

ELITALLA

GAS DISCHARGE TUBE

- AC Line Protection
- High Frequency Protection
- Signal Protection



GB83R
GC63R
GC82R
GCC2R
GD52R
GD82R
GF32R
GF42R
GF62R
GH82R
GJQ2R
GMC2R
GNC2R
GQF3R
GQF3R - W
GS22R

SERIE	PAG
GB83R	38
GC63R	34
GC82R	30
GCC2R	51
GD52R	18
GD82R	22
GF32R	07
GF42R	10
GF62R	14
GH82R	26
GJQ2R	48
GMC2R	57
GNC2R	54
GQF3R	42
GQF3R - W	45
GS22R	04

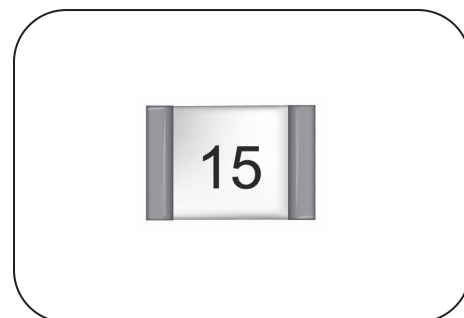
Gas Discharge Tube: GS2 Series

SMD L3.2*W1.6*H1.6 mm Type



■ Features

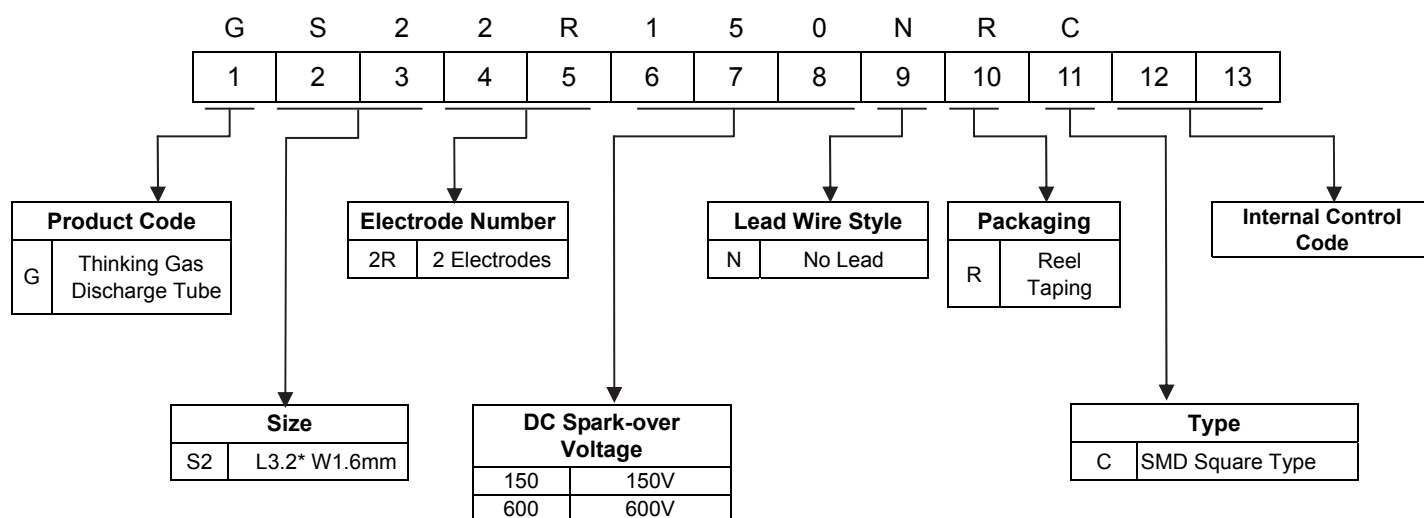
1. RoHS & HF compliant
2. SMD Structure
3. DC Spark-over voltage: 150~600V
4. Low Capacitance
5. Agency Recognition : UL
6. Operating temperature : -30°C ~ +85°C
Storage temperature: -40°C ~ +115°C



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Ethernet port
6. Consumer electronics

■ Part No. Code



Gas Discharge Tube: GS2 Series

SMD L3.2*W1.6*H1.6 mm Type



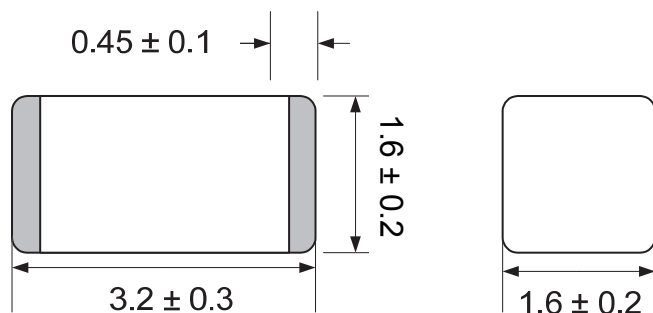
■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Discharge Current	Normal Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance	Maximum Capacitance	Safety Approvals
	100V/S (V)	8/20μs (A)	50Hz, 1Sec (A)	8/20 μs,50A (Times)	@DC 100V (MΩ)	1MHz (pF)	UL 1449 / cUL
GS22R150NR	150 (105~195)	500A (Positive/ Negative 5 Times)	0.5A 10 Times	300	Min. 100	0.3	√
GS22R200NR	200 (140~260)						√
GS22R400NR	400 (280~520)						√
GS22R420NR	420 (294~546)						√
GS22R500NR	500 (350~650)						√
GS22R600NR	600 (420~780)						√

Note1: UL 1449 3rd File No: E314979

■ Dimension

(Unit: mm)

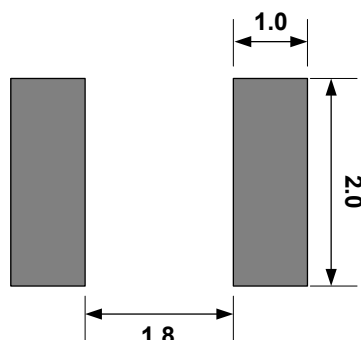


■ Marking



■ Recommended Pad Size

(Unit: mm)



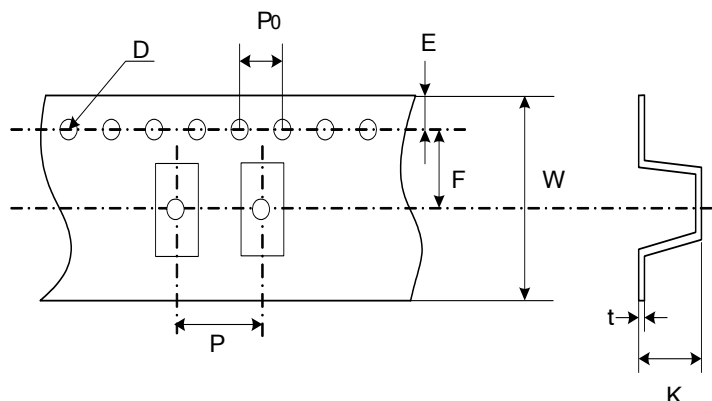
Gas Discharge Tube: GS2 Series

SMD L3.2*W1.6*H1.6 mm Type



■ Packaging

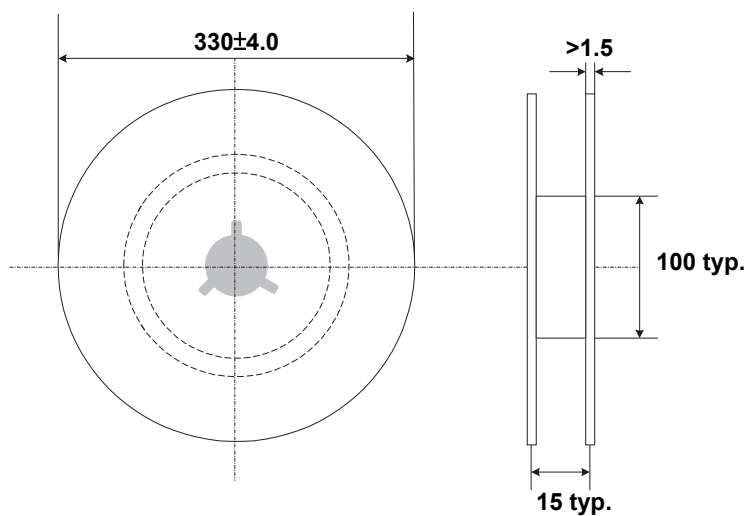
● Taping



Quantity: 3,000pcs per reel (13")

(Unit: mm)

ITEM	P	P0	W	F	E	D	K	t
Spec.	8.0	4.0	12.0	5.45	1.75	Φ1.55	2.0	0.3
Tolerance	±0.1	±0.1	±0.3	±0.1	±0.1	±0.05	±0.1	±0.05



■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: -10℃~+40℃
2. Relative Humidity: ≤75%RH
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage : 1 year

Gas Discharge Tube: GF3 Series

SMD L4.5*W3.2*H2.7 mm Type



■ Features

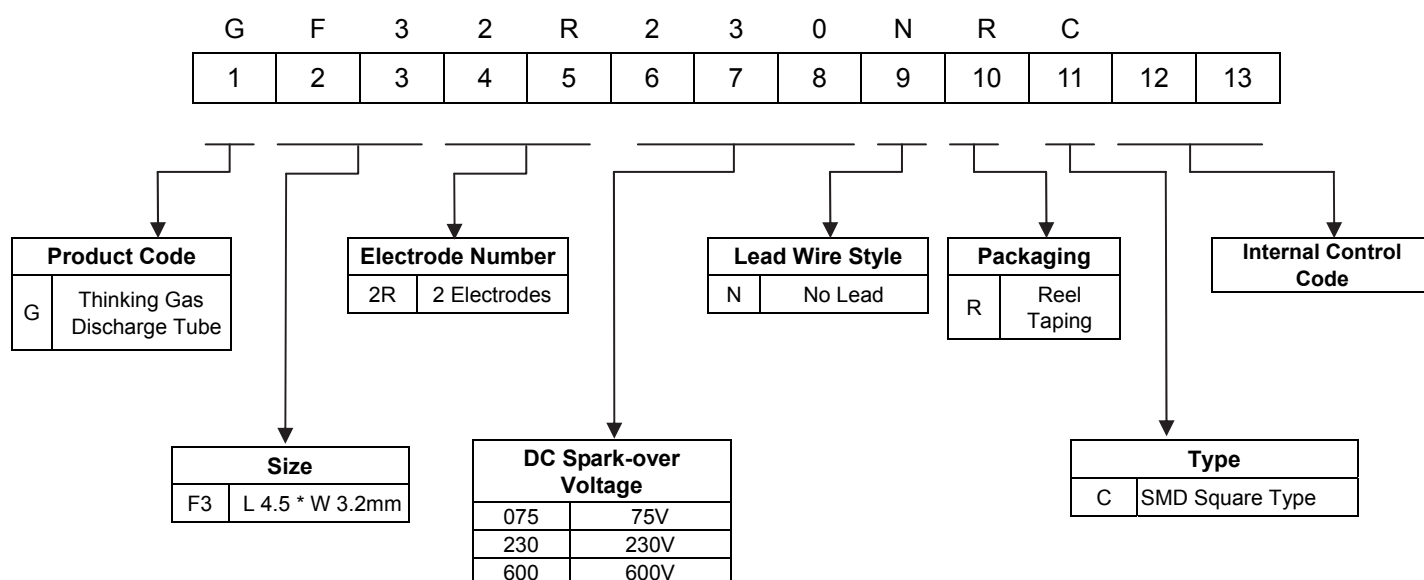
1. RoHS & HF compliant
2. SMD Structure
3. DC Spark-over voltage: 75~600V
4. Low Capacitance
5. Agency Recognition : UL
6. Operating temperature : -30°C ~ +85°C
Storage temperature: -40°C ~ +115°C



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Ethernet port
6. Consumer electronics

■ Part No. Code



Gas Discharge Tube: GF3 Series

SMD L4.5*W3.2*H2.7 mm Type



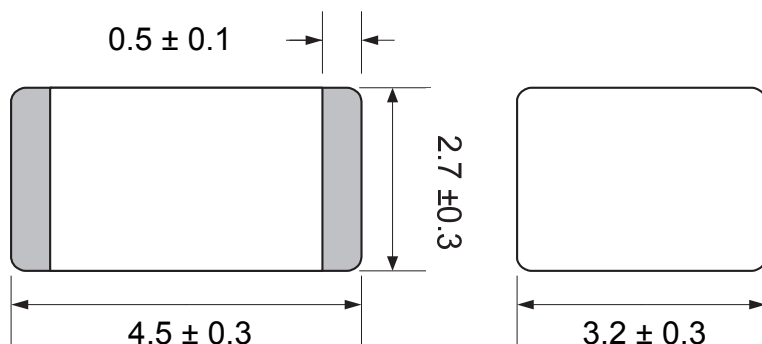
■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Discharge Current	Impulse Withstanding Voltage Capacity	Impulse Life	Minimum Insulation Resistance	Maximum Capacitance	Safety Approvals
	100V/S (V)	8/20μs (KA)		8/20 μs, 100A (Times)	@DC 100V (MΩ)	1MHz (pF)	UL 497B
GF32R075NRC	75 (55~95)	2KA (Positive/ Negative 5 Times)	10/700us 4kV (Positive/ Negative 5 Times)	300	Min. 100	0.5	√
GF32R090NRC	90 (63~117)						√
GF32R120NRC	120 (84~156)						√
GF32R150NRC	150 (105~195)						√
GF32R200NRC	200 (140~260)						√
GF32R230NRC	230 (161~299)						√
GF32R300NRC	300 (210~390)						√
GF32R350NRC	350 (245~455)						√
GF32R400NRC	400 (280~520)						√
GF32R420NRC	420 (294~546)						√
GF32R470NRC	470 (329~611)						√
GF32R500NRC	500 (350~650)						√
GF32R600NRC	600 (420~780)						√

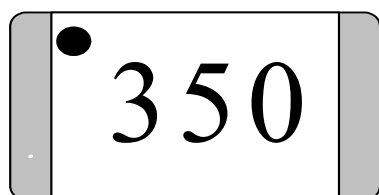
Note1: UL 497B File No : E245070

■ Dimension

(Unit: mm)



■ Marking



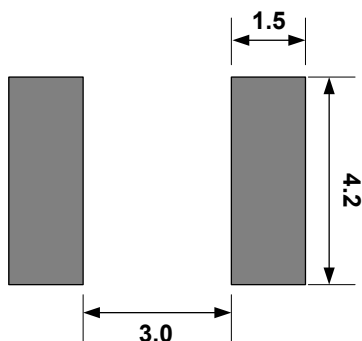
Gas Discharge Tube: GF3 Series

SMD L4.5*W3.2*H2.7 mm Type



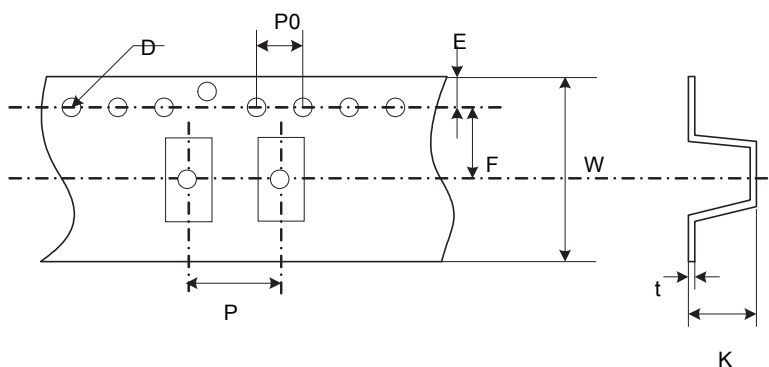
■ Recommended Pad Size

(Unit: mm)



■ Packaging

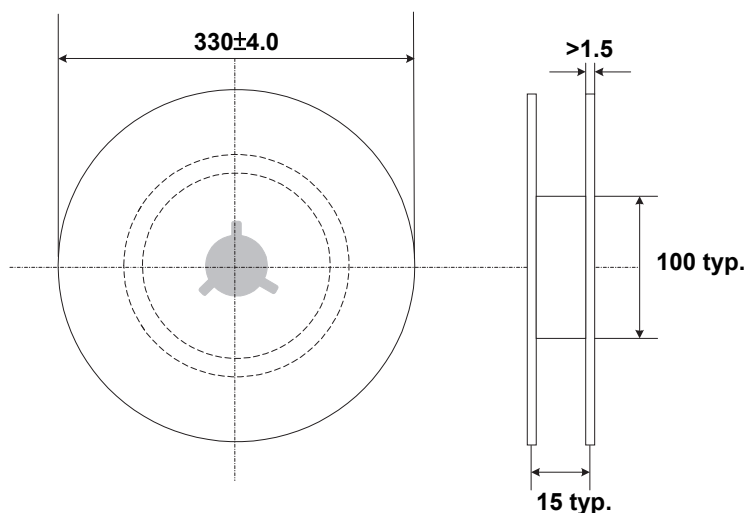
● Taping



Quantity: 2,500pcs per reel (13")

Unit: mm

ITEM	P	P0	W	F	E	D	K	t
Spec.	8.0	4.0	12.0	5.45	1.75	Φ1.55	3.1	0.4
Tolerance	±0.1	±0.1	±0.3	±0.1	±0.1	±0.05	±0.1	±0.05



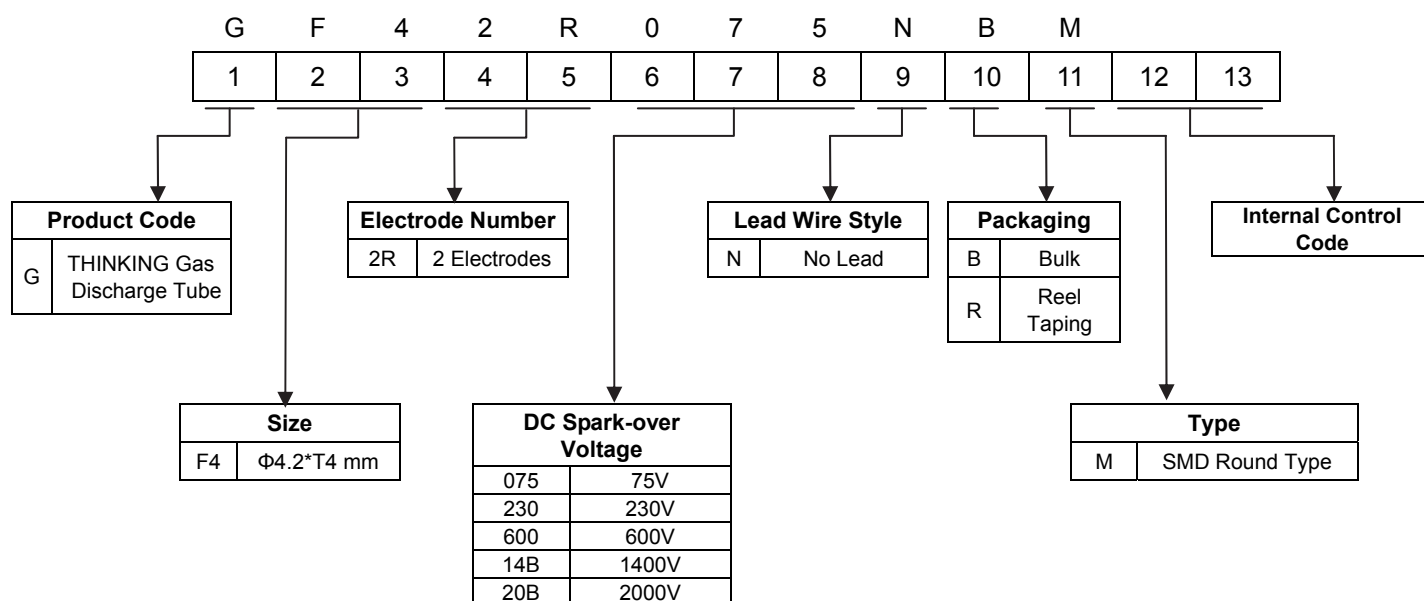
■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: -10°C~+40°C
2. Relative Humidity: ≤75%RH
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

1. RoHS & HF compliant
2. SMD type series
3. DC spark-over voltage: 75~2000V
4. Low capacitance
5. Agency recognition :UL / cUL
6. Operating temperature : -30℃ ~ +85℃
Storage temperature: -40℃ ~ +115℃



Gas Discharge Tube: GF4 Series

SMD 2-Electrode $\Phi 4.2 \times T4$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Maximum Impulse Breakdown Voltage		Max. 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)	Safety approvals	
	100V/S	100V/ μ s	1KV/ μ s	1 time	10 times	100A	50Hz 1Sec	Single 9 Cycles	<150ms			UL 1449/cUL	UL 497B
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(G Ω)	(pF)	
GF42R075NRM	75 $\pm$ 20%	700	800	5	3	300	3	6	52	1	0.5		✓
GF42R090NRM	90 $\pm$ 20%	700	800						52				✓
GF42R145NRM	145 $\pm$ 20%	700	800						52				✓
GF42R230NRM	230 $\pm$ 20%	600	700						80				✓
GF42R250NRM	250 $\pm$ 20%	600	700						80				✓
GF42R300NRM	300 $\pm$ 20%	600	700						150				✓
GF42R350NRM	350 $\pm$ 20%	650	800						150				✓
GF42R400NRM	400 $\pm$ 20%	700	800						150				✓
GF42R470NRM	470 $\pm$ 20%	800	900						150				✓
GF42R600NRM	600 $\pm$ 20%	900	1000						150				✓
GF42R800NRM	800 $\pm$ 20%	1300	1400	3	2	100	2	4	150			✓	
GF42R10BNRM	1000 $\pm$ 20%	1500	1600						150			✓	
GF42R12BNRM	1200 $\pm$ 20%	1700	1800						150			✓	
GF42R14BNRM	1400 $\pm$ 20%	1700	1800						150			✓	
GF42R15BNRM	1500 $\pm$ 20%	2000	2100						150			✓	
GF42R16BNRM	1600 $\pm$ 20%	2000	2100						150			✓	
GF42R18BNRM	1800 $\pm$ 20%	2500	2600						150			✓	
GF42R20BNRM	2000 $\pm$ 20%	2700	2800						150			✓	

Note1: UL 497B File No: E245070, UL 1449 3rd File No: E314979

Note2: Insulation resistance test condition:

DC Spark-over Voltage	DC Measuring Voltage
70-90V	50V
120-400V	100V
470-800V	250V
1000-2000V	500V

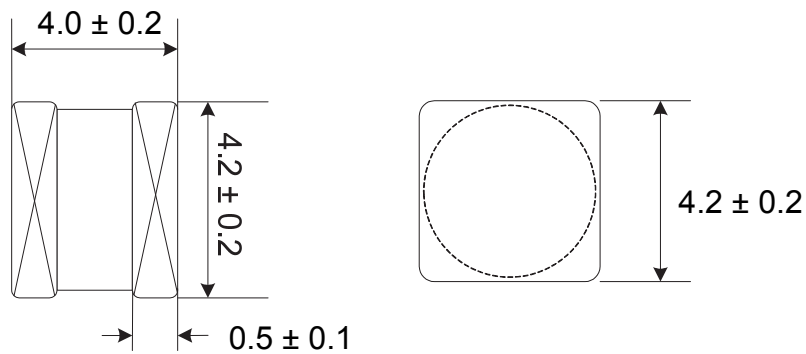
Gas Discharge Tube: GF4 Series

SMD 2-Electrode $\Phi 4.2 \times T4$ mm Type



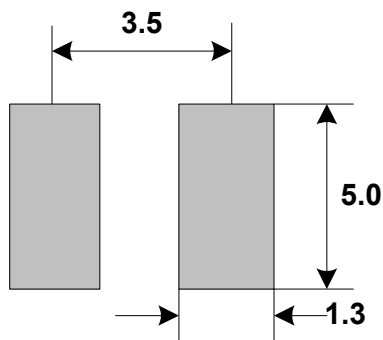
■ Dimension

(Unit: mm)

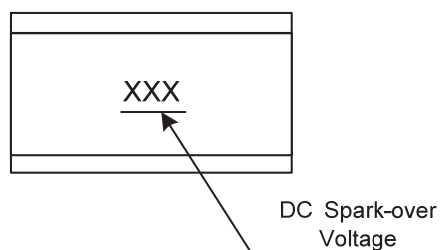


■ Recommended Pad Size

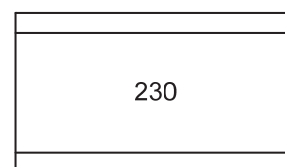
(Unit: mm)



■ Marking



Example



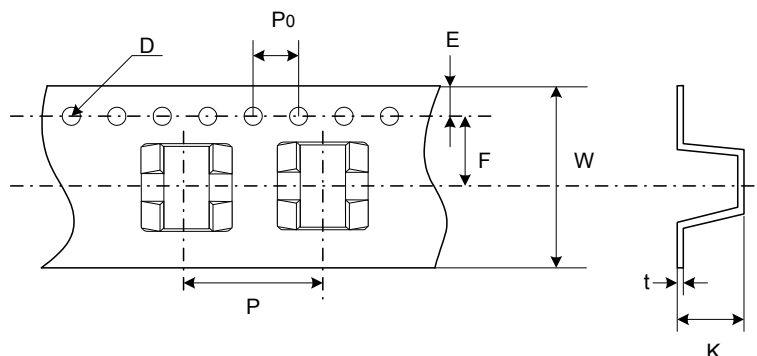
Gas Discharge Tube: GF4 Series

SMD 2-Electrode $\Phi 4.2 \times T4$ mm Type



■ Packaging

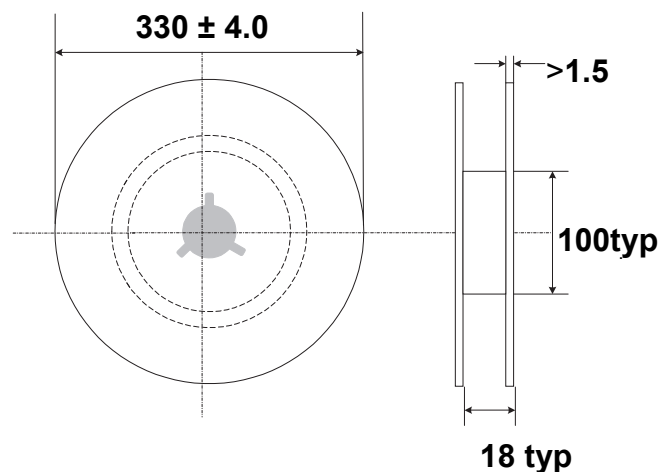
● Taping



Quantity: 900pcs per reel (13")

(Unit: mm)

Item	P	P0	W	F	E	D	K	t
Spec.	12.0	4.0	16.0	7.5	1.75	$\Phi 1.55$	4.6	0.5
Tolerance	± 0.1	± 0.1	± 0.3	± 0.1	± 0.1	± 0.05	$+0.2, -0.1$	± 0.05



■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
2. Relative Humidity: $\leq 75\% \text{RH}$
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

Gas Discharge Tube: GF6 Series

SMD 2-Electrode $\Phi 6.2 \times T4.2$ mm Type



■ Features

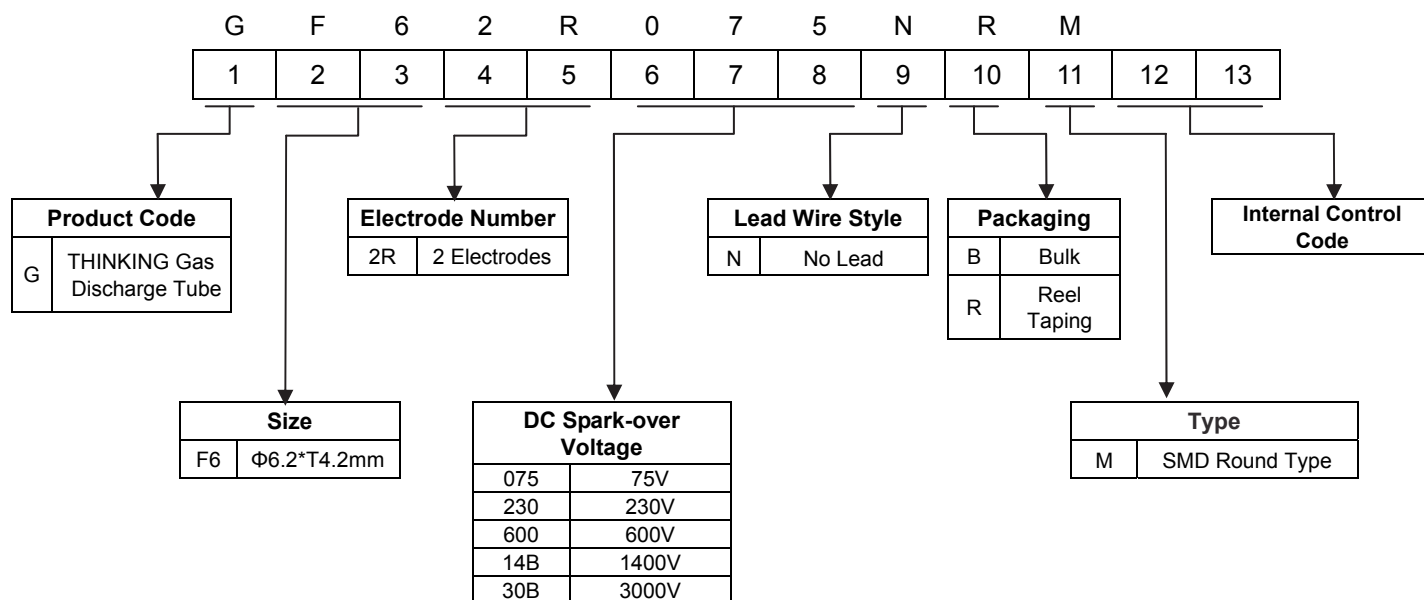
1. RoHS & HF compliant
2. SMD type series
3. DC spark-over voltage: 75~3000V
4. Low capacitance
5. Agency recognition :UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GF6 Series

SMD 2-Electrode $\Phi 6.2 \times T4.2$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals	
	100V/S	100V/ μ s	1KV/ μ s	1 time	10 times	100A	50Hz, 1Sec	Single 9 Cycles	<150ms				
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(pF)	UL 1449 /cUL	UL 497B
GF62R075NRM	75 $\pm$ 20%	600	700	8	5	500	5	15	52	1	0.8		✓
GF62R090NRM	90 $\pm$ 20%	600	700						52				✓
GF62R145NRM	145 $\pm$ 20%	500	700						52				✓
GF62R230NRM	230 $\pm$ 20%	500	600						80				✓
GF62R250NRM	250 $\pm$ 20%	500	600						135				✓
GF62R300NRM	300 $\pm$ 20%	550	650						150				✓
GF62R350NRM	350 $\pm$ 20%	600	700						150				✓
GF62R400NRM	400 $\pm$ 20%	650	750						150				✓
GF62R470NRM	470 $\pm$ 20%	750	850						150				✓
GF62R600NRM	600 $\pm$ 20%	900	1000						150				✓
GF62R800NRM	800 $\pm$ 20%	1000	1100	5	3	300	3	10	150			✓	✓
GF62R10BNRM	1000 $\pm$ 20%	1500	1600						150			✓	
GF62R12BNRM	1200 $\pm$ 20%	1700	1800						150			✓	
GF62R18BNRM	1800 $\pm$ 20%	2500	2600						150			✓	
GF62R20BNRM	2000 $\pm$ 20%	2700	2800						150			✓	
GF62R25BNRM	2500 $\pm$ 20%	3100	3200						150			✓	
GF62R27BNRM	2700 $\pm$ 20%	3300	3400						150			✓	
GF62R30BNRM	3000 $\pm$ 20%	3600	3700						150			✓	

Note 1: UL 497B File No: E245070, UL 1449 3rd File No: E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
70-90V	50V
120-400V	100V
470-800V	250V
1000-2000V	500V
2500-3000V	1000V

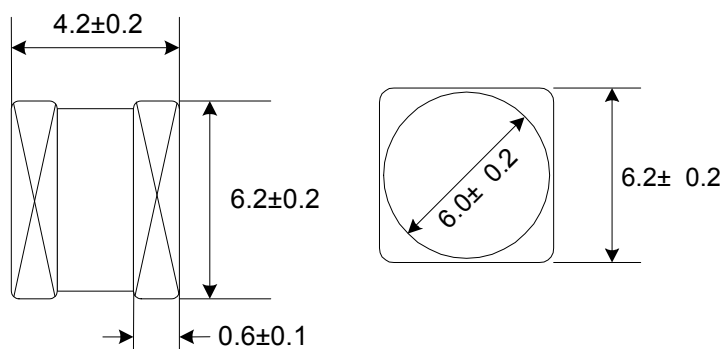
Gas Discharge Tube: GF6 Series

SMD 2-Electrode $\Phi 6.2 \times T4.2$ mm Type



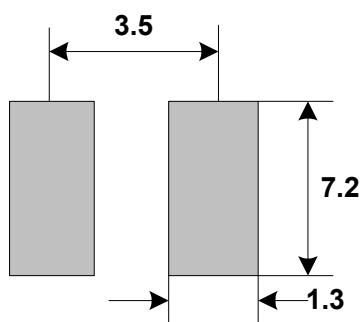
■ Dimension

(Unit: mm)

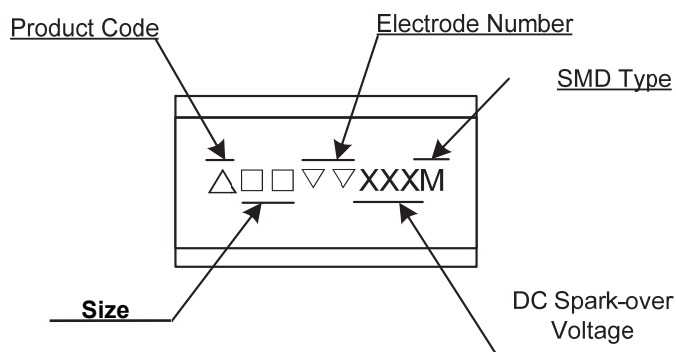


■ Recommended Pad Size

(Unit: mm)



■ Marking



Example



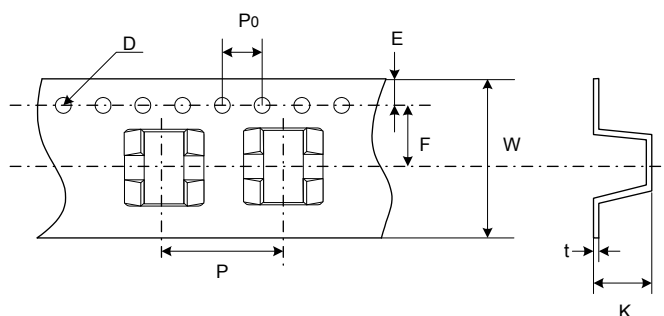
Gas Discharge Tube: GF6 Series

SMD 2-Electrode $\Phi 6.2 \times T4.2$ mm Type



■ Packaging

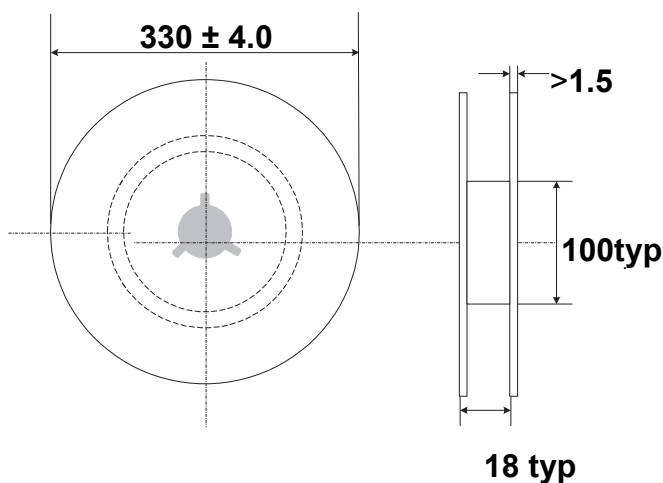
● Taping



Quantity: 800pcs per reel (13")

Unit: mm

ITEM	P	P0	W	F	E	D	K	t
Spec.	12.0	4.0	16.0	7.5	1.75	$\Phi 1.55$	6.7	0.5
Tolerance	± 0.1	± 0.1	± 0.3	± 0.1	± 0.1	± 0.05	± 0.1	± 0.05



■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

Gas Discharge Tube: GD5 Series

2-Electrode $\Phi 5.5 \times T6$ mm Type



■ Features

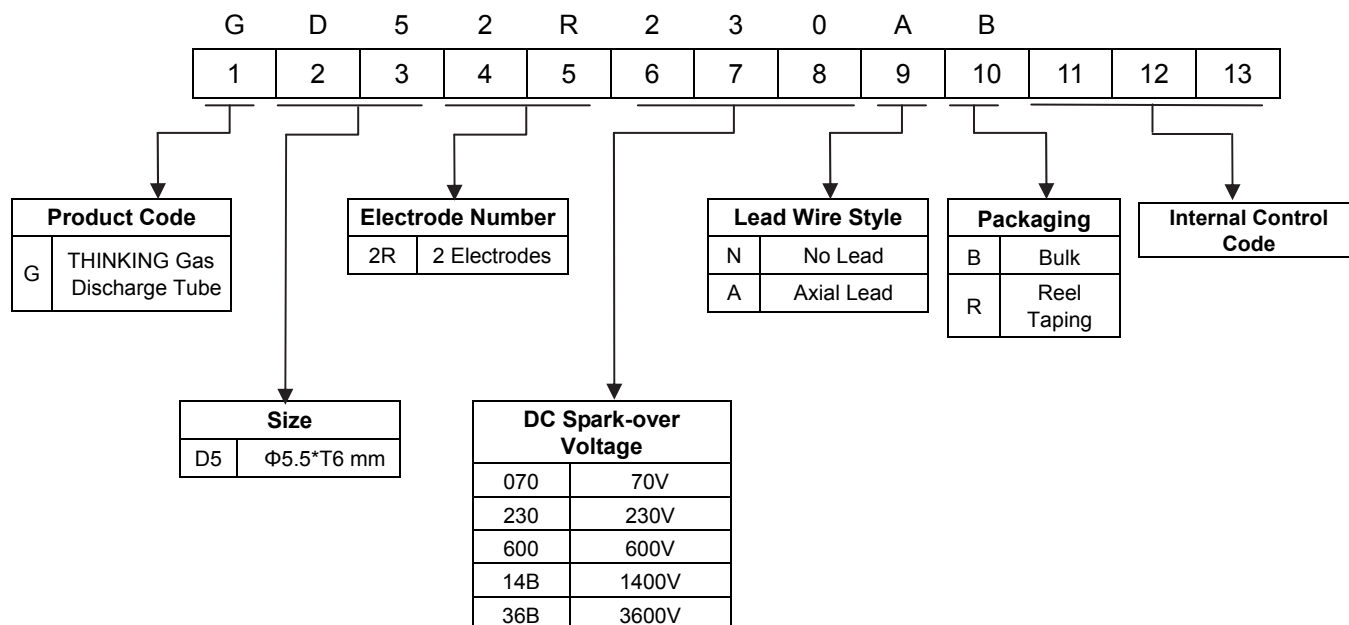
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without leads
4. DC spark-over voltage: 70~3600V
5. Low capacitance
6. Agency recognition: UL / cUL
7. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GD5 Series

2-Electrode $\Phi 5.5 \times T6$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals	
	100V/S	100V/μs	1KV/μs	1 time	10 times	100A	50Hz 1Sec	Single 9 Cycles	<150ms				
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)			(GΩ)	(pF)
GD52R070□□	70±20%	700	800	10	5	300	5	15	52	1	1		√
GD52R075□□	75±20%	700	800						52				√
GD52R090□□	90±20%	600	700						52				√
GD52R120□□	120±20%	600	700						52				√
GD52R130□□	130±20%	600	700						52				√
GD52R145□□	145±20%	600	700						52				√
GD52R230□□	230 ±20%	600	700						80				√
GD52R250□□	250 ±20%	600	700						80				√
GD52R300□□	300 ±20%	700	900						150				√
GD52R350□□	350 ±20%	700	900						150				√
GD52R400□□	400 ±20%	800	1000						150				√
GD52R470□□	470 ±20%	900	1100						150				√
GD52R600□□	600±20%	1300	1500	5	2.5		2.5	5	150				√
GD52R800□□	800±20%	1500	1700						150				√
GD52R10B□□	1000±20%	1600	1800	3	1.5		2	4	150			√	
GD52R12B□□	1200±20%	1800	2000						150			√	
GD52R14B□□	1400±20%	2200	2400						150			√	
GD52R16B□□	1600±20%	2400	2600						150			√	
GD52R20B□□	2000±20%	2800	3000						150			√	
GD52R25B□□	2500±20%	3300	3500						150			√	
GD52R30B□□	3000±20%	3800	4000						150			√	
GD52R35B□□	3500±20%	4300	4500						150			√	
GD52R36B□□	3600±20%	4400	4600						150			√	

Note 1: The first □ is the style of lead wire, and the second □ is packaging.

Note 2: UL 497B File No: E245070, UL 1449 3rd File No: E314979

Note 3: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
70-90V	50V
120-400V	100V
470-800V	250V
1000-2000V	500V
2500-4000V	1000V

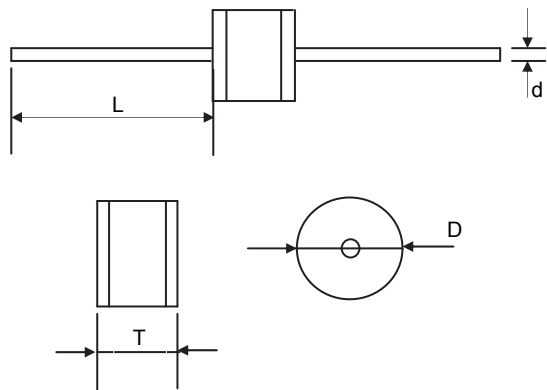
Gas Discharge Tube: GD5 Series

2-Electrode $\Phi 5.5 \times T6$ mm Type



Dimension

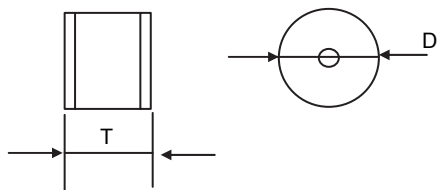
$\square$ = A (Axial lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	5.5	+0.3/-0.5
T	6.0	+0.3/-0.5
L	20	Min.
d	0.8	±0.05

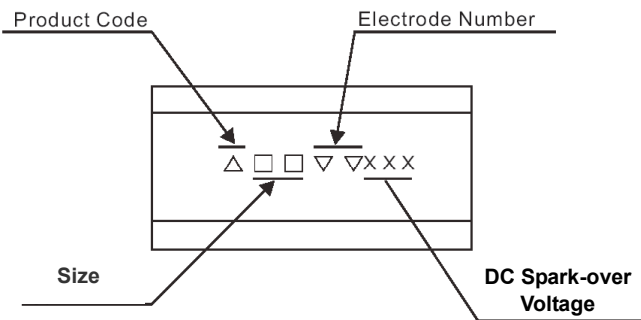
$\square$ = N (No lead type)



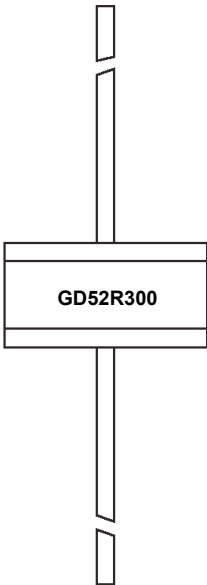
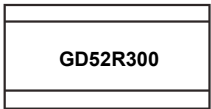
Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	5.5	+0.3/-0.5
T	6.0	+0.3/-0.5

Marking



Example



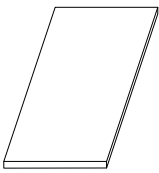
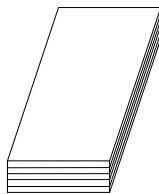
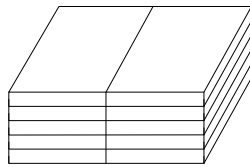
Gas Discharge Tube: GD5 Series

2-Electrode $\Phi 5.5 \times T6$ mm Type



■ Packaging

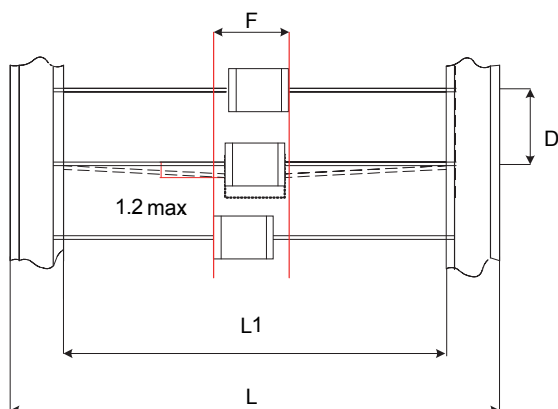
● Bulk

Plastic Tray (265×147×10mm)	Inner Box (270×145×50mm)	Outside Box (310×280×275mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

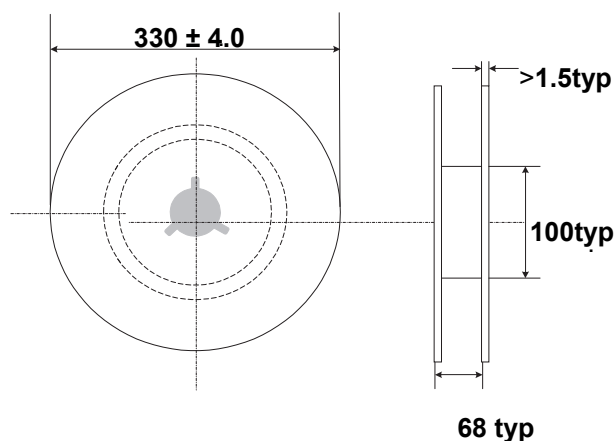
● Taping

For 2-electrode Axial Lead GDT: 500 PCS/Reel

Unit: mm



Item	Dimension	
	Spec.	Tolerance
L1	52	± 2
L	64	± 3
D	10	± 0.5
F	T + 1.4	Max.



■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

Gas Discharge Tube: GD8 Series

2-Electrode $\Phi 8.0 \times T6$ mm Type



■ Features

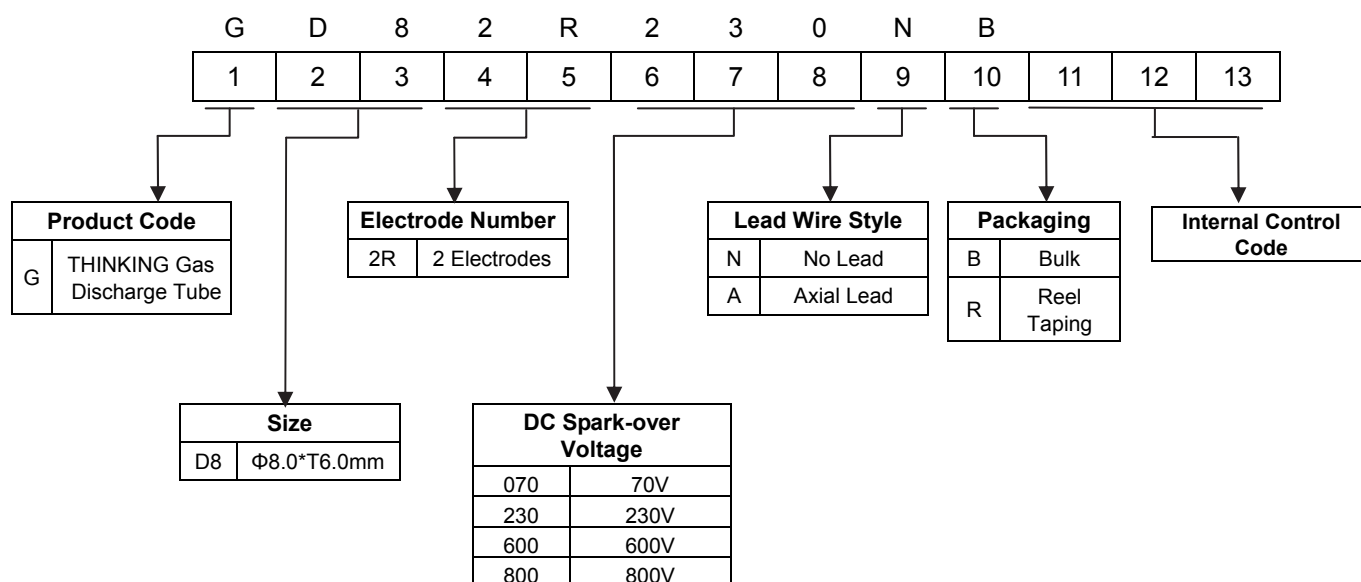
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without leads
4. DC spark-over voltage: 70~800V
5. Low capacitance
6. Agency recognition: UL / cUL
7. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GD8 Series

2-Electrode $\Phi 8.0 \times T6$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals	
	100V/S	100V/ μ s	1KV/ μ s	1 time	10 times	100A	50Hz, 1Sec	Single 9 Cycles	<150ms				
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(pF)	UL1449/cUL	UL 497B
GD82R070□	70 $\pm$ 20%	500	600	15	10	500	5	65	52	1	1.5		√
GD82R075□	75 $\pm$ 20%	500	600						52				√
GD82R090□	90 $\pm$ 20%	500	600						52				√
GD82R120□	120 $\pm$ 20%	500	700						52				√
GD82R130□	130 $\pm$ 20%	500	700						52				√
GD82R145□	145 $\pm$ 20%	500	700						52				√
GD82R230□	230 $\pm$ 20%	500	700						80				√
GD82R250□	250 $\pm$ 20%	500	700						135				√
GD82R300□	300 $\pm$ 20%	700	900						150				√
GD82R350□	350 $\pm$ 20%	700	900						150				√
GD82R400□	400 $\pm$ 20%	800	1000						150				√
GD82R470□	470 $\pm$ 20%	900	1100						150				√
GD82R600□	600 $\pm$ 20%	1100	1300	10	5				150			√	√
GD82R800□	800 $\pm$ 20%	1300	1500						150			√	√

Note1: The first □ is the style of lead wire, and the second □ is packaging.

Note2: UL 497B File No: E245070, UL 1449 3rd File No:E314979

Note 3: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
70-90V	50V
120-400V	100V
470-800V	250V

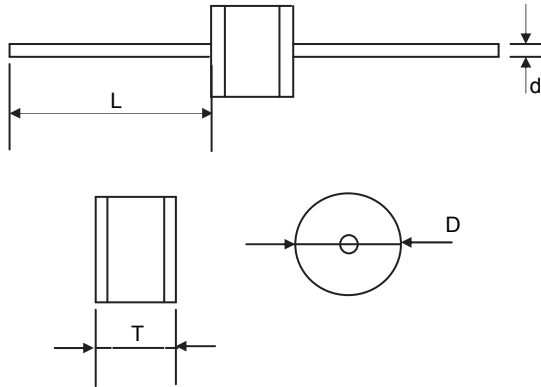
Gas Discharge Tube: GD8 Series

2-Electrode $\Phi 8.0 \times T6$ mm Type



■ Dimension

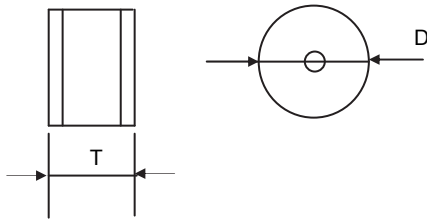
□ = A (Axial lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	6.0	+0.3/-0.5
L	20	Min.
d*	0.8	±0.05

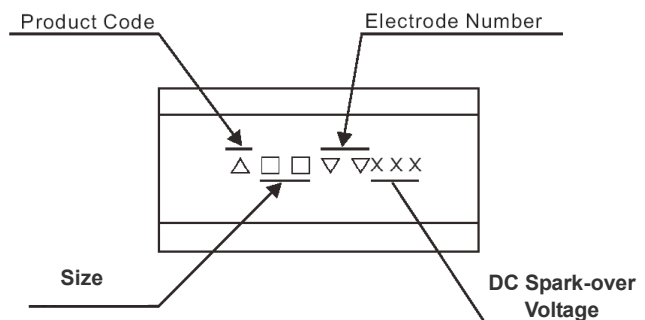
□ = N (No lead type)



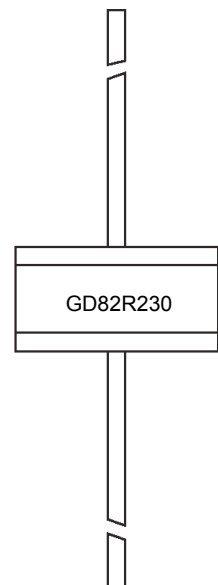
Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	6.0	+0.3/-0.5

■ Marking



Example



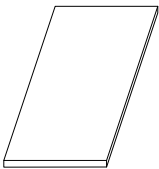
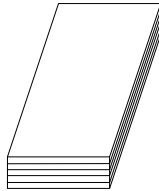
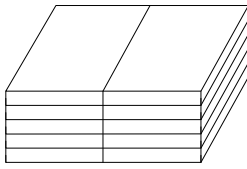
Gas Discharge Tube: GD8 Series



2-Electrode $\Phi 8.0 \times T6$ mm Type

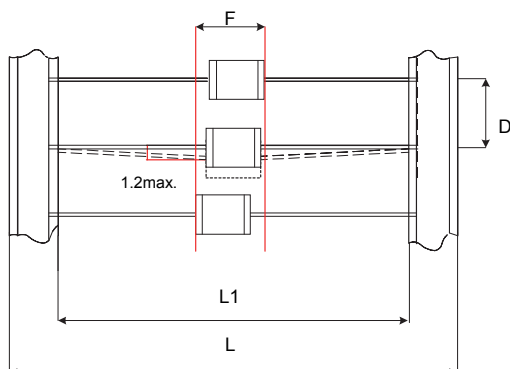
■ Packaging

● Bulk

Plastic Tray (252×135×10mm)	Inner Box (270×145×50mm)	Outside Box (310×280×275mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

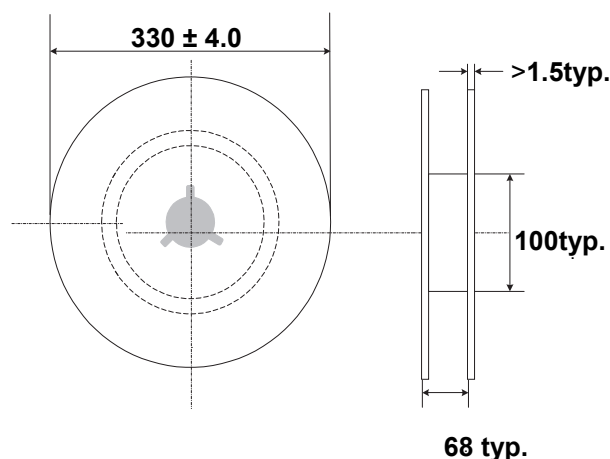
● Taping

For 2-electrode Axial Lead GDT: 500 PCS/Reel



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
L1	52	± 2
L	64	± 3
D	10	± 0.5
F	T+ 1.4	Max.



■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
2. Relative Humidity: $\leq 75\% \text{RH}$
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

Gas Discharge Tube: GD8-H Series

2-Electrode $\Phi 8.0 \times T6$ mm High Surge Type



■ Features

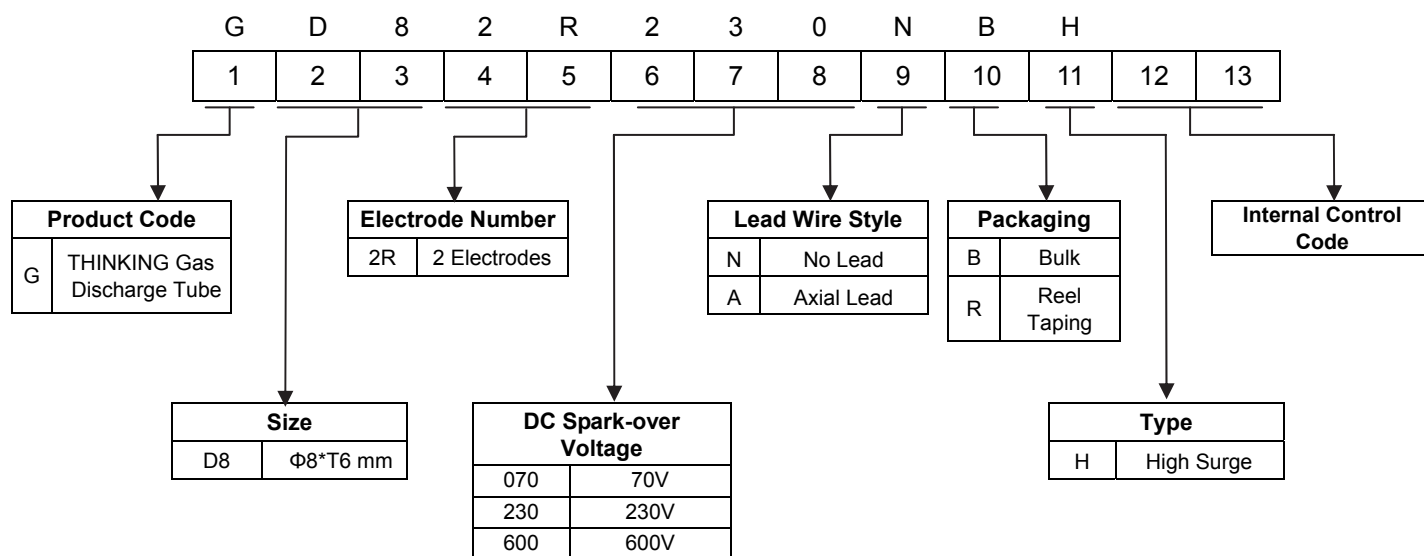
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without Leads
4. DC spark-over voltage: 70V ~600V
5. Low capacitance
6. High transient current capability
7. Agency recognition: UL / cUL
8. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GD8-H Series

2-Electrode $\Phi 8.0 \times T6$ mm High Surge Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		DC Holdover voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals
	100V/S	100V/μs	1KV/μs	1 time	10 times	100A	50Hz, 1Sec	Single 9 Cycles	<150ms			
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)			
GD82R070□□H	70±20%	500	600	20	15	500	20	65	52	10	1.5	√
GD82R075□□H	75±20%	500	600						52			√
GD82R090□□H	90±20%	500	600						52			√
GD82R120□□H	120±15%	500	700						52			√
GD82R130□□H	130±15%	500	700						52			√
GD82R145□□H	145±15%	500	700						52			√
GD82R230□□H	230±15%	500	700						80			√
GD82R250□□H	250±15%	500	700						135			√
GD82R300□□H	300±15%	700	900						150			√
GD82R350□□H	350±15%	700	900						150			√
GD82R400□□H	400±15%	800	1000						150			√
GD82R470□□H	470±15%	900	1100						150			√
GD82R600□□H	600±15%	1100	1300						150			√

Note1: The first □ is the style of lead wire, and the second □ is packaging.

Note2: H = High Surge Series

Note3: UL 497B File No. E245070

Note 4: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
70-90V	50V
120-400V	100V
470-600V	250V

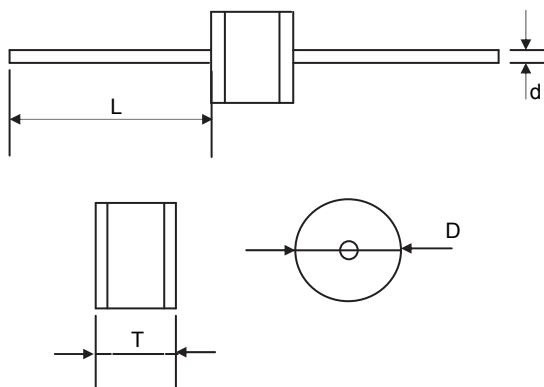
Gas Discharge Tube: GD8-H Series

2-Electrode $\Phi 8.0 \times T6$ mm High Surge Type



■ Dimension

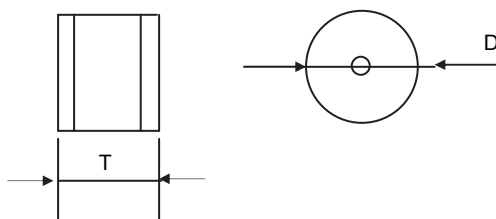
□ = A (Axial lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	6.0	+0.3/-0.5
L	20	Min.
d	0.8	±0.05

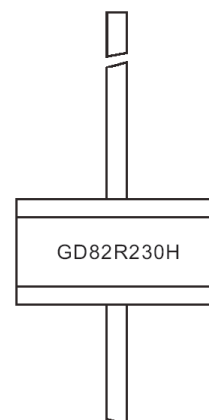
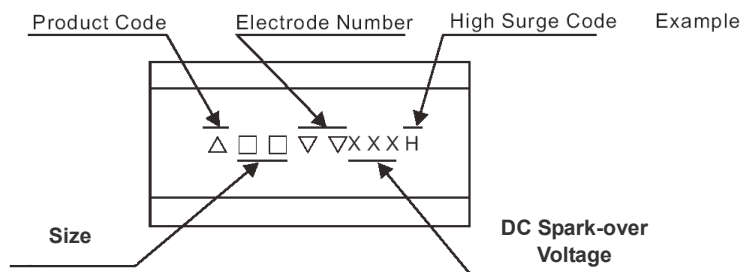
□ = N (No lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	6.0	+0.3/-0.5

■ Marking



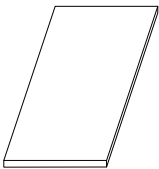
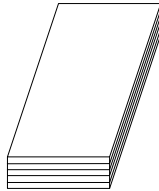
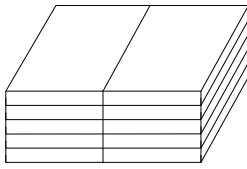
Gas Discharge Tube: GD8-H Series



2-Electrode $\Phi 8.0 \times T6$ mm High Surge Type

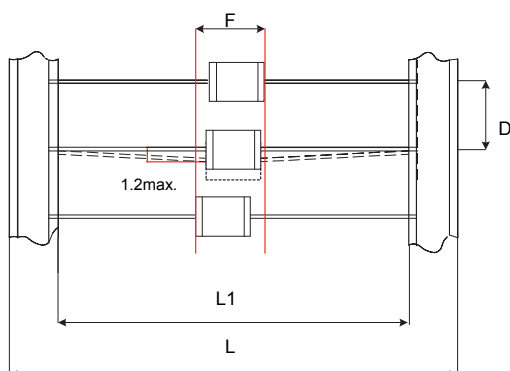
■ Packaging

● Bulk

Plastic Tray (252×135×10mm)	Inner Box (270×145×50mm)	Outside Box (310×280×275mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

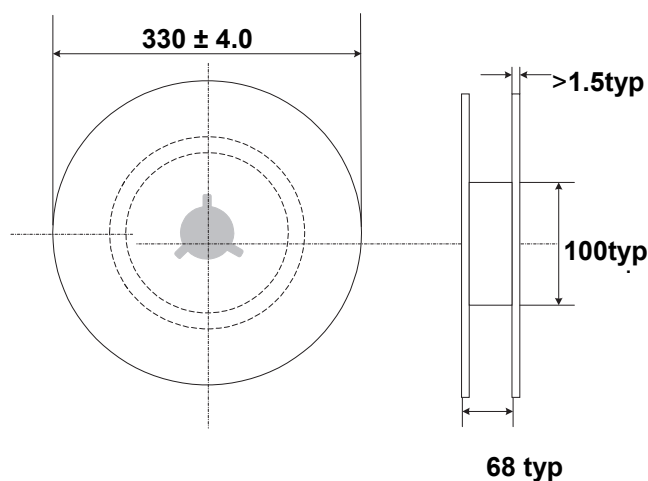
● Taping

For 2-electrode axial lead GDT: 500 PCS/Reel



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
L1	52	± 2
L	64	± 3
D	10	± 0.5
F	T of Gas Tube + 1.4	Max.



■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
2. Relative Humidity: $\leq 75\% \text{RH}$
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

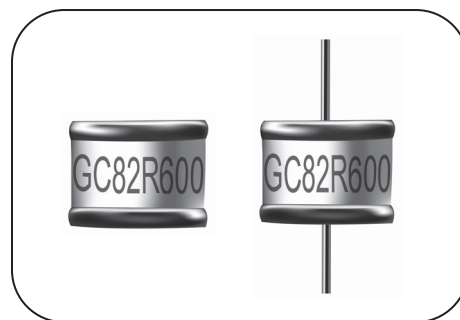
Gas Discharge Tube: GC8 Series

2-Electrode $\Phi 8.0 \times T8$ mm High Voltage Type



■ Features

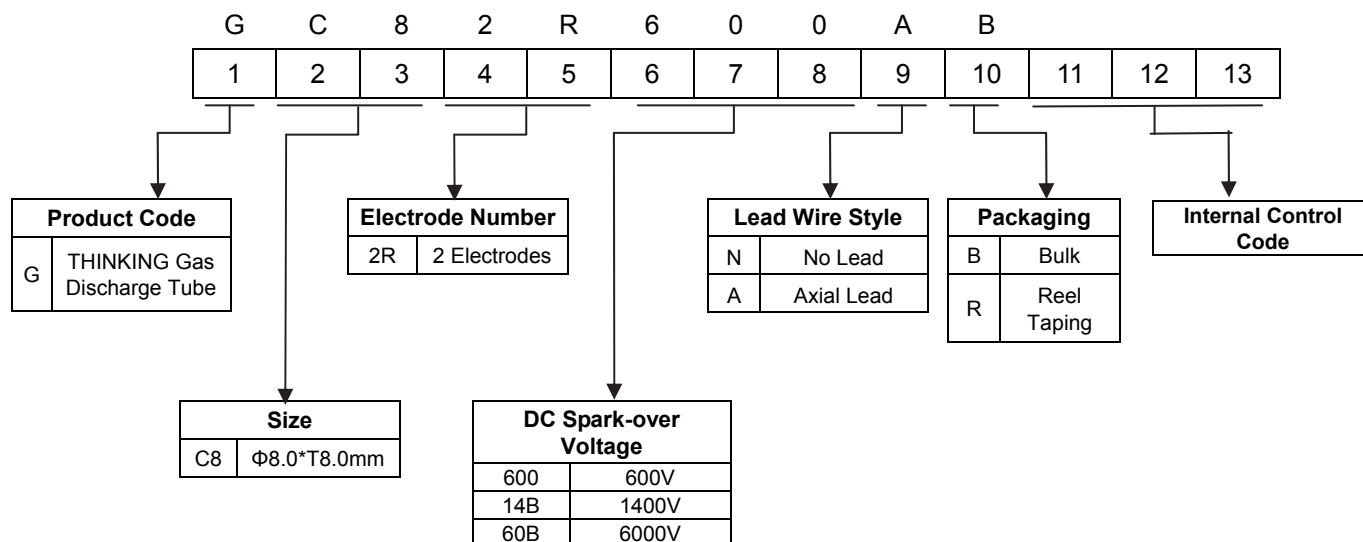
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without leads
4. DC spark-over voltage: 600~6000V
5. Low capacitance
6. Agency recognition :UL / cUL
7. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Modem
2. xDSL splitter
3. CATV system
4. Power supplier
5. Consumer electronics
6. Communication lines

■ Part Number Code



Gas Discharge Tube: GC8 Series

2-Electrode $\Phi 8.0 \times T8$ mm High Voltage Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals
	100V/S	100V/μs	1KV/μs	1 time	10 times	100A	50Hz 1Sec	Single 9 Cycles			
	(V)	(V)	(V)	(KA)		(Times)	(A)				
GC82R600□□	600±20%	1000	1100	8	5	100	5	10	1	1.5	√
GC82R800□□	800±20%	1100	1200								√
GC82R10B□□	1000±20%	1300	1400								√
GC82R14B□□	1400±20%	2100	2200								√
GC82R16B□□	1600±20%	2300	2400								√
GC82R20B□□	2000±20%	2700	2800								√
GC82R25B□□	2500±20%	3500	3600	5	3	300*	3	5			√
GC82R27B□□	2700±20%	3600	3800								√
GC82R30B□□	3000±20%	4100	4200								√
GC82R35B□□	3500±20%	4900	5000								√
GC82R40B□□	4000±20%	5300	5500			100	2.5	5			√
GC82R45B□□	4500±20%	5800	6000								√
GC82R50B□□	5000±20%	6000	6400								√
GC82R60B□□	6000±20%	7000	7800								√

Note1: The first □ is the style of lead wire, and the second □ is packaging.

Note2: * means products measured with an 8/20 μ s waveform, 100A

Note3: UL 1449 3rd File No: E314979

Note4: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
600-1000V	250V
1400-2000V	500V
2500-6000V	1000V

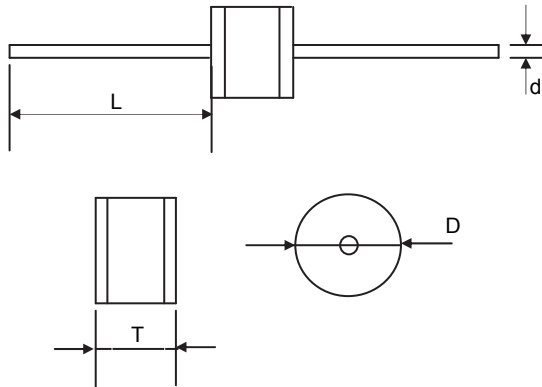
Gas Discharge Tube: GC8 Series

2-Electrode $\Phi 8.0 \times T8$ mm High Voltage Type



■ Dimension

□ = A (Axial lead type)

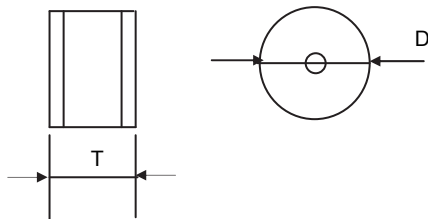


Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	8.0&10.0	+0.6/-0.1
L	20	Min.
d	0.8	±0.05

Note: T of GC82R50B□□ and GC82R60B□□ parts is 10mm, others are 8mm.

□ = N (No lead type)

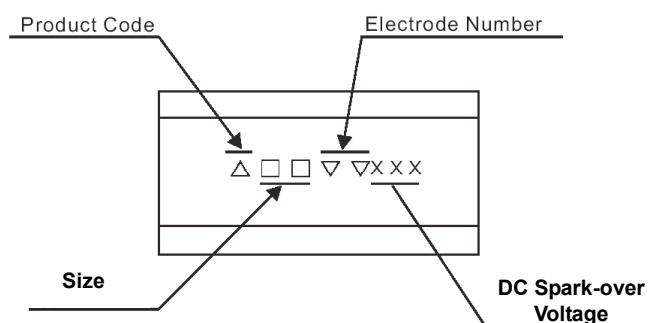


Unit: mm

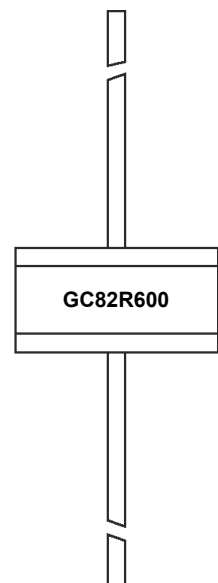
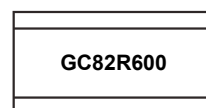
Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.3/-0.5
T	8.0&10.0	+0.6/-0.1

Note: T of GC82R50B□□ and GC82R60B□□ parts is 10mm, others are 8mm.

■ Marking



Example



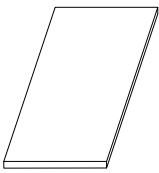
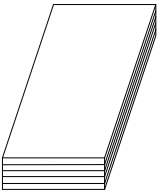
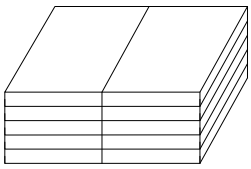
Gas Discharge Tube: GC8 Series

2-Electrode $\Phi 8.0 \times T8$ mm High Voltage Type



■ Packaging

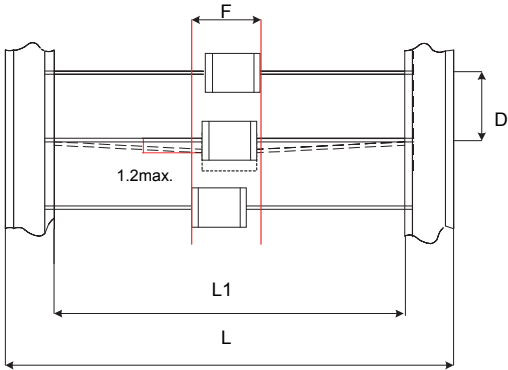
● Bulk

Plastic Tray (252×135×10mm)	Inner Box (270×145×50mm)	Outside Box (310×280×275mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

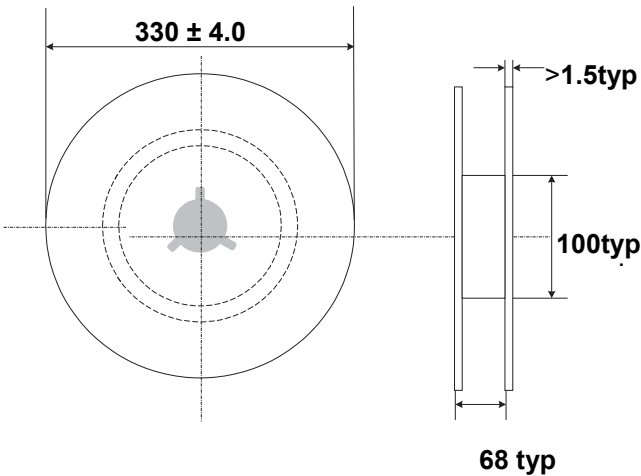
● Taping

For 2-electrode Axial Lead GDT: 500 PCS/Reel

Unit: mm



Item	Dimensions	
	Spec.	Tolerance
L1	52	±2
L	64	±3
D	10	±0.5
F	T + 1.4	Max.



■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: -10℃ ~+40℃
2. Relative Humidity: ≤75%RH
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

Gas Discharge Tube: GC6 Series



3-Electrode $\Phi 6.0 \times T 8.0$ mm Type

■ Features

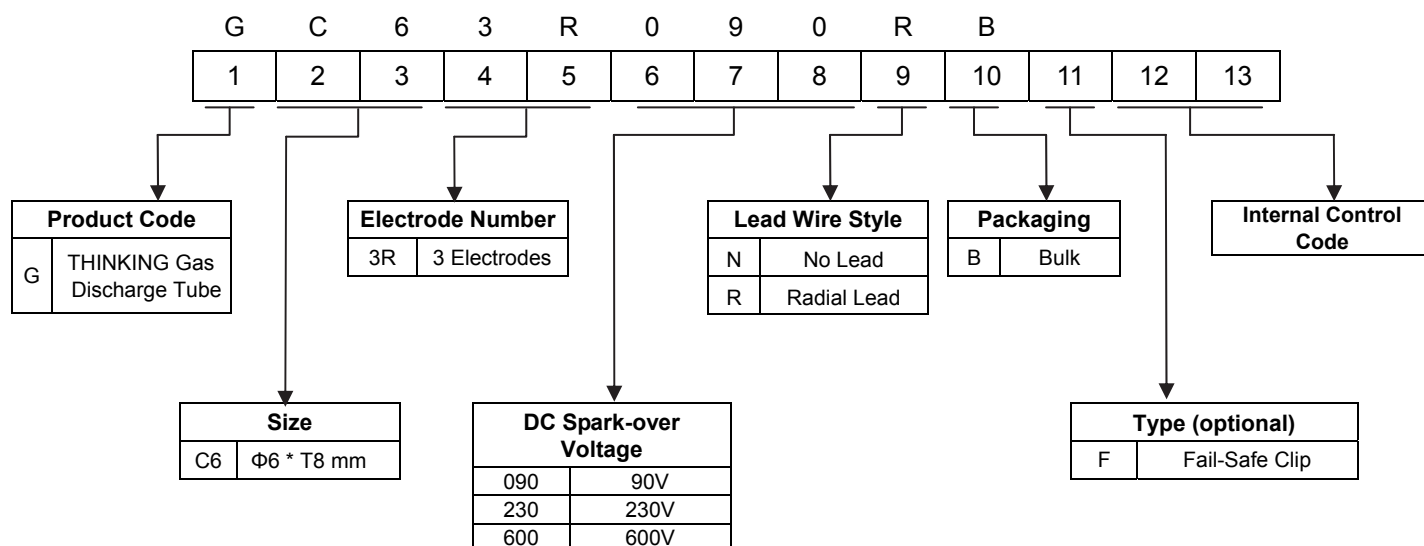
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without leads
4. Available with fail-safe clip
5. DC spark-over voltage: 90~600V
6. Low capacitance
7. Agency recognition :UL
8. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GC6 Series



3-Electrode $\Phi 6.0 \times T8.0$ mm Type

■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety Approval
	100V/S	100V/ μ s	1KV/ μ s	10 times	200 A	50Hz, 1Sec	<150ms			
	(V)	(V)	(V)	(KA)	Times	(A)	(V)			
GC63R090□□(F)	90 $\pm$ 20%	750	850	5	100	5	52	1	2	√
GC63R145□□(F)	145 $\pm$ 20%	750	850	5		5	52			√
GC63R200□□(F)	200 $\pm$ 20%	600	700	10		10	135			√
GC63R230□□(F)	230 $\pm$ 20%	600	700	10		10	135			√
GC63R250□□(F)	250 $\pm$ 20%	600	700	10		10	135			√
GC63R350□□(F)	350 $\pm$ 20%	650	750	5		5	150			√
GC63R400□□(F)	400 $\pm$ 20%	700	800	5		5	150			√
GC63R420□□(F)	420 $\pm$ 20%	700	800	5		5	150			√
GC63R470□□(F)	470 $\pm$ 20%	800	900	5		5	150			√
GC63R600□□(F)	600 $\pm$ 20%	900	1000	5		5	150			√

Note 1: The first □ is the style of lead wire, and the second □ is packaging

Note 2: F = with fail-safe clip for optional.

Note 3: UL 497B File No: E245070

Note 4: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
90V	50V
145-400V	100V
420-600V	250V

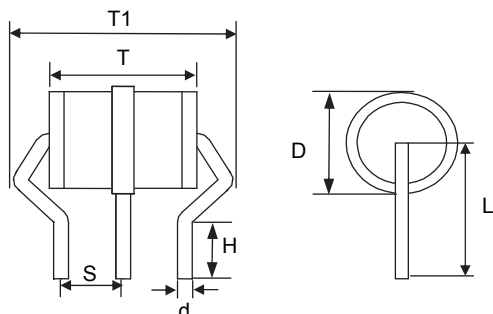
Gas Discharge Tube: GC6 Series



3-Electrode $\Phi 6.0 \times T8.0$ mm Type

■ Dimension

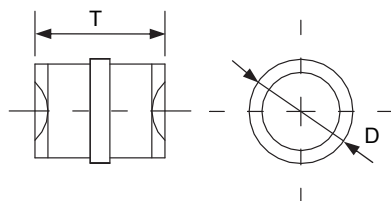
□ = R (Radial lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	6.0	+0.2/-0.5
T	8.5	±0.5
T1	11.5	+0.8/-0.5
L	7.5	±0.5
S	3.8	±0.3
d	0.8	±0.05
H	4.5	Min.

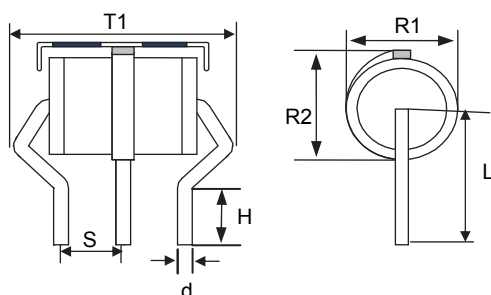
□ = N (No lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	6.0	+0.2/-0.5
T	8.5	±0.5

F = with fail-safe clip for optional



Unit: mm

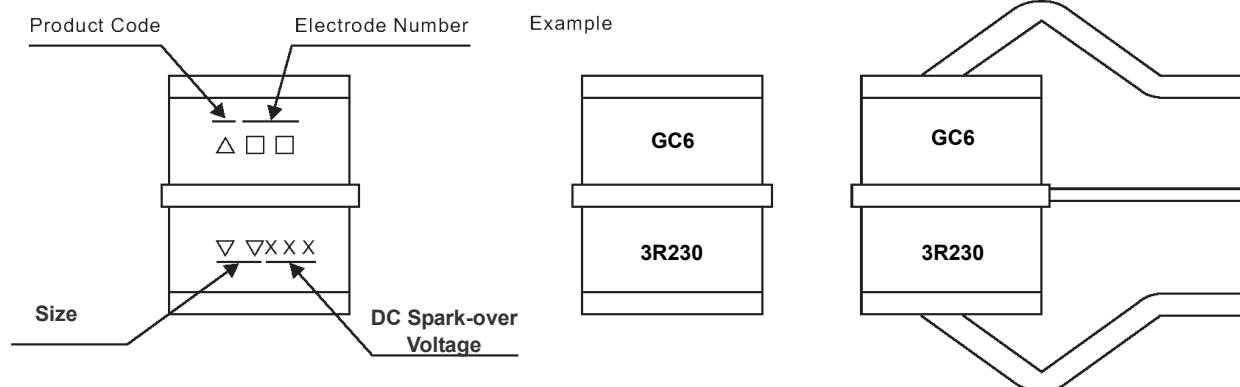
Item	Dimensions	
	Spec.	Tolerance
R1	6.3	±0.3
R2	7.6	±0.4
T1	11.5	+0.8/-0.5
L	7.5	±0.5
S	3.8	±0.3
d	0.8	±0.05
H	4.5	Min.

Gas Discharge Tube: GC6 Series



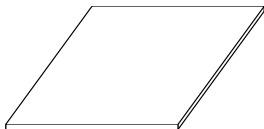
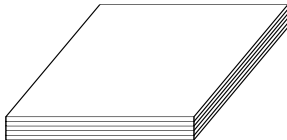
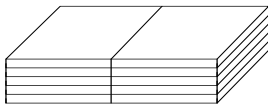
3-Electrode $\Phi 6.0 \times T 8.0$ mm Type

■ Marking



■ Packaging

● Bulk

Plastic Tray (200x210x10mm)	Inner Box (210x225x60mm)	Outside Box (450x245x345mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

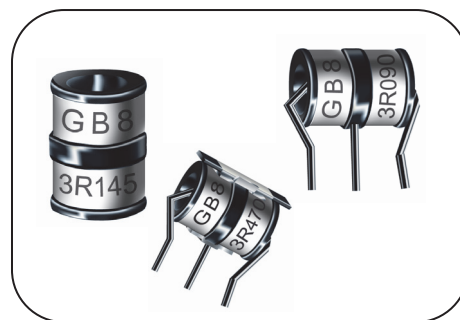
Gas Discharge Tube: GB8 Series



3-Electrode $\Phi 8.0 \times T10$ mm Type

■ Features

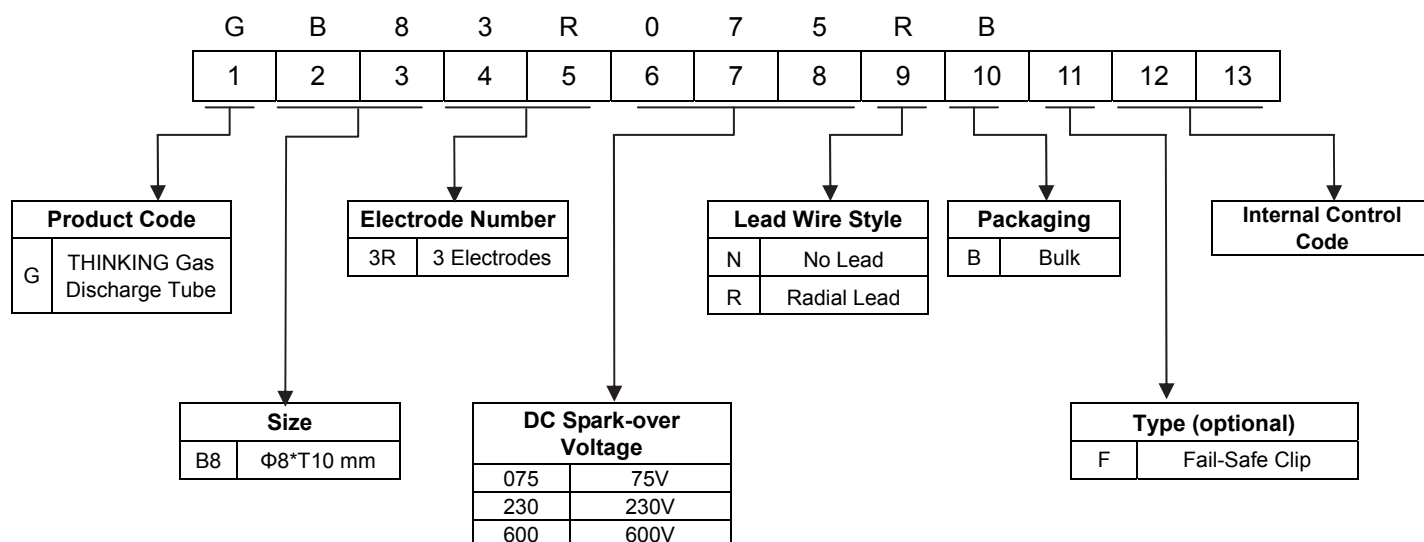
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. Available with or without leads
4. Available with fail-safe clip
5. DC spark-over voltage: 75~600V
6. Low capacitance
7. Agency recognition :UL
8. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GB8 Series

3-Electrode $\Phi 8.0 \times T10$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals
	100V/S	100V/ μ s	1KV/ μ s	10 times	200 A	50Hz, 1Sec	<150ms			
	(V)	(V)	(V)	(KA)	Times	(A)	(V)			
GB83R075□□(F)	75 $\pm$ 20%	600	700	20	130	20	52	10	2	√
GB83R090□□(F)	90 $\pm$ 20%	600	700				52			√
GB83R145□□(F)	145 $\pm$ 20%	500	700				52			√
GB83R200□□(F)	200 $\pm$ 20%	500	700				135			√
GB83R230□□(F)	230 $\pm$ 20%	600	700				135			√
GB83R250□□(F)	250 $\pm$ 20%	600	700				135			√
GB83R350□□(F)	350 $\pm$ 20%	700	800				150			√
GB83R400□□(F)	400 $\pm$ 20%	800	900				150			√
GB83R470□□(F)	470 $\pm$ 20%	900	1000				150			√
GB83R600□□(F)	600 $\pm$ 20%	1000	1100				150			√

Note1 : The first □ is the style of lead wire, the second □ is packaging.

Note2 : F = With fail-safe clip for optional.

Note 3: UL 497B File No: E245070

Note 4: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
75-90V	50V
145-400V	100V
420-600V	250V

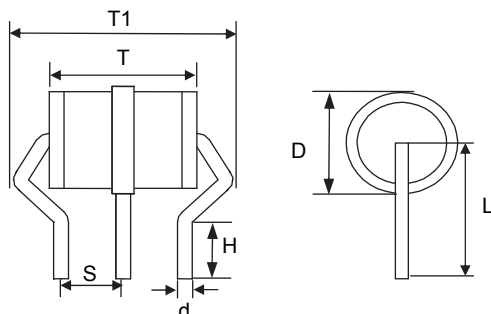
Gas Discharge Tube: GB8 Series



3-Electrode $\Phi 8.0 \times T10$ mm Type

■ Dimensions

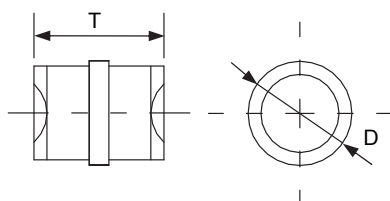
□ = R (Radial lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.2/-0.8
T	10.0	±0.5
T1	13.4	+0.8/-0.5
L	7.5	±0.5
S	4.4	±0.4
d	1.0	±0.05
H	4.5	Min.

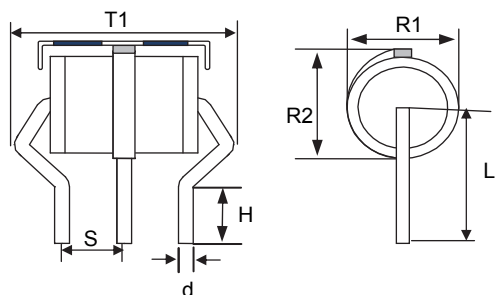
□ = N (No lead type)



Unit: mm

Item	Dimensions	
	Spec.	Tolerance
D	8.0	+0.2/-0.8
T	10.0	±0.5

F = with fail-safe clip for optional



Unit: mm

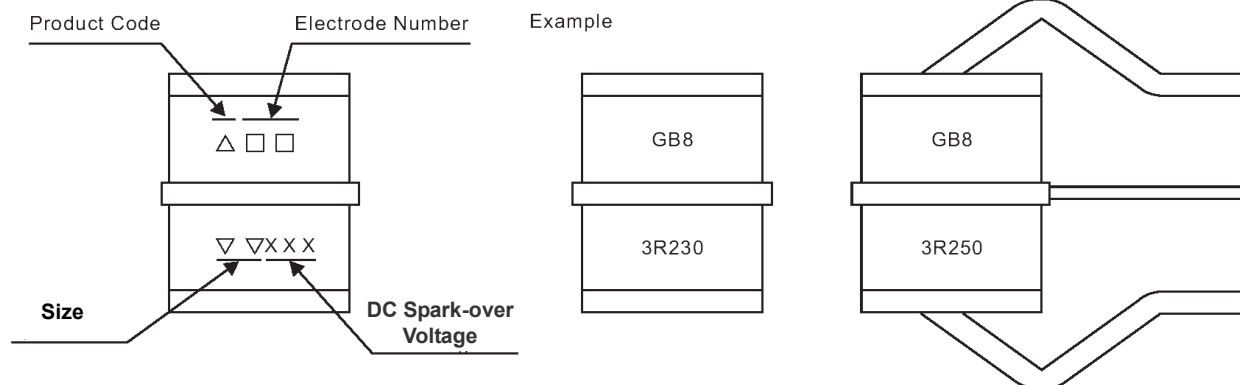
Item	Dimensions	
	Spec.	Tolerance
R1	8.1	±0.3
R2	9.8	±0.4
T1	13.4	+0.8/-0.5
L	7.5	±0.5
S	4.4	±0.4
d	1.0	±0.05
H	4.5	Min.

Gas Discharge Tube: GB8 Series

3-Electrode $\Phi 8.0 \times T10$ mm Type

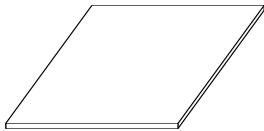
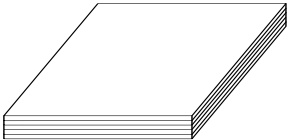


■ Marking



■ Packaging

● Bulk

Plastic Tray (200x210x10mm)	Inner Box (210x225x60mm)	Outside Box (450x245x345mm)
		
100 PCS/ Plastic Tray	500 PCS/ Box	5,000 PCS/ Carton

■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
2. Relative Humidity: $\leq 75\% \text{RH}$
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

Gas Discharge Tube: GQF Series

SMD 3-Electrode $\Phi 5 \times T7.2$ mm Type



■ Features

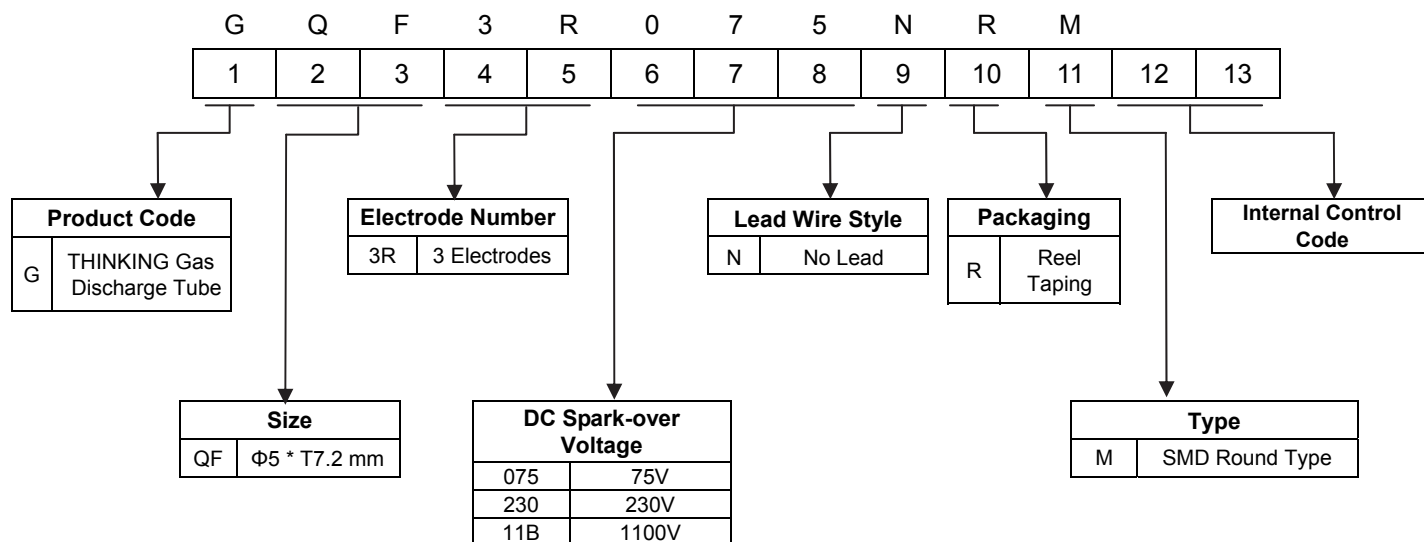
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 75~1100V
4. Low capacitance
5. Agency recognition :UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GQF Series

SMD 3-Electrode $\Phi 5 \times T7.2$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20μs)		Impulse Life (10/1000μs)	Normal Alternating Discharge Current		DC Holdover voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals	
	100V/S	100V/μs	1KV/μs	1 time	10 times	200A	50Hz 1Sec	Single 9 Cycles	<150ms				
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)				
GQF3R075NRM	75±20%	600	700	10	5	300	5	30	52	1	2		√
GQF3R090NRM	90±20%	500	600	10	5		5	30	52				√
GQF3R120NRM	120±20%	500	600	10	5		5	30	80				√
GQF3R150NRM	150±20%	500	600	10	5		5	30	80				√
GQF3R200NRM	200±20%	600	700	15	10		10	60	135				√
GQF3R230NRM	230±20%	600	700	15	10		10	60	135				√
GQF3R250NRM	250±20%	600	700	15	10		10	60	135				√
GQF3R350NRM	350±20%	650	750	15	10		10	60	135				√
GQF3R400NRM	400±20%	700	800	15	10		10	60	135				√
GQF3R420NRM	420±20%	700	800	15	10		10	60	135				√
GQF3R470NRM	470±20%	800	900	15	10		10	60	135				√
GQF3R600NRM	600±20%	900	1000	10	5		5	30	135				√
GQF3R800NRM	800±20%	1150	1400	10	5		5	30	135			√	
GQF3R11BNRM	1100±20%	1450	1750	10	5		5	30	135			√	

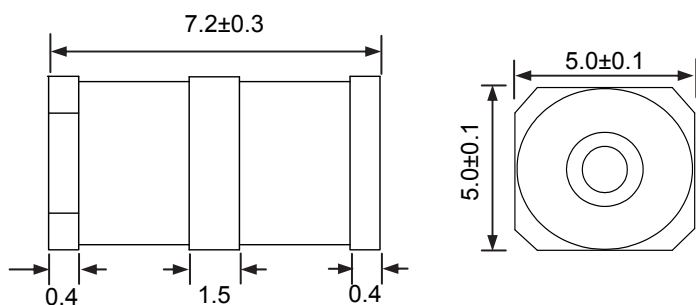
Note1: UL 497B File No: E245070, UL 1449 3rd File No:E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
75-90V	50V
120-400V	100V
420-1100V	250V

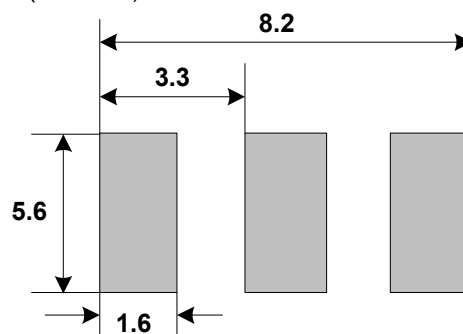
■ Dimension

(Unit: mm)



■ Recommended Pad Size

(Unit: mm)

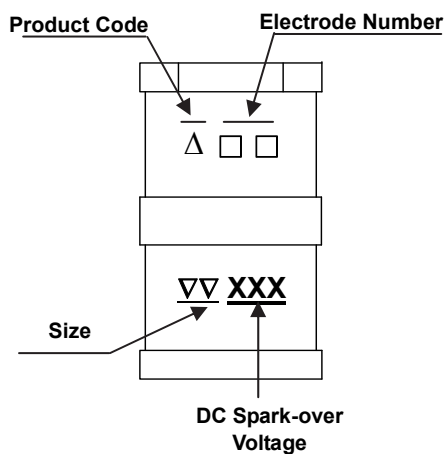


Gas Discharge Tube: GQF Series

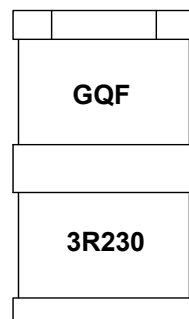
SMD 3-Electrode $\Phi 5 \times T 7.2$ mm Type



■ Marking

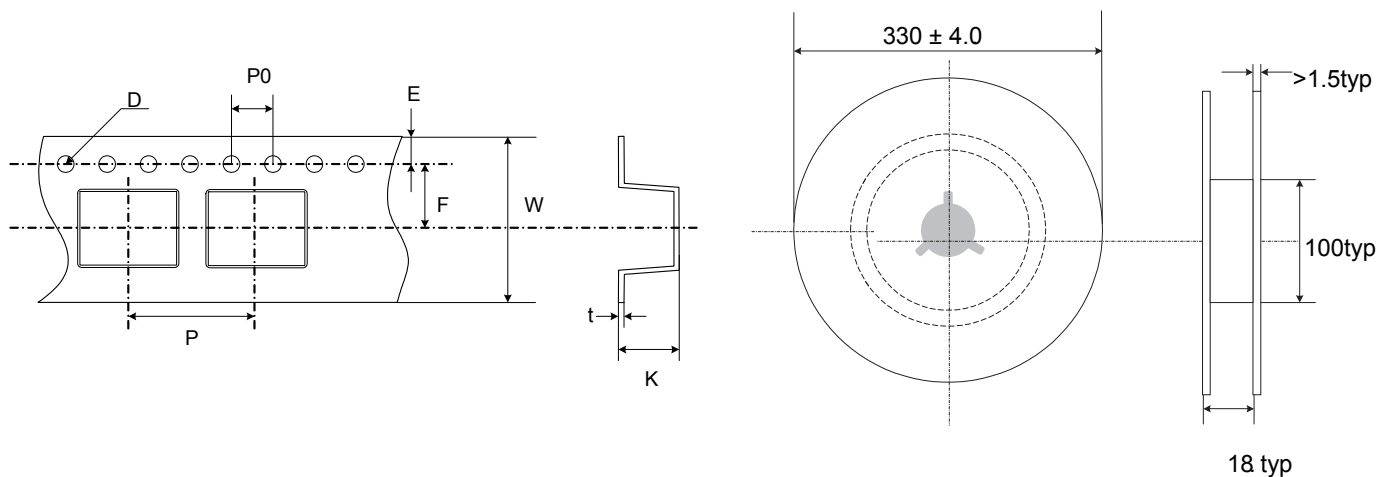


Example:



■ Packaging

● Taping



Quantity: 900pcs per reel (13")

Unit: mm

ITEM	P	P0	W	F	E	D	K	t
Spec.	12.0	4.0	16.0	7.5	1.75	$\Phi 1.55$	5.5	0.5
Tolerance	± 0.1	± 0.1	± 0.3	± 0.1	± 0.1	± 0.05	± 0.1	± 0.05

■ Warehouse Storage Conditions of Products

● Storage Conditions:

1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
2. Relative Humidity: $\leq 75\% \text{RH}$
3. Keep away from corrosive atmosphere and sunlight.

● Period of Storage: 1 year

Gas Discharge Tube: GQF-W Series

SMD 3-Electrodes $\Phi 5 \times T 7.2$ mm Symmetrical Type



■ Features

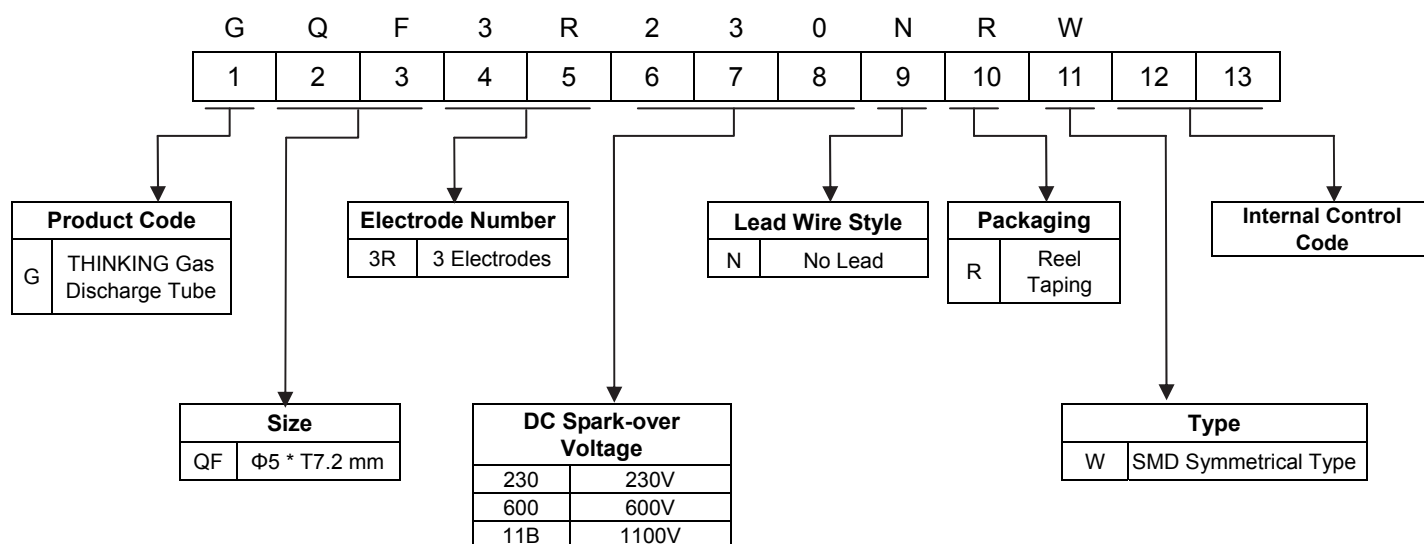
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 230~1100V
4. Low capacitance
5. Agency recognition: UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Cable Modem
2. xDSL
3. Set-Top Box
4. TV sets
5. Power supplier
6. Consumer electronics

■ Part Number Code



Gas Discharge Tube: GQF-W Series

SMD 3-Electrodes $\Phi 5 \times T7.2$ mm Symmetrical Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20 μ s)		Impulse Discharge Life (10/1000 μ s)	Nom. AC Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals	
	100V/S	100V/ μ s	1kV/ μ s	1 Time	10 Times	200A	50Hz 1Sec	Single 9 cycles	<150ms				
	(V)	(V)	(V)	(KA)		Times	(A)		(V)		(pF)	UL 1449	UL 497B
GQF3R230NRW	230 $\pm$ 20%	600	700	10	5	300	5	20	135	1	2		√
GQF3R250NRW	250 $\pm$ 20%	600	700	10	5		5	20	135				√
GQF3R350NRW	350 $\pm$ 20%	650	750	10	5		5	20	135				√
GQF3R400NRW	400 $\pm$ 20%	700	800	10	5		5	20	135				√
GQF3R420NRW	420 $\pm$ 20%	700	800	10	5		5	20	135				√
GQF3R470NRW	470 $\pm$ 20%	800	900	10	5		5	20	135				√
GQF3R600NRW	600 $\pm$ 20%	900	1000	10	5		5	20	135				√
GQF3R800NRW	800 $\pm$ 20%	1150	1400	10	5		5	20	135			√	
GQF3R11BNRW	1100 $\pm$ 20%	1450	1750	10	5		5	20	135			√	

Note 1: UL 497B File No: E245070 , UL 1449 3rd File No: E314979

Note 2: Insulation resistance test conditions:

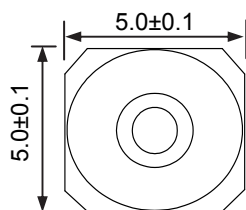
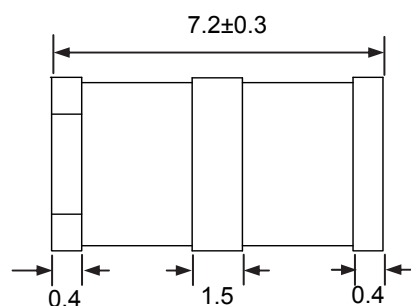
DC Spark-over Voltage	DC Measuring Voltage
145-400V	100V
420-1100V	250V

Note 3: DC Spark-over Voltage @ 100V/ μ s for L1 / L2 to ground and L1 to L2.

Note 4: Impulse Breakdown Voltage @ 100V/ μ s and 1000V/ μ s for L1 / L2 to ground.

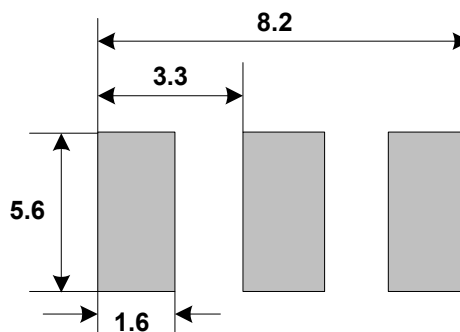
■ Dimension

(Unit: mm)



■ Recommended Pad Size

(Unit: mm)

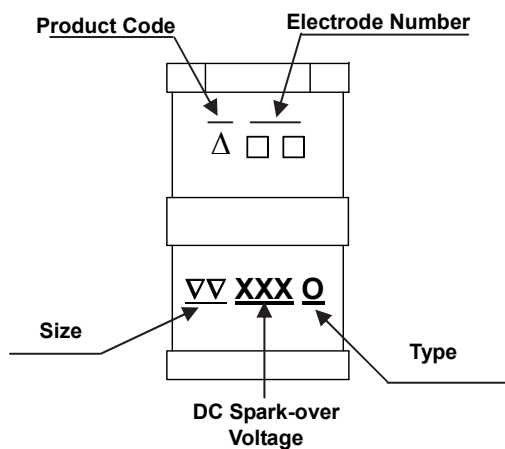


Gas Discharge Tube: GQF-W Series

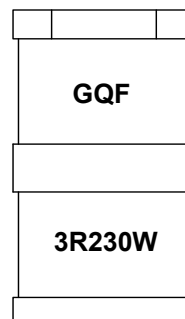
SMD 3-Electrodes $\Phi 5 \times T7.2$ mm Symmetrical Type



■ Marking

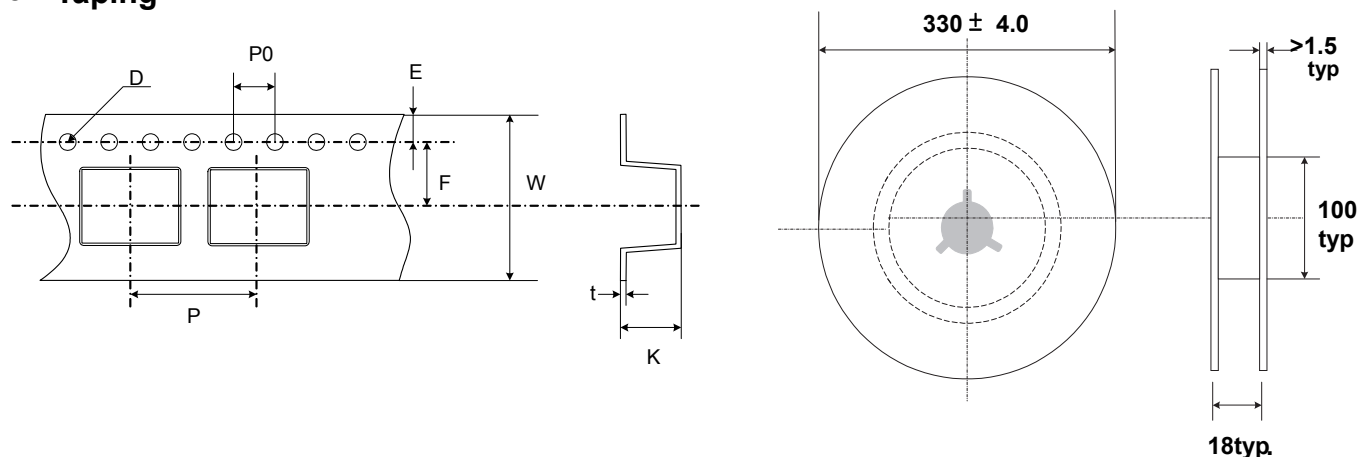


Example:



■ Packaging

● Taping



Quantity: 900pcs per reel (13")

Unit: mm

ITEM	P	P0	W	F	E	D	K	t
Spec.	12.0	4.0	16.0	7.5	1.75	$\Phi 1.55$	5.5	0.5
Tol.	± 0.1	± 0.1	± 0.3	± 0.1	± 0.1	± 0.05	± 0.1	± 0.05

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 - Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 - Relative Humidity: $\leq 75\% \text{RH}$
 - Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

Gas Discharge Tube: GJQ Series



2-Electrode $\Phi 20 \times T5.5$ mm Type

■ Features

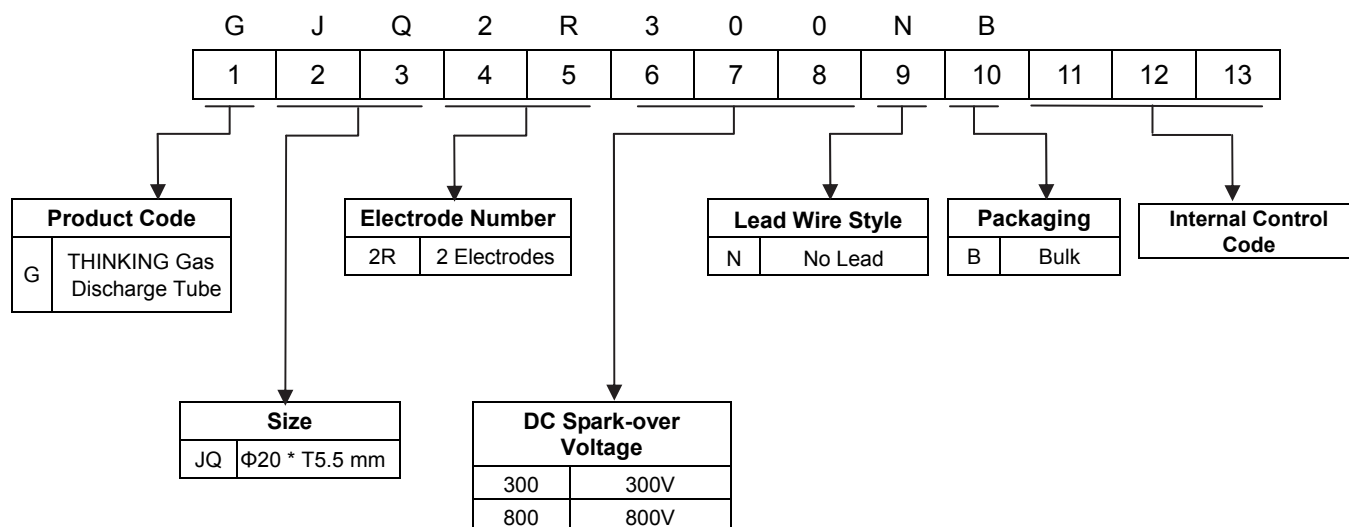
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 300~800V
4. Low capacitance
5. Agency recognition: UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Power system
2. Industrial equipment
3. SPD Module

■ Part Number Code



Gas Discharge Tube: GJQ Series

2-Electrode $\Phi 20 \times T5.5$ mm Type



■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Impulse Discharge Current (8/20 μ s)		Impulse Life (10/1000 μ s)	Normal Alternating Discharge Current		Minimum Insulation Resistance	Maximum Capacitance (1MHz)	Safety approvals
	100V/S	100V/ μ s	1KV/ μ s	1 time	10 times	300A	50Hz, 1Sec	Single 9 Cycles			
	(V)	(V)	(V)	(KA)		(Times)	(A)		(G Ω)	(pF)	
GJQ2R300NB	300 $\pm$ 20%	600	700	60	40	300	40	80	1	5	✓
GJQ2R350NB	350 $\pm$ 20%	700	800								✓
GJQ2R400NB	400 $\pm$ 20%	750	850								✓
GJQ2R420NB	420 $\pm$ 20%	750	850								✓
GJQ2R470NB	470 $\pm$ 20%	800	900								✓
GJQ2R600NB	600 $\pm$ 20%	900	1000								✓
GJQ2R800NB	800 $\pm$ 20%	1100	1200								✓

Note 1: UL 1449 3rd File No: E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
150-400V	100V
420-800V	250V

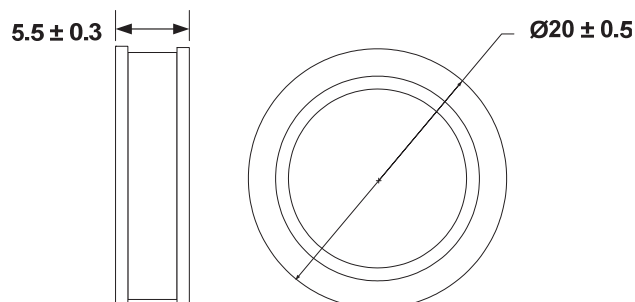
Gas Discharge Tube: GJQ Series



2-Electrode $\Phi 20 \times T5.5$ mm Type

■ Dimension

(Unit: mm)

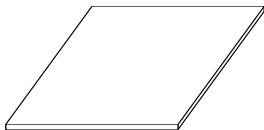
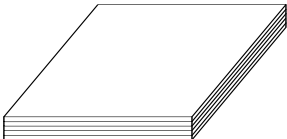
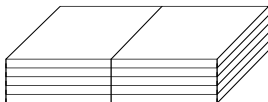


■ Marking



■ Packaging

● Bulk

Plastic Tray (262X146X10mm)	Inner Box (270X145X50mm)	Outside Box (310X280X275mm)
		
40 PCS/ Plastic Tray	200 PCS/ Box	2,000 PCS/ Carton

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage : 1 year

Gas Discharge Tube: GCC Series



2-Electrode $\Phi 11.8 \times T8$ mm Type

■ Features

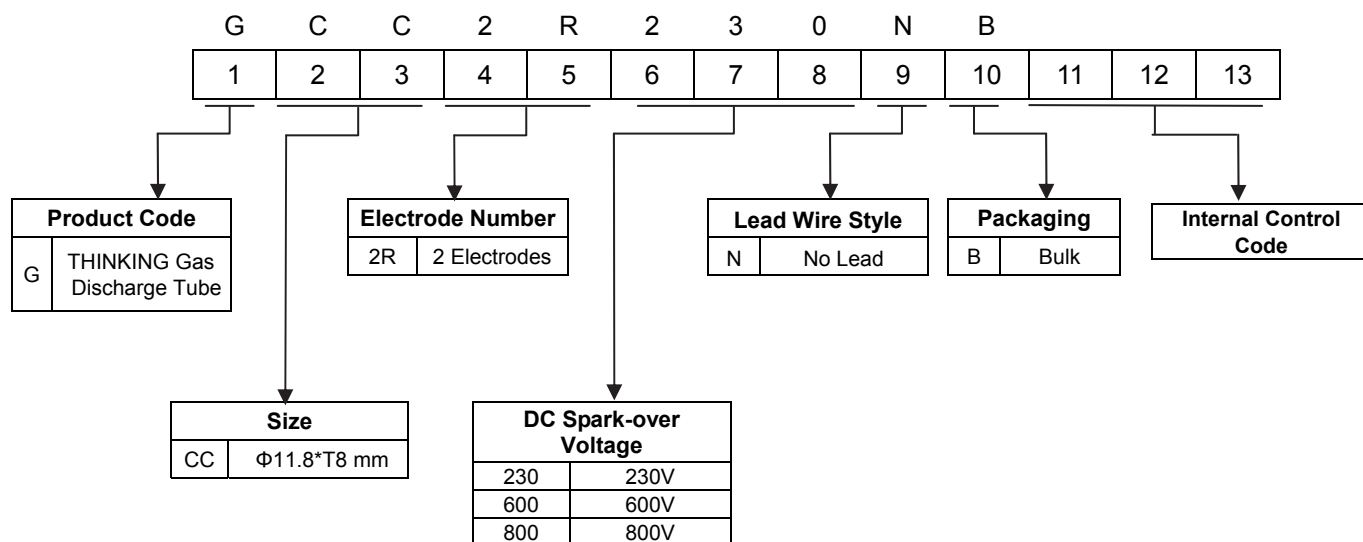
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 230~800V
4. Low capacitance
5. Agency recognition: UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Power system
2. Industrial equipment
3. SPD Module

■ Part Number Code



Gas Discharge Tube: GCC Series



2-Electrode $\Phi 11.8 \times T8$ mm Type

■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals
	100V/S	100V/ μ s	1KV/ μ s	1 time	5 times	500A	50Hz, 1Sec	Single 9 Cycles	<150ms			
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(pF)	
GCC2R230NB	230 $\pm$ 20%	600	700	40	20	400	20	120	135	1	10	✓
GCC2R250NB	250 $\pm$ 20%	600	700						135			✓
GCC2R300NB	300 $\pm$ 20%	700	800						150			✓
GCC2R350NB	350 $\pm$ 20%	800	900						150			✓
GCC2R420NB	420 $\pm$ 20%	900	1000						150			✓
GCC2R470NB	470 $\pm$ 20%	900	1100						150			✓
GCC2R600NB	600 $\pm$ 20%	1100	1300						150			✓
GCC2R700NB	700 $\pm$ 20%	1200	1400						150			✓
GCC2R800NB	800 $\pm$ 20%	1300	1500						150			✓

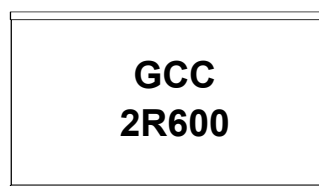
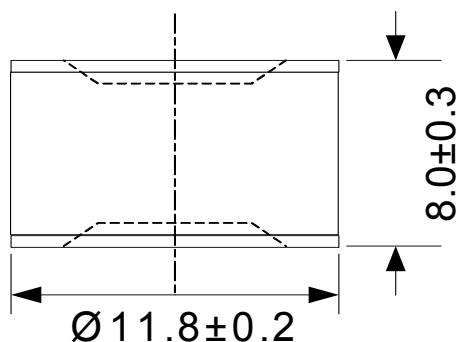
Note1: UL 1449 3rd File No:E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
230-350V	100V
420-800V	250V

■ Dimensions & Marking

(Unit: mm)



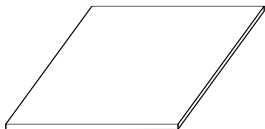
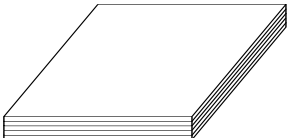
Gas Discharge Tube: GCC Series

2-Electrode $\Phi 11.8 \times T8$ mm Type



■ Packaging

- Bulk

Plastic Tray (263x143x10mm)	Inner Box (270x145x50mm)	Outside Box (310x280x275mm)
		
60 PCS/ Plastic Tray	180 PCS/ Box	1,800 PCS/ Carton

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

Gas Discharge Tube: GNC Series



2-Electrode $\Phi 11.8 \times T12$ mm Type

■ Features

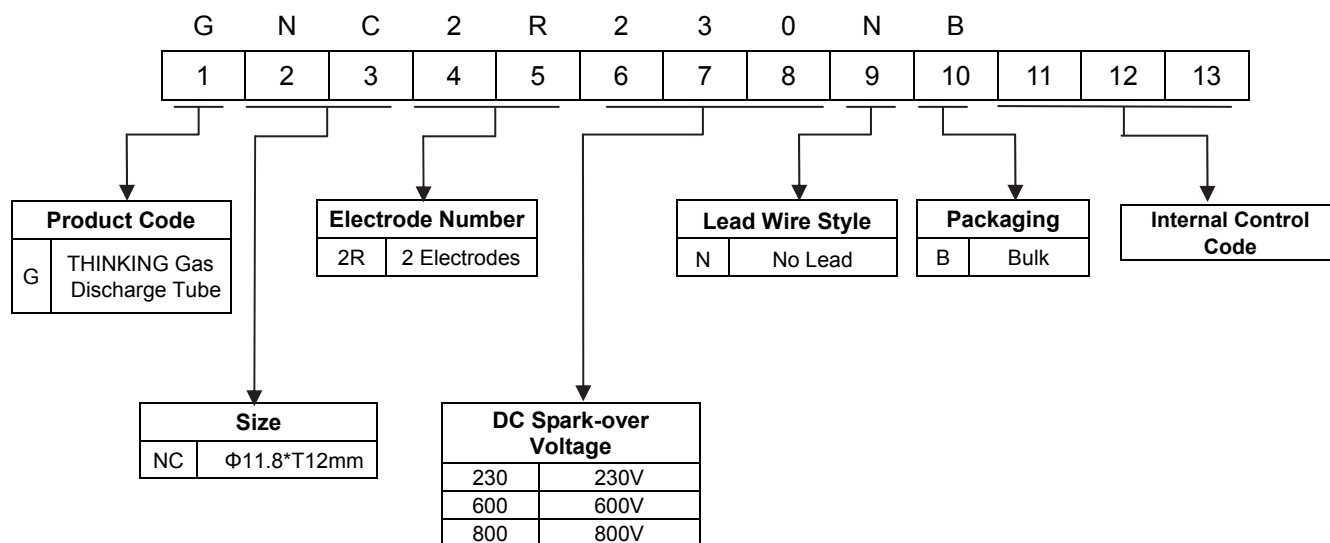
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 230~800V
4. Low capacitance
5. Agency recognition: UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Power system
2. Industrial equipment
3. SPD Module

■ Part Number Code



Gas Discharge Tube: GNC Series



2-Electrode $\Phi 11.8 \times T12$ mm Type

■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals
	100V/S	100V/ μ s	1KV/ μ s	1 time	5 times	500A	50Hz, 1Sec	Single 9 Cycles	<150ms			
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(pF)	
GNC2R230NB	230 $\pm$ 20%	600	700	60	40	400	40	200	135	1	10	✓
GNC2R250NB	250 $\pm$ 20%	600	700						135			✓
GNC2R300NB	300 $\pm$ 20%	700	800						150			✓
GNC2R350NB	350 $\pm$ 20%	800	900						150			✓
GNC2R420NB	420 $\pm$ 20%	900	1000						150			✓
GNC2R470NB	470 $\pm$ 20%	900	1100						150			✓
GNC2R600NB	600 $\pm$ 20%	1100	1300						150			✓
GNC2R700NB	700 $\pm$ 20%	1200	1400						150			✓
GNC2R800NB	800 $\pm$ 20%	1300	1500						150			✓

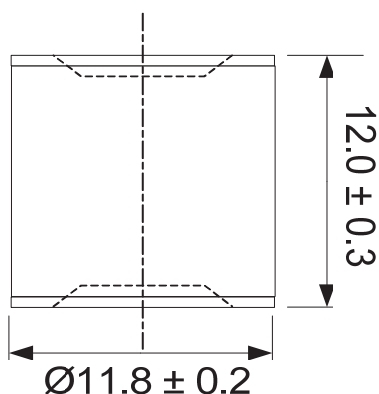
Note 1: UL 1449 3rd File No:E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
150-400V	100V
420-800V	250V

■ Dimension

(Unit: mm)

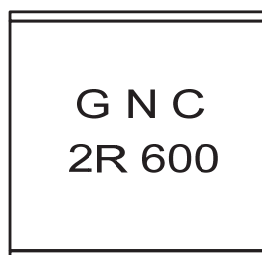


Gas Discharge Tube: GNC Series

2-Electrode $\Phi 11.8 \times T12$ mm Type

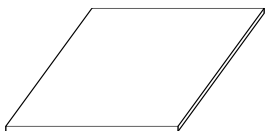
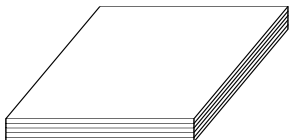


■ Marking



■ Packaging

● Bulk

Plastic Tray (263x143x10mm)	Inner Box (270x145x50mm)	Outside Box (310x280x275mm)
		
60 PCS/ Plastic Tray	180 PCS/ Box	1,800 PCS/ Carton

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
 2. Relative Humidity: $\leq 75\% \text{RH}$
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage : 1 year

Gas Discharge Tube: GMC Series



2-Electrode $\Phi 11.8 \times T17/17.5$ mm Type

■ Features

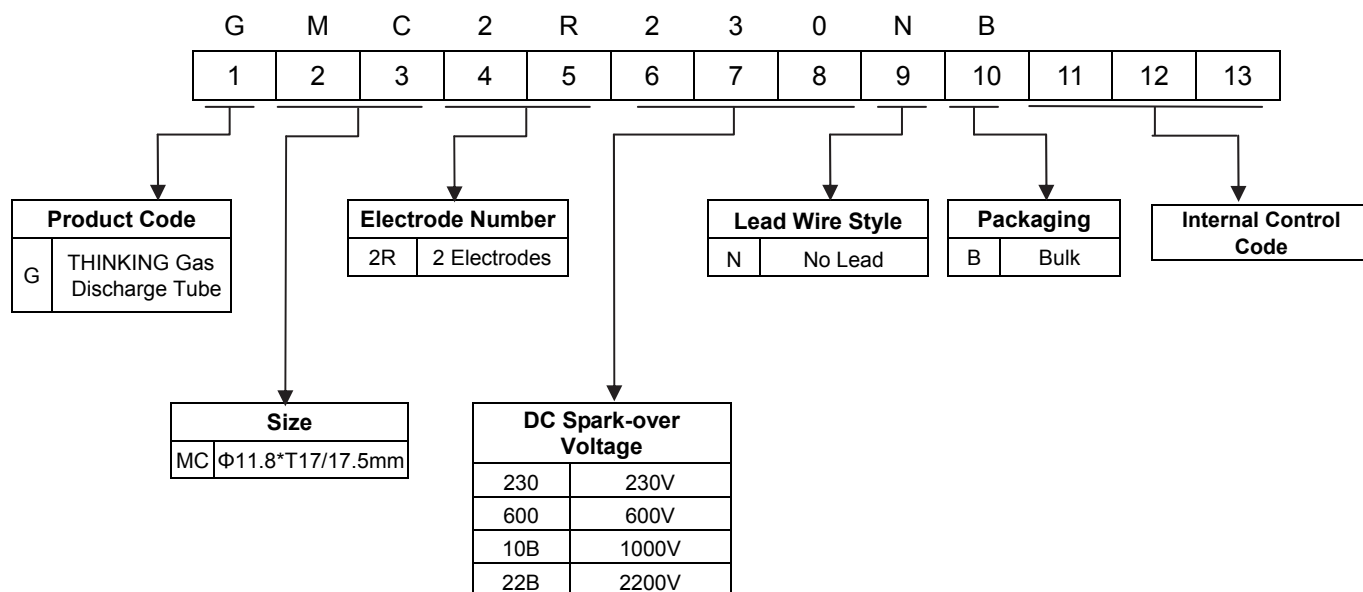
1. RoHS & HF compliant
2. Rugged ceramic-metal construction
3. DC spark-over voltage: 230~2200V
4. Low capacitance
5. Agency recognition: UL / cUL
6. Operating temperature : $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$
7. Storage temperature: $-40^{\circ}\text{C} \sim +115^{\circ}\text{C}$



■ Recommended Applications

1. Power system
2. Industrial equipment
3. SPD Module

■ Part Number Code



Gas Discharge Tube: GMC Series



2-Electrode $\Phi 11.8 \times T17/17.5$ mm Type

■ Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. 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)	Safety approvals
	100V/S	100V/ μ s	1KV/ μ s	1 time	5 times	500A	50Hz, 1Sec	Single 9 Cycles	<150ms			
	(V)	(V)	(V)	(KA)		(Times)	(A)		(V)		(pF)	
GMC2R230NB	230 $\pm$ 20%	600	700	100	60	400	60	300	135	1	10	✓
GMC2R250NB	250 $\pm$ 20%	600	700						135			✓
GMC2R300NB	300 $\pm$ 20%	700	800						150			✓
GMC2R350NB	350 $\pm$ 20%	800	900						150			✓
GMC2R420NB	420 $\pm$ 20%	900	1000						150			✓
GMC2R470NB	470 $\pm$ 20%	900	1100						150			✓
GMC2R600NB	600 $\pm$ 20%	1100	1300						150			✓
GMC2R700NB	700 $\pm$ 20%	1200	1400						150			✓
GMC2R800NB	800 $\pm$ 20%	1300	1500						150			✓
GMC2R10BNB	1000 $\pm$ 20%	1500	1700	25	20	400	20	120	150	10	1	✓
GMC2R12BNB	1200 $\pm$ 20%	1800	2000						150			✓
GMC2R14BNB	1400 $\pm$ 20%	2000	2200						150			✓
GMC2R16BNB	1600 $\pm$ 20%	2300	2500						150			✓
GMC2R20BNB	2000 $\pm$ 20%	2600	2700						150			✓
GMC2R22BNB	2200 $\pm$ 20%	2700	2800						150			✓

Note1: UL / 1449 3rd File No:E314979

Note 2: Insulation resistance test conditions:

DC Spark-over Voltage	DC Measuring Voltage
150-350V	100V
420-800V	250V
1000-1999V	500V
2000-4000V	1000V

■ Dimensions (Unit: mm)

GMC2R230NB ~ GMC2R800NB → Figure 1.

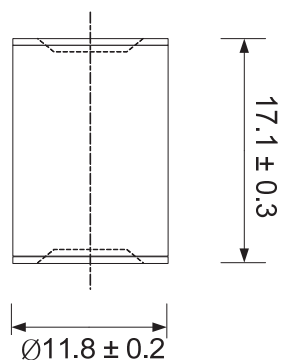


Figure 1

GMC2R10BNB ~ GMC2R22BNB → Figure 2.

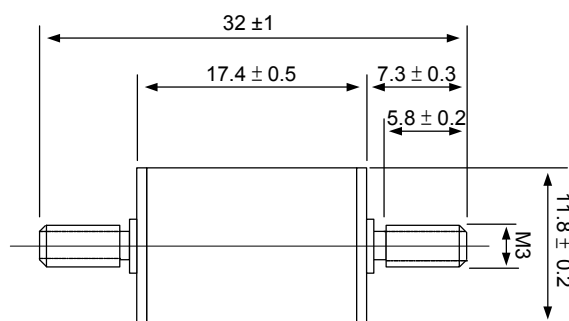


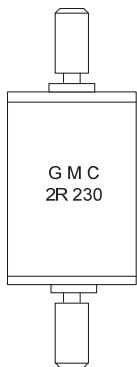
Figure 2

Gas Discharge Tube: GMC Series

2-Electrode Φ11.8*T17/ 17.5 mm Type

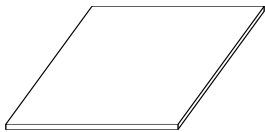
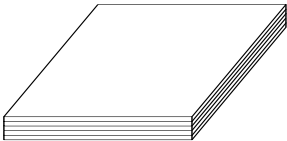


■ Marking



■ Packaging

- Bulk

Plastic Tray (263x147x10mm)	Inner Box (270x145x50mm)	Outside Box (310x280x275mm)
		
35 PCS/ Plastic Tray	105 PCS/ Box	1,050 PCS/ Carton

■ Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: -10℃~+40℃
 2. Relative Humidity: ≤75%RH
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage : 1 year