

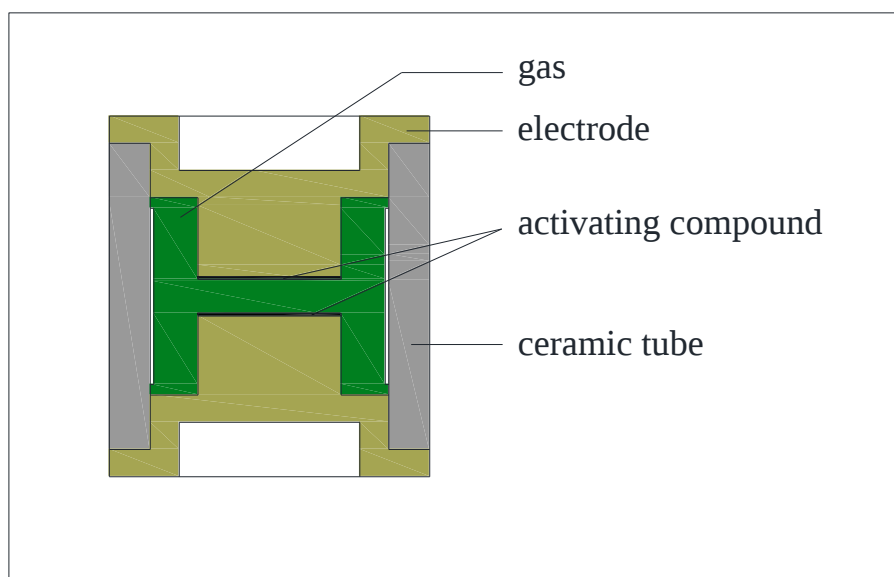
Gas-Discharge components

Gas Discharge Tube are designed to limit voltage surges on balanced or unbalanced communications circuits and on DC to 420 Hz power circuits.

Although telephone circuits are a major application for gas tube surge arrestors, this guide will also provide useful information for other surge applications such as AC circuits.



GDT Protectors Structure

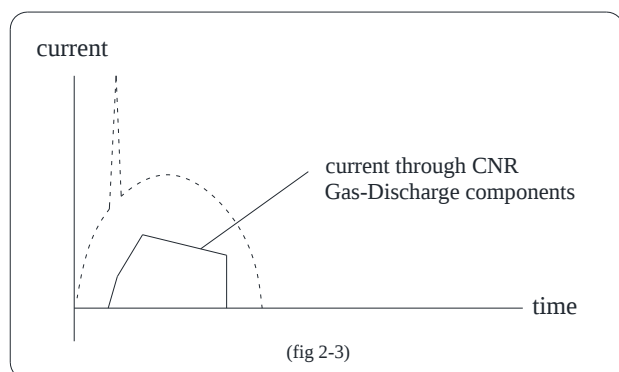
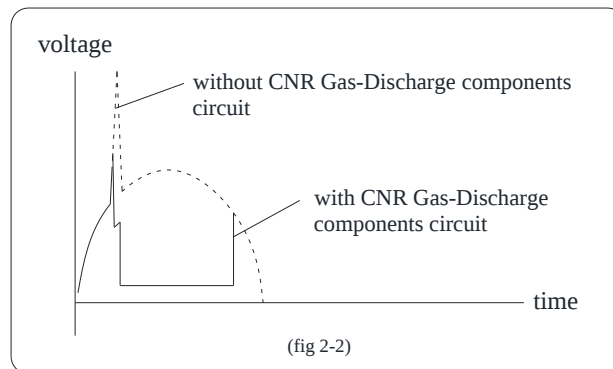
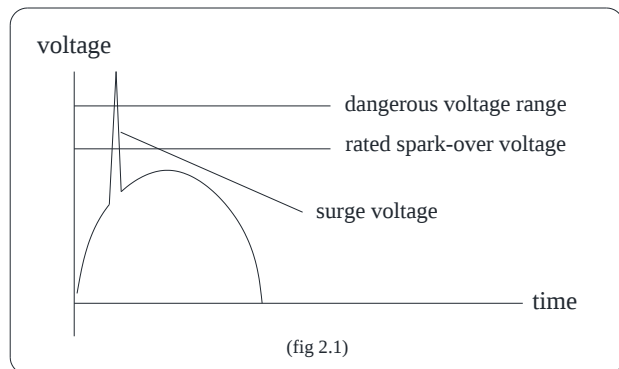


Agency Approvals

CNR GDT CG series : UL 497B (Protector for data communication and fire alarm circuit), file E220380
or UL 1449 4th (Surge-protective Devices), file E316325

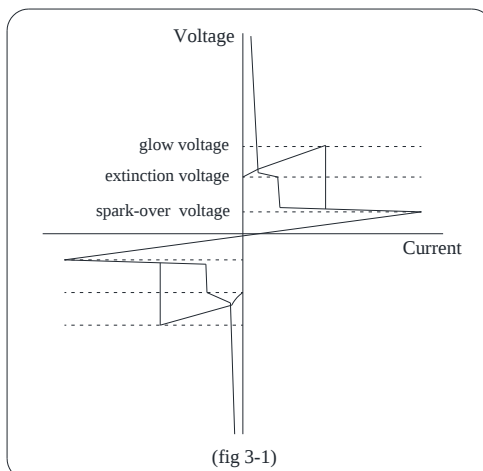
Protection principle of Gas-Discharge components

Generally, Gas-Discharge components work whenever a surge (voltage) exceeds the rated-working-voltage of Gas-Discharge components. As the arc with high current (because of low impedance of Gas-Discharge components) is ignited, Gas-Discharge components can prevent a further rise of surge voltage. (Approximately some 10 volts)



Operating mode of Gas-Discharge components

A simplified Gas-Discharge components could be compared with a symmetrical switch (with very low capacitance) whose resistance may change from several G-ohms (normal operation) to <1 ohm (ignited by surge voltage). Gas-Discharge components will automatically return to its original state (high impedance) as the surge has subsided.



CNR GDT Features & Applications

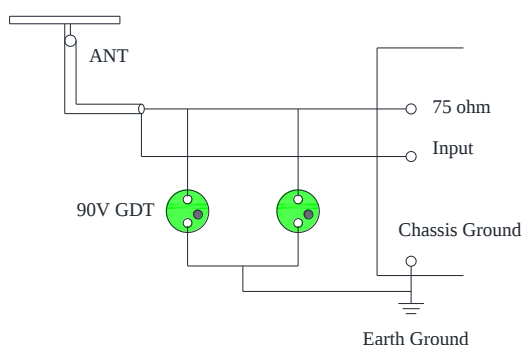
Features

- Fast response
- Low capacitance
- Good withstanding ability to surge
- Symmetry in both direction

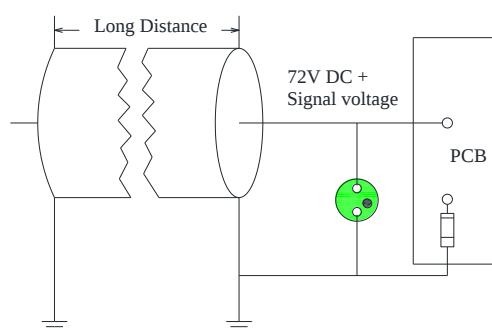
Applications

- Antenna Protection
- Cable Protection
- Motor (two wire system) Protection
- AC Line Isolation Application
- Telephone Line Protection

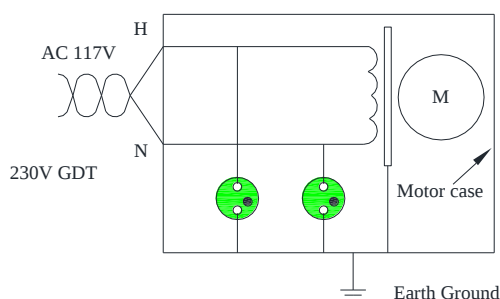
GDT in Antenna Protection



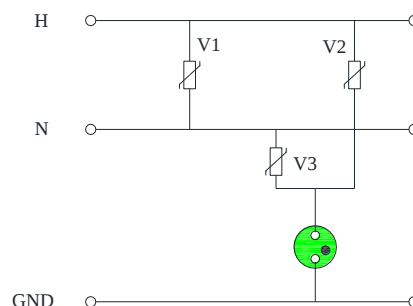
GDT in Cable Protection



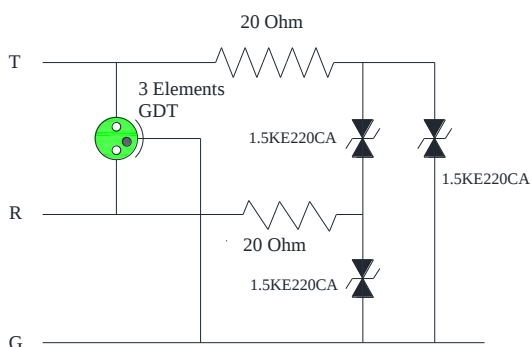
Motor (two wire system) Protection from Lightning



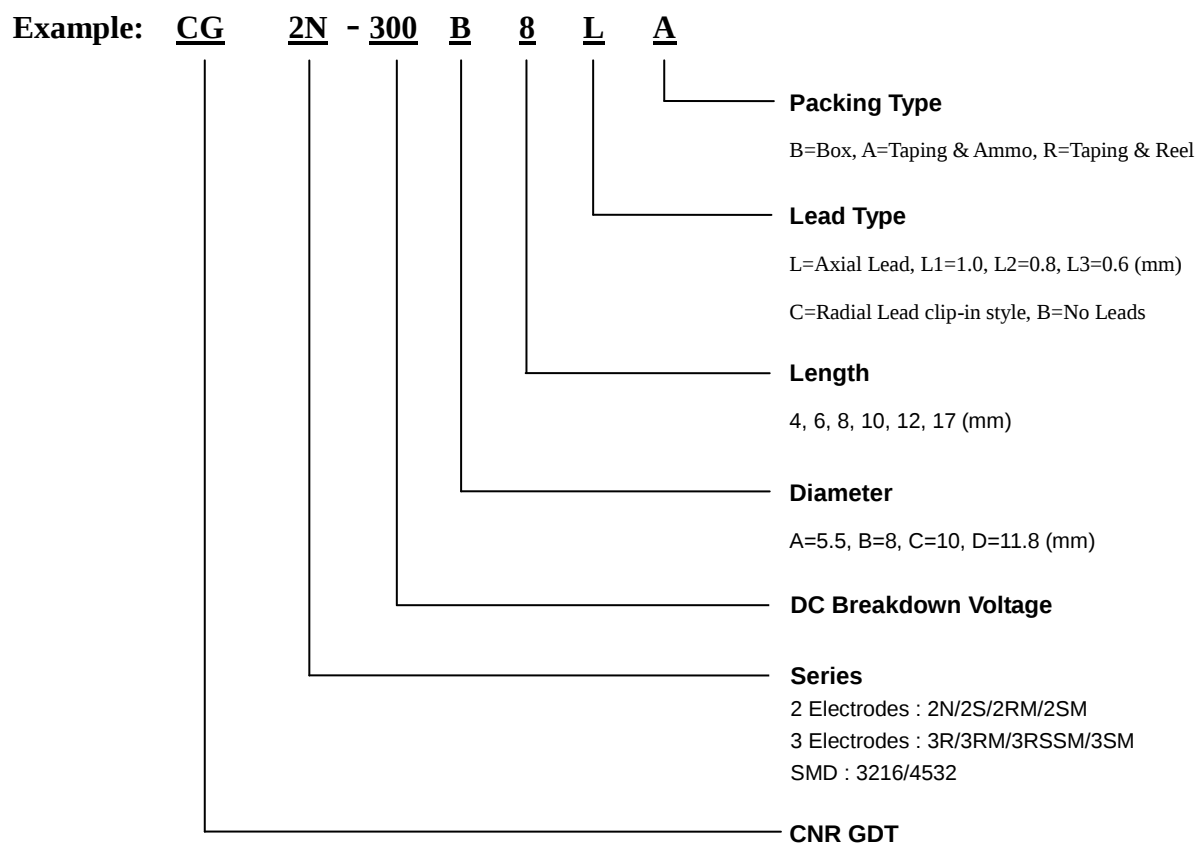
ing GDT Application in AC Line Isolation



GDT & TVSD Telephone Line Protection



Explanation of Part Numbers



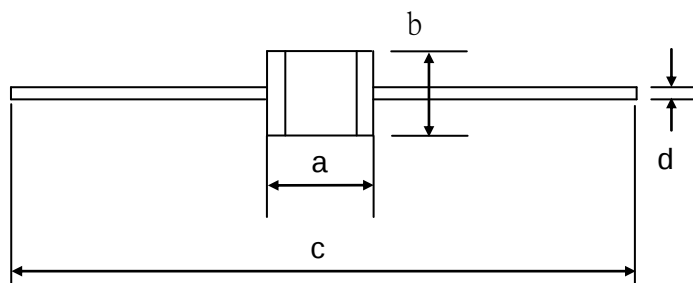
CG2N Series - 2 Electrodes High Current

Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		DC Holdover Voltage <150ms	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
		(100V/S)	100V/μs	1KV/μs	1 time		10 times	100A			
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)		
CG2N-070	70±20%	500	600	20	10	300	20	65	52	>1	<1.5
CG2N-075	75±20%	500	600	20	10	300	20	65	52	>1	<1.5
CG2N-090	90±20%	500	600	20	10	300	20	65	52	>1	<1.5
CG2N-120	120±20%	500	700	20	10	300	20	65	52	>1	<1.5
CG2N-130	130±20%	500	700	20	10	300	20	65	52	>1	<1.5
CG2N-145	145±20%	500	700	20	10	300	20	65	52	>1	<1.5
CG2N-180	150±20%	500	700	20	10	300	20	65	52	>1	<1.5
CG2N-230	230±20%	500	700	20	10	300	20	65	80	>1	<1.5
CG2N-250	250±20%	500	700	20	10	300	20	65	135	>1	<1.5
CG2N-300	300±20%	700	900	20	10	300	20	65	135	>1	<1.5
CG2N-350	350±20%	700	900	20	10	300	20	65	135	>1	<1.5
CG2N-400	400±20%	800	1000	20	10	300	20	65	135	>1	<1.5
CG2N-470	470±20%	900	1100	20	10	300	20	65	135	>1	<1.5
CG2N-600	600±20%	1100	1300	20	10	300	20	65	135	>1	<1.5

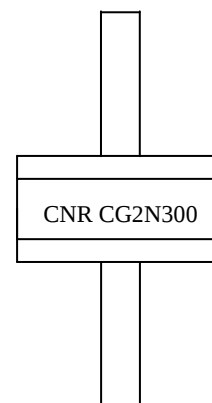
UL 497B Recognized, File E220380

Dimensions



Item	Dimension (mm)	
	Spec	Tolerance
a	8.0	± 0.2
b	6.0	± 0.2
c	62	± 2.0
d	0.8	± 0.05

Marking



CG2RM Series - 2 Electrodes Mini

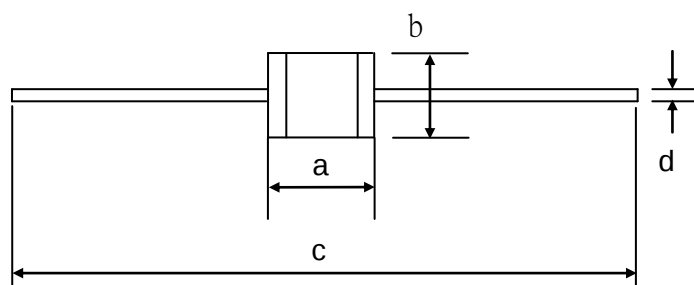
Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20 μ s)		Impulse Life	Normal Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
	(100V/S)	100V/ μ s	1KV/ μ s	1 time	10 times	100A	50Hz, 1Sec	Single 9cycles	<150ms		
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)	(G Ω)	(pF)
CG2RM-070	70 $\pm$ 20%	700	800	10	5	300 (10/1000 μ s)	5	15	52	>1	<1.5
CG2RM-075	75 $\pm$ 20%	700	800	10	5		5	15	52	>1	<1.5
CG2RM-090	90 $\pm$ 20%	600	700	10	5		5	15	52	>1	<1.5
CG2RM-120	120 $\pm$ 20%	600	700	10	5		5	15	52	>1	<1.5
CG2RM-130	130 $\pm$ 20%	600	700	10	5		5	15	52	>1	<1.5
CG2RM-145	145 $\pm$ 20%	600	700	10	5		5	15	52	>1	<1.5
CG2RM-230	230 $\pm$ 20%	600	700	10	5		5	15	80	>1	<1.5
CG2RM-250	250 $\pm$ 20%	600	700	10	5		5	15	80	>1	<1.5
CG2RM-300	300 $\pm$ 20%	700	900	10	5		5	15	135	>1	<1.5
CG2RM-350	350 $\pm$ 20%	700	900	10	5		5	15	135	>1	<1.5
CG2RM-400	400 $\pm$ 20%	800	1000	10	5		5	15	135	>1	<1.5
CG2RM-470	470 $\pm$ 20%	900	1100	10	5		5	15	135	>1	<1.5
CG2RM-600	600 $\pm$ 20%	1300	1500	5	2.5		2.5	5	135	>1	<1.5
CG2RM-800	800 $\pm$ 20%	1500	1700	5	2.5		2.5	5	135	>1	<1.5
CG2RM-1000	1000 $\pm$ 20%	1600	1800	3	1.5	300 (8/20 μ s)	2	4	135	>1	<1.5
CG2RM-1200	1200 $\pm$ 20%	1800	2000	3	1.5		2	4	135	>1	<1.5
CG2RM-1400	1400 $\pm$ 20%	2200	2400	3	1.5		2	4	135	>1	<1.5
CG2RM-1600	1600 $\pm$ 20%	2400	2600	3	1.5		2	4	135	>1	<1.5
CG2RM-2000	2000 $\pm$ 20%	2800	3000	3	1.5		2	4	135	>1	<1.5
CG2RM-2500	2500 $\pm$ 20%	3300	3500	3	1.5		2	4	135	>1	<1.5
CG2RM-3000	3000 $\pm$ 20%	4400	4600	3	1.5		2	4	135	>1	<1.5
CG2RM-3500	3500 $\pm$ 20%	5100	5300	3	1.5		2	4	135	>1	<1.5
CG2RM-3600	3600 $\pm$ 20%	5200	5400	3	1.5		2	4	135	>1	<1.5

UL 497B Recognized, File E220380 (CG2RM-070 to CG2RM-470)

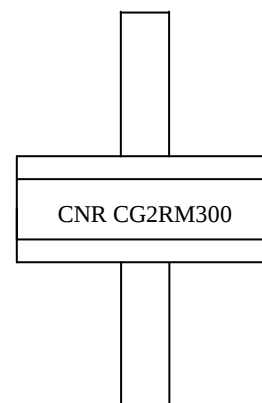
UL1449 4th Recognized, File E316325 (CG2RM-600 to CG2RM-3600)

Dimensions



Item	Dimension (mm)	
	Spec	Tolerance
a	6.0	± 0.2
b	5.5	± 0.2
c	62	± 2.0
d	0.8	± 0.05

Marking



G2S Series - 2 Electrodes Surface Mount

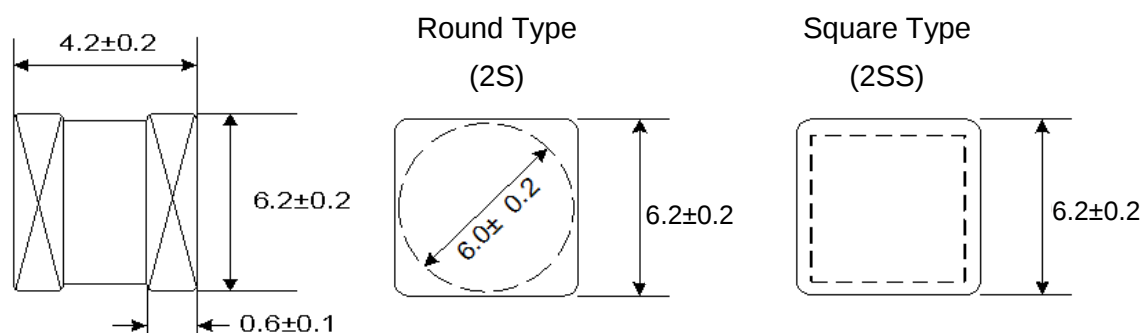
Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20 μ s)		Impulse Life (10/1000 μ s)	Normal Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
	(100V/S)	100V/ μ s	1KV/ μ s	1 time	10 times	100A	50Hz, 1Sec	Single 9cycles	<150ms		
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)	(G Ω)	(pF)
CG2S-075	75 $\pm$ 20%	600	700	8	5	500	5	15	52	1	1
CG2S-090	90 $\pm$ 20%	600	700	8	5	500	5	15	52	1	1
CG2S-145	145 $\pm$ 20%	500	700	8	5	500	5	15	52	1	1
CG2S-230	230 $\pm$ 20%	500	650	8	5	500	5	15	80	1	1
CG2S-250	250 $\pm$ 20%	500	650	8	5	500	5	15	135	1	1
CG2S-300	300 $\pm$ 20%	550	700	8	5	500	5	15	135	1	1
CG2S-350	350 $\pm$ 20%	600	700	8	5	500	5	15	135	1	1
CG2S-400	400 $\pm$ 20%	750	850	8	5	500	5	15	135	1	1
CG2S-470	470 $\pm$ 20%	800	900	8	5	500	5	15	135	1	1
CG2S-600	600 $\pm$ 20%	900	1000	8	5	500	5	15	135	1	1
CG2S-800	800 $\pm$ 20%	1000	1200	8	5	500	5	15	135	1	1
CG2S-1000	1000 $\pm$ 20%	1500	1600	5	3	300	3	10	135	1	1
CG2S-1200	1200 $\pm$ 20%	1700	1800	5	3	300	3	10	135	1	1
CG2S-1800	1800 $\pm$ 20%	2800	3000	5	3	300	3	10	135	1	1
CG2S-2000	2000 $\pm$ 20%	3000	3200	5	3	300	3	10	135	1	1
CG2S-2500	2500 $\pm$ 20%	3100	3300	5	3	300	3	10	135	1	1
CG2S-2700	2700 $\pm$ 20%	3400	3800	5	3	300	3	10	135	1	1
CG2S-3000	3000 $\pm$ 20%	3600	4000	5	3	300	3	10	135	1	1

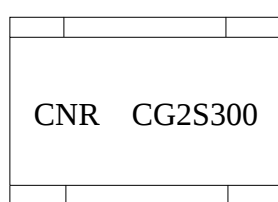
UL 497B Recognized, File E220380 (CG2S-075 to CG2S-600)

UL1449 4th Recognized, File E316325 (CG2S-800 to CG2S-3000)

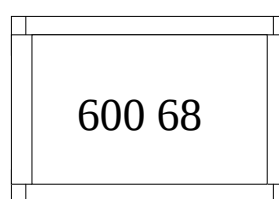
Dimensions



Marking



2S



2SS

600=DC Breakdown Voltage
68=2 Digit Date Code YM

CG2SM Series - 2 Electrodes Surface Mount Mini

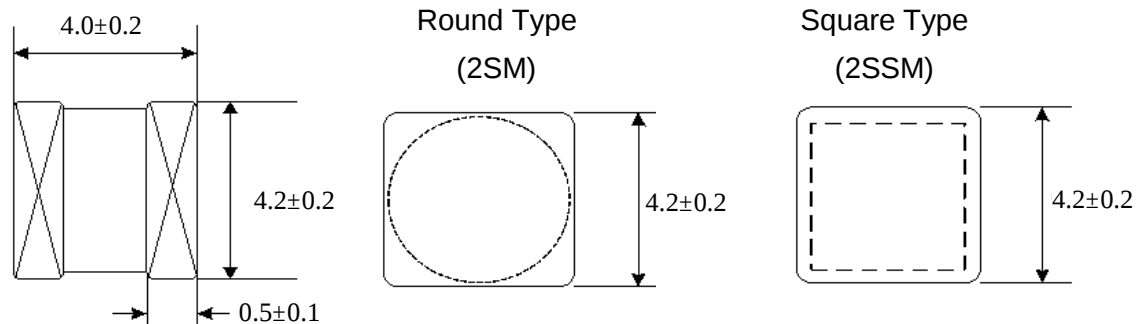
Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
				1 time	10 times		100A	50Hz, 1Sec			
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)		
CG2SM-075	75±20%	700	800	5	3	300	3	6	52	>1	<1
CG2SM-090	90±20%	700	800	5	3	300	3	6	52	>1	<1
CG2SM-145	145±20%	700	800	5	3	300	3	6	52	>1	<1
CG2SM-230	230±20%	600	700	5	3	300	3	6	80	>1	<1
CG2SM-250	250±20%	600	700	5	3	300	3	6	80	>1	<1
CG2SM-300	300±20%	600	750	5	3	300	3	6	135	>1	<1
CG2SM-350	350±20%	650	800	5	3	300	3	6	135	>1	<1
CG2SM-400	400±20%	700	900	5	3	300	3	6	135	>1	<1
CG2SM-470	470±20%	800	1000	5	3	300	3	6	135	>1	<1
CG2SM-600	600±20%	900	1100	5	3	300	3	6	135	>1	<1
CG2SM-800	800±20%	1300	1400	3	2	300	2	4	135	>1	<1
CG2SM-1000	1000±20%	1500	1600	3	2	100	2	4	135	>1	<1
CG2SM-1200	1200±20%	1700	1900	3	2	100	2	4	135	>1	<1
CG2SM-1400	1400±20%	1700	2000	3	2	100	2	4	135	>1	<1
CG2SM-1500	1500±20%	2000	2100	3	2	100	2	4	135	>1	<1
CG2SM-1600	1600±20%	2000	2300	3	2	100	2	4	135	>1	<1
CG2SM-1800	1800±20%	2500	2600	3	2	100	2	4	135	>1	<1
CG2SM-2000	2000±20%	2700	3000	3	2	100	2	4	135	>1	<1

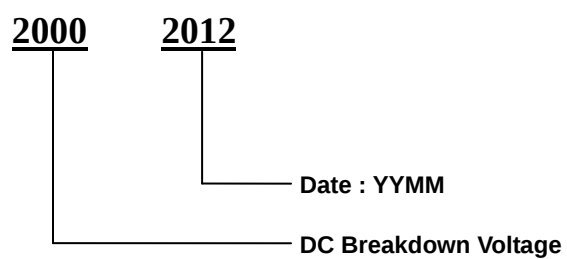
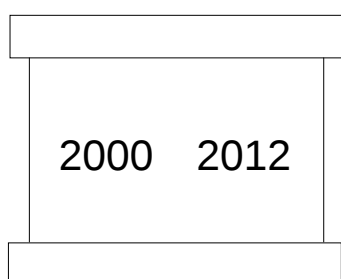
UL 497B Recognized, File E220380 (CG2SM-075 to CG2SM-600)

UL1449 4th Recognized, File E316325 (CG2SM-800 to CG2SM-2000)

Dimensions



Marking



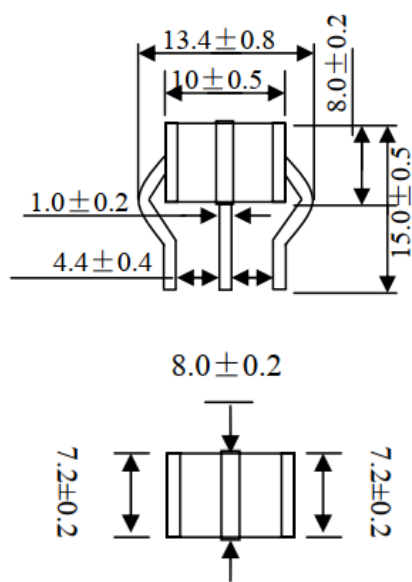
CG3R Series - 3 Electrodes Standard

Rating (Initial Characteristics)

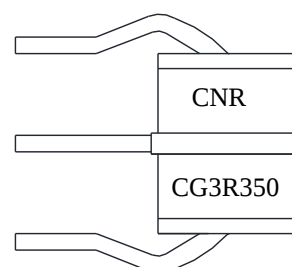
Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20 μ s)	Impulse Life (10/1000 μ s)	Alternating Discharge Current	DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
	(100V/S)	100V/ μ s	1KV/ μ s	20 times	200A	50Hz,1Sec	<150ms		
	(V)	(V)	(V)	(KA)	(times)	(A)	(V)		
CG3R-075	75 $\pm$ 20%	600	700	20	130	20	52	>1	<1.5
CG3R-090	90 $\pm$ 20%	600	700	20	130	20	52	>1	<1.5
CG3R-145	145 $\pm$ 20%	500	700	20	130	20	80	>1	<1.5
CG3R-200	200 $\pm$ 20%	500	700	20	130	20	80	>1	<1.5
CG3R-230	230 $\pm$ 20%	600	700	20	130	20	135	>1	<1.5
CG3R-250	250 $\pm$ 20%	600	700	20	130	20	135	>1	<1.5
CG3R-260	260 $\pm$ 20%	600	700	20	130	20	135	>1	<1.5
CG3R-300	300 $\pm$ 20%	650	750	20	130	20	135	>1	<1.5
CG3R-350	350 $\pm$ 20%	700	800	20	130	20	135	>1	<1.5
CG3R-400	400 $\pm$ 20%	800	900	20	130	20	135	>1	<1.5
CG3R-420	420 $\pm$ 20%	800	900	20	130	20	135	>1	<1.5
CG3R-470	470 $\pm$ 20%	900	1000	20	130	20	135	>1	<1.5
CG3R-550	550 $\pm$ 20%	1000	1100	20	130	20	135	>1	<1.5
CG3R-600	600 $\pm$ 20%	1000	1100	20	130	20	135	>1	<1.5

UL 497B Recognized, File E220380

Dimensions



Marking



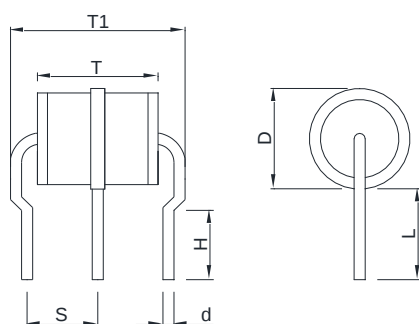
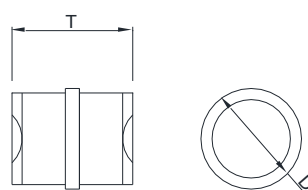
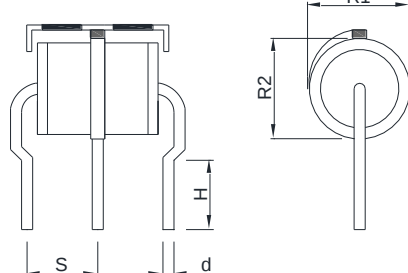
CG3RM Series - 3 Electrodes Mini

Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20 μ s)	Impulse Life (10/1000 μ s)	Alternating Discharge Current	DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
	(100V/S)	100V/ μ s	1KV/ μ s	10 times	200A	50Hz,1Sec	<150ms		
	(V)	(V)	(V)	(KA)	(times)	(A)	(V)		
CG3RM-090	90 $\pm$ 20%	750	850	10	100	5	52	1	2
CG3RM-145	145 $\pm$ 20%	750	850	10	100	5	52	1	2
CG3RM-200	200 $\pm$ 20%	600	700	10	100	10	135	1	2
CG3RM-230	230 $\pm$ 20%	600	700	10	100	10	135	1	2
CG3RM-250	250 $\pm$ 20%	600	700	10	100	10	135	1	2
CG3RM-350	350 $\pm$ 20%	650	800	5	100	5	135	1	2
CG3RM-400	400 $\pm$ 20%	700	900	5	100	5	135	1	2
CG3RM-420	420 $\pm$ 20%	700	900	5	100	5	135	1	2
CG3RM-470	470 $\pm$ 20%	800	950	5	100	5	135	1	2
CG3RM-600	600 $\pm$ 20%	900	1100	5	100	5	135	1	2

UL 497B Recognized, File E220380

Dimensions

C1/H TYPE

B TYPE

CF1/HF TYPE


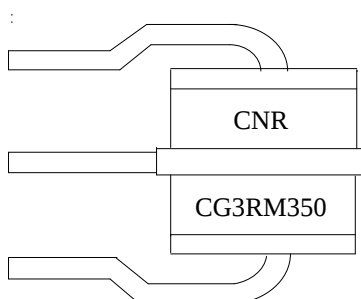
Note :

C1 & CF1 TYPE (S) = 3.8 ± 0.3

H & HF TYPE (S) = 4.4 ± 0.3

Item	Dimension (mm)	
	Spec	Tolerance
D	6	+0.2/-0.5
T	8.5	± 0.5
T1	11.5	+0.8/-0.5
L	7.5	± 0.5
H	4.5	Min
S	3.8	± 0.3
	4.4	± 0.3
D	0.8	± 0.05
R1	6.3	± 0.3
R2	7.6	± 0.4

Marking



CG3RSSM Series - 3 Electrodes Symmetrical

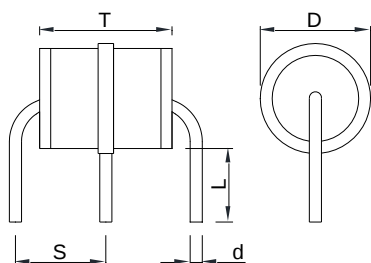
Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
	(100V/S)	100V/μs	1KV/μs	1time	10 times	200A	50Hz, 1Sec	Single 9 cycle	<150ms		
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)		
CG3RSSM-230	230±20%	600	700	10	5	300	5	20	135	>1	<1
CG3RSSM-250	250±20%	600	700	10	5	300	5	20	135	1	2
CG3RSSM-300	300±20%	650	750	10	5	300	5	20	135	1	2
CG3RSSM-350	350±20%	650	750	10	5	300	5	20	135	1	2
CG3RSSM-400	400±20%	700	800	10	5	300	5	20	135	1	2
CG3RSSM-420	420±20%	700	800	10	5	300	5	20	135	1	2
CG3RSSM-470	470±20%	800	900	10	5	300	5	20	135	1	2
CG3RSSM-600	600±20%	900	1000	10	5	300	5	20	135	1	2

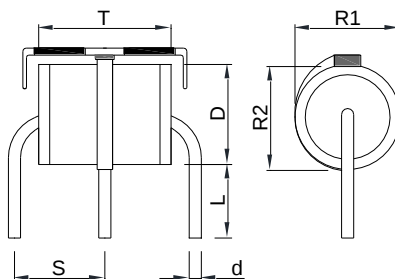
UL 497B Recognized, File E220380

Dimensions

H TYPE



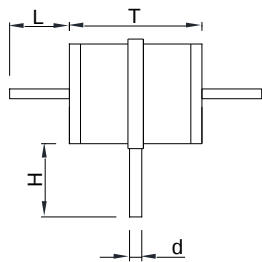
HF TYPE



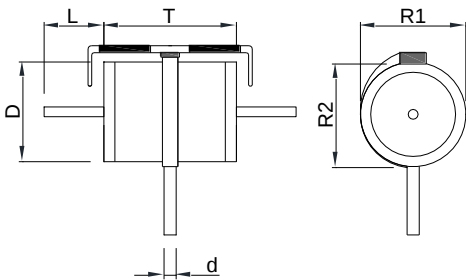
Item	Dimension (mm)	
	Spec	Tolerance
D	5.0	$\pm$ 0.1
T	7.2	$\pm$ 0.3
S	4.4	$\pm$ 0.5
d	0.8	$\pm$ 0.05
L	4.5	Min
R1	5.8	Max.
R2	7.0	Max.



G1 TYPE

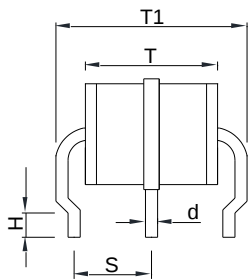


G1F TYPE

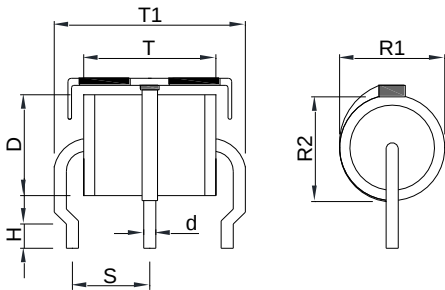


Item	Dimension (mm)	
	Spec	Tolerance
D	5.0	±0.1
T	7.2	±0.3
d	0.8	±0.05
L	15.8	±0.5
H	9.4	±0.5
R1	5.8	Max.
R2	7.0	Max.

C3 TYPE

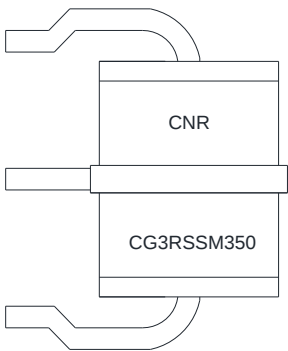


C3F TYPE



Item	Dimension (mm)	
	Spec	Tolerance
D	5.0	±0.1
T	7.2	±0.3
T1	12	Max.
S	3.8	±0.5
d	0.8	±0.05
L	12	Max.
H	4.5	Min
R1	5.8	Max.
R2	7.0	Max.

Marking



CG3SM Series - 3 Electrodes Surface Mount Mini

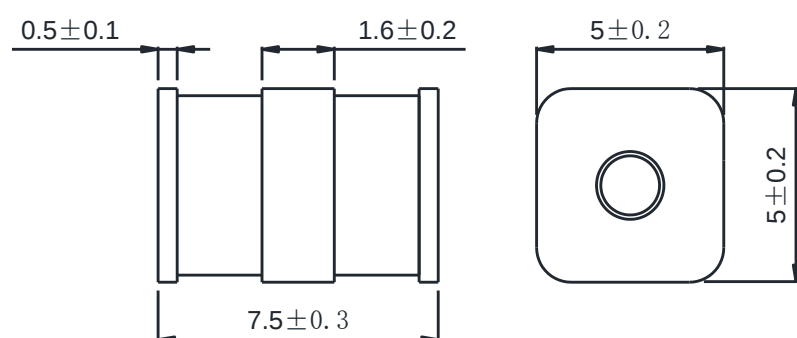
Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)
				1 time	10 times		200A	50Hz, 1Sec			
	(V)	(V)	(V)	(KA)		(times)	(A)		(V)		
CG3SM-075	75±20%	600	700	10	5	300	5	30	52	>1	<1
CG3SM-090	90±20%	500	600	10	5	300	5	30	52	>1	<1
CG3SM-120	120±20%	500	600	10	5	300	5	30	80	>1	<1
CG3SM-150	150±20%	500	600	10	5	300	5	30	135	>1	<1
CG3SM-200	200±20%	600	700	15	10	300	10	60	135	>1	<1
CG3SM-230	230±20%	600	700	15	10	300	10	60	135	>1	<1
CG3SM-250	250±20%	600	700	15	10	300	10	60	135	>1	<1
CG3SM-350	350±20%	650	750	15	10	300	10	60	135	>1	<1
CG3SM-400	400±20%	650	850	15	10	300	10	60	135	>1	<1
CG3SM-420	420±20%	700	900	15	10	300	10	60	135	>1	<1
CG3SM-470	470±20%	700	900	15	10	300	10	60	135	>1	<1
CG3SM-600	600±20%	800	950	10	5	300	5	30	135	>1	<1
CG3SM-800	800±20%	900	1100	10	5	300	5	30	135	>1	<1
CG3SM-1000	1000±20%	1150	1400	10	5	300	5	30	135	>1	<1
CG3SM-1100	1100±20%	1400	1700	10	5	300	5	30	135	>1	<1

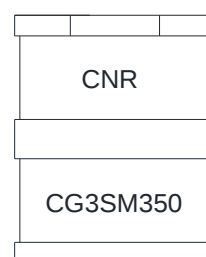
UL 497B Recognized, File E220380 (CG3SM-075 to CG3SM-600)

UL1449 4th Recognized, File E316325 (CG3SM-800 to CG3SM-1100)

Dimensions



Marking



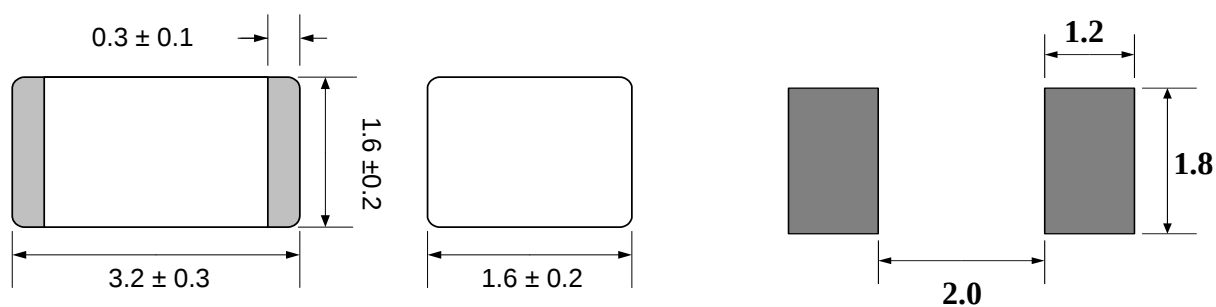
CG3216 Series - 2 Electrodes Surface Mount 3216 size Chip

Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Impulse Discharge Current (8/20 μ s) Positive/Negative 5 Times	Impulse Withstanding Voltage Capacity (10/700 μ s) Positive/Negative 5 Times	Alternating Discharge Current (50Hz,1Sec, 10 times)	Impulse Life Test (8/20 μ s,50A)	Insulation Resistance	Capacitance (1MHz)
	(V)	(A)	(KV)	(A)	(times)	(G Ω)	(pF)
CG3216-150LF	150 $\pm$ 30%	500	6	0.5	300	>1	<1
CG3216-200LF	200 $\pm$ 30%	500	6	0.5	300	>1	<1
CG3216-400LF	400 $\pm$ 30%	500	6	0.5	300	>1	<1
CG3216-420LF	420 $\pm$ 30%	500	6	0.5	300	>1	<1
CG3216-500LF	500 $\pm$ 30%	500	6	0.5	300	>1	<1
CG3216-600LF	600 $\pm$ 30%	500	6	0.5	300	>1	<1

UL1449 4th Recognized, File E316325

Dimensions



Recommended Pad Size

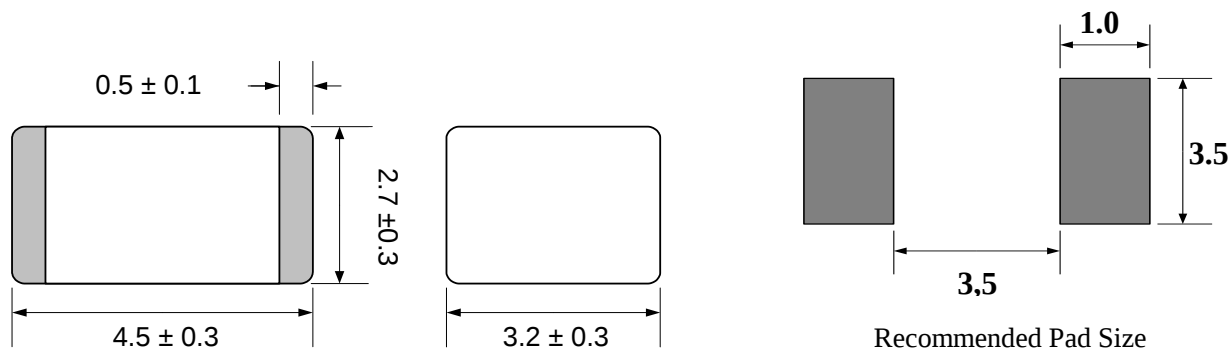
CG4532 Series - 2 Electrodes Surface Mount 4532 size Chip

Rating (Initial Characteristics)

Model Name	DC Breakdown Voltage	Impulse Discharge Current (8/20 μ s) Positive/Negative 5 Times	Impulse Withstanding Voltage Capacity (10/700 μ s) Positive/Negative 5 Times	Impulse Life Test (8/20 μ s,100A)	Insulation Resistance	Capacitance (1MHz)
	(V)	(KA)	(KV)	(times)	(G Ω)	(pF)
CG4532-075 LF	75 $\pm$ 30%	2	6	300	>1	<1
CG4532-090 LF	90 $\pm$ 30%	2	6	300	>1	<1
CG4532-120 LF	120 $\pm$ 30%	2	6	300	>1	<1
CG4532-150 LF	150 $\pm$ 30%	2	6	300	>1	<1
CG4532-200 LF	200 $\pm$ 30%	2	6	300	>1	<1
CG4532-230 LF	230 $\pm$ 30%	2	6	300	>1	<1
CG4532-300 LF	300 $\pm$ 30%	2	6	300	>1	<1
CG4532-350 LF	350 $\pm$ 30%	2	6	300	>1	<1
CG4532-400 LF	400 $\pm$ 30%	2	6	300	>1	<1
CG4532-420 LF	420 $\pm$ 30%	2	6	300	>1	<1
CG4532-470 LF	470 $\pm$ 30%	2	6	300	>1	<1
CG4532-500 LF	500 $\pm$ 30%	2	6	300	>1	<1
CG4532-600 LF	600 $\pm$ 30%	2	6	300	>1	<1

UL 497B Recognized, File E220380

Dimensions



Electrical Terms and Definitions

Item	Test Condition / Description	Requirement												
DC Breakdown Voltage	The voltage measured at a rise time of 100v/s.	To meet the specified value												
Maximum Impulse Breakdown Voltage	The maximum breakdown voltage at rise times of 100v/us and 1000v/us													
Maximum Impulse Discharge Current	The maximum current applying a waveform of 8/20us that can be applied across the terminals of the gas tube without causing the gas tube to change more than ±25% from its initial measured DC breakdown voltage. Dwell time between pulses is 3 minutes.													
Impulse Life	The minimum number of impulses of a specified waveform and peak current which a gas tube will conduct without causing the gas tube to change more than ±25% from its initial measured DC breakdown voltage. Dwell time between pulses is 1-2 minutes.													
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. 10 times. Intervals: 3min. DC breakdown voltage may not change more than ±25% from its initial measured DC breakdown voltage. IR > 10 ⁸ ohms (-20%, +30% for 70 – 90V).)													
DC Holdover Voltage	The maximum DC voltage across the two terminals of the gas tube under which it may be expected to return to the high impedance state after the gas tube breakdown.													
Insulation Resistance	The resistance of gas tube shall be measured each terminal to each other terminal. <table><thead><tr><th>DC Breakdown Voltage</th><th>Measuring Voltage</th></tr></thead><tbody><tr><td>70-150V</td><td>50V</td></tr><tr><td>151-400V</td><td>100V</td></tr><tr><td>401-1000V</td><td>250V</td></tr><tr><td>1001-2000V</td><td>500V</td></tr><tr><td>2001-6000V</td><td>1000V</td></tr></tbody></table>		DC Breakdown Voltage	Measuring Voltage	70-150V	50V	151-400V	100V	401-1000V	250V	1001-2000V	500V	2001-6000V	1000V
DC Breakdown Voltage	Measuring Voltage													
70-150V	50V													
151-400V	100V													
401-1000V	250V													
1001-2000V	500V													
2001-6000V	1000V													
Capacitance	The capacitance of a gas tube shall be measured each terminal to each other terminal. Test frequency: 1MHz In measurements involving 3-electrode gas tubes, the terminal not being tested shall be connected to a ground plane.													

Storage Environment

- Operate temperature: -40°C to 90°C
- Storage temperature: -40°C to 115°C
- Relative humidity: $\leq 75\% \text{RH}$
- Do not store in an environment with corrosive gas or direct sunlight.

- Storage period: 1 year