-4 8kV, Over 1000 times
GESD1005H090CR10GPT	9	100~250	25	7.0	<0.10	
GESD1005H150CR10GPT	15	100~250	25	7.0	<0.10	

### GESD1608H TYPE

Part Number	Max. DC Working Voltage	Trigger Voltage	Max. Clamping Voltage	Cut-off Frequency	Typical Capacitance	ESD Capability (IEC61000-4-2)
Test Condition	DC	ESD	ESD	@-0.3dB	@1V <sub>rms</sub> , 1MHz	Direct Discharge
Units	Volts	Volts	Volts	GHz	pF	
Symbol	V <sub>WDC</sub>	V <sub>T</sub> <sup>*1</sup>	V <sub>C</sub> <sup>*2</sup>	f <sub>0</sub>	C	
GESD1608H5R5CR10GPT	5.5	100~150	20	7.0	<0.10	LEVEL-4 8kV, Over 1000 times
GESD1608H090CR10GPT	9	100~250	25	7.0	<0.10	
GESD1608H150CR10GPT	15	100~250	25	7.0	<0.10	

※V<sub>DC</sub>: Max DC working voltage of varistor must exceed or equal to 1.5 times that of the application circuit voltage (V<sub>n</sub>), V<sub>DC</sub> ≥ 1.5 V<sub>n</sub>.

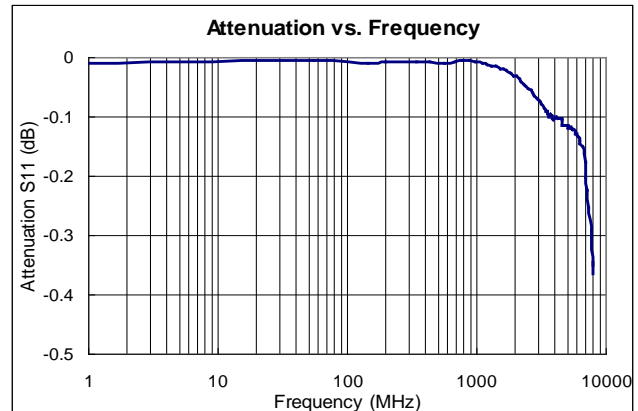
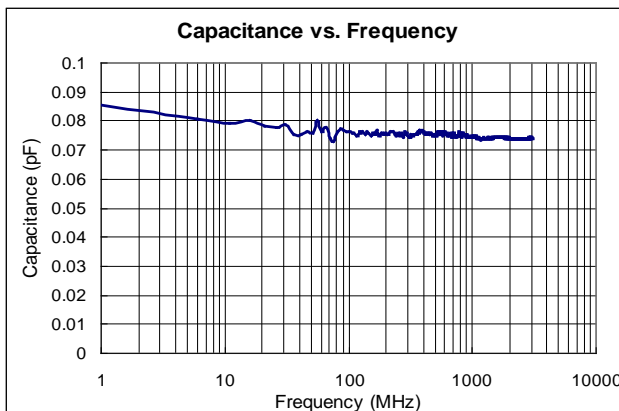
※\*1: V<sub>T</sub>, The breakdown voltage across the GESD according IEC61000-4-2 8kV contact discharge.

※\*2: V<sub>c</sub>, Maximum peak voltage across the GESD measured at 30ns after initiation of pulse on IEC61000-4-2 8kV.

And products with other electrical characteristics can be provided upon customer's request, please contact your local sales.

## TYPICAL ELECTRICAL CHARACTERISTICS

Ultra low capacitance type: GESD0603H/GESD1005H/GESD1608H series, C=0.085pF



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Ultra low capacitance type: GESD0603H/GESD1005H/GESD1608H series, C=0.085pF

