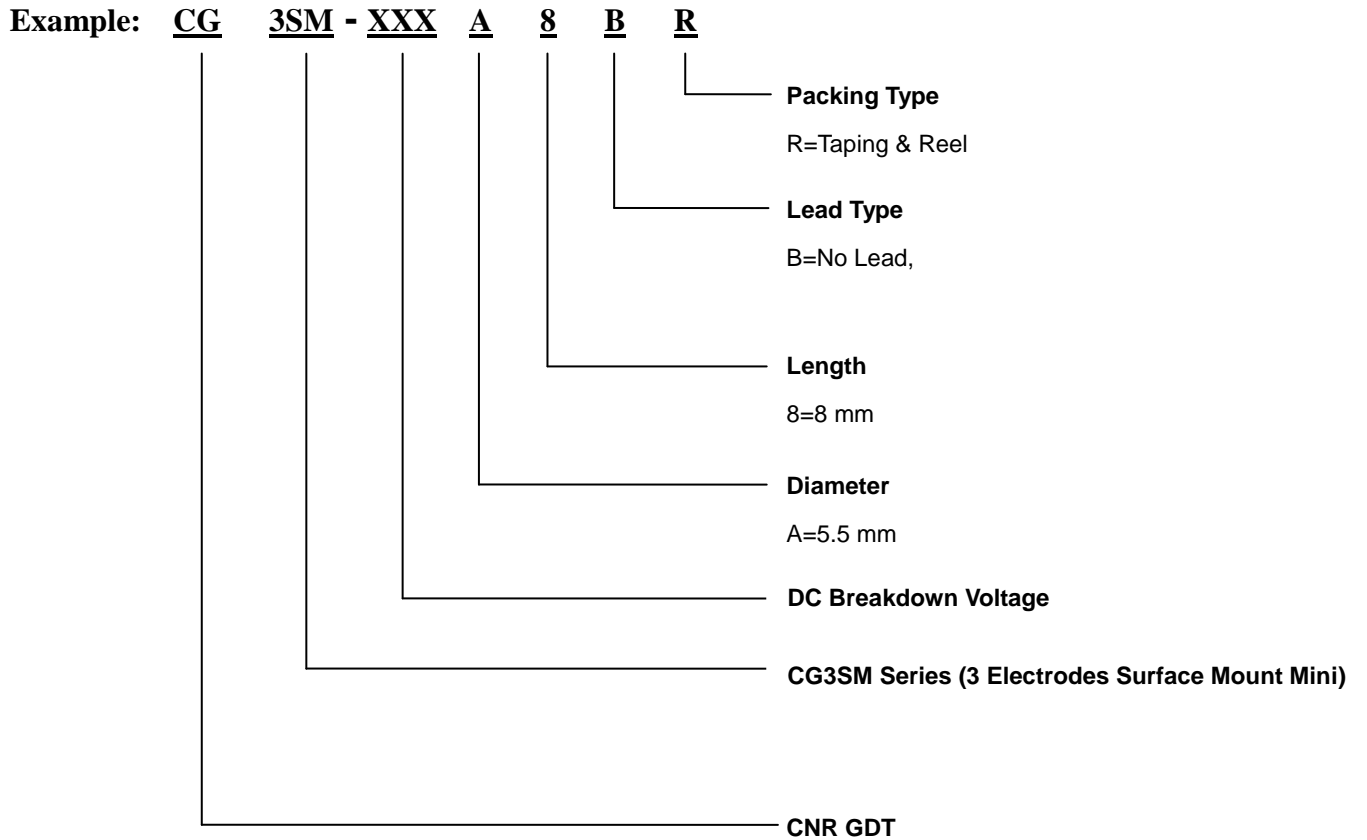


1. Scope:

This Specification covers the CNR GDT surge protector series for manufacturing gas tube arrests.

2. Part Number



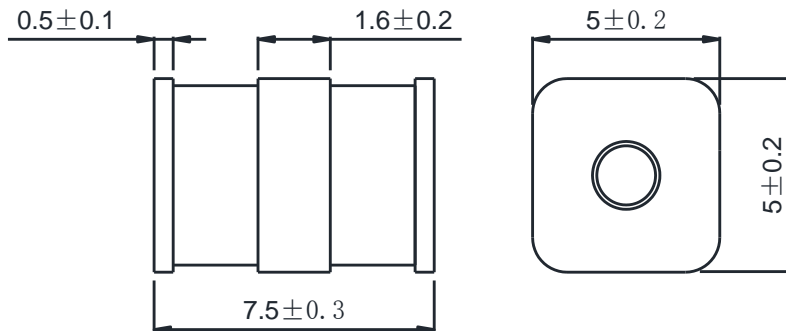
3. Marking



XXX = DC Breakdown Voltage



4. Production Dimensions (mm)



5. Electrical Specification

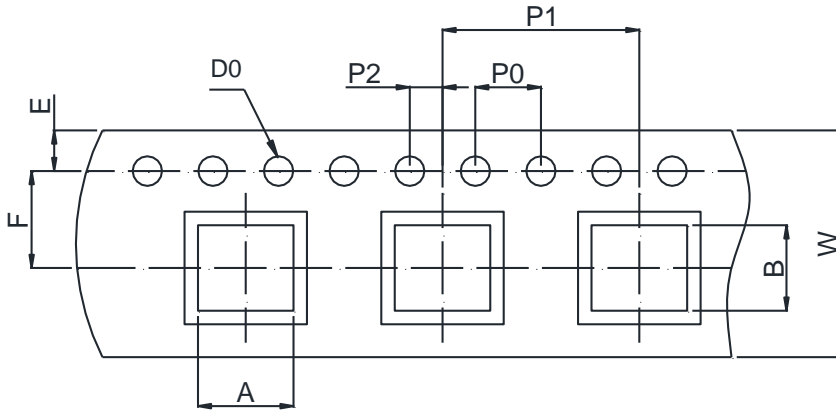
Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current (8/20 μ s)		Impulse Life (10/1000 μ s)	Alternating Discharge Current		DC Holdover Voltage	Minimum Insulation Resistance		Maximum Capacitance (1MHz)			
		(100V/S)	100V/ μ s	1KV/ μ s	1 time		10 times	200A		50Hz, 1Sec	Single 9 cycles		<150ms	(G Ω)	(V _{DC})
		(V)	(V)	(V)	(KA)		(times)	(A)		(V)	(G Ω)		(V _{DC})	(pF)	
CG3SM-075	75 \pm 20%	600	700	10	5	300	5	30	52	>1	50	<1			
CG3SM-090	90 \pm 20%	500	600	10	5	300	5	30	52	>1	50	<1			
CG3SM-150	150 \pm 20%	500	600	10	5	300	5	30	135	>1	100	<1			
CG3SM-200	200 \pm 20%	600	700	15	10	300	10	60	135	>1	100	<1			
CG3SM-230	230 \pm 20%	600	700	15	10	300	10	60	135	>1	100	<1			
CG3SM-250	250 \pm 20%	600	700	15	10	300	10	60	135	>1	100	<1			
CG3SM-350	350 \pm 20%	650	750	15	10	300	10	60	135	>1	100	<1			
CG3SM-420	420 \pm 20%	700	900	15	10	300	10	60	135	>1	250	<1			
CG3SM-470	470 \pm 20%	700	900	15	10	300	10	60	135	>1	250	<1			
CG3SM-600	600 \pm 20%	800	950	10	5	300	5	30	135	>1	250	<1			
CG3SM-800	800 \pm 20%	900	1100	10	5	300	5	30	135	>1	250	<1			

Approvals - UL497B Recognized, File E220380 (CG3SM-075 to CG3SM-600)

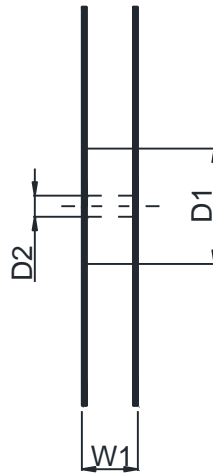
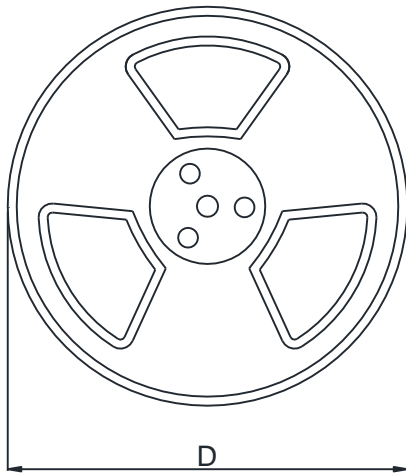
UL1449 4th Recognized, File E316325 (CG3SM-800)

6. Packaging

Taping & Reel



Item	Spec
A	6.0±0.1
B	9.0±0.1
D0	Φ1.5±0.1
E	1.75±0.1
F	7.5±0.1
P0	4.0±0.1
P1	8.0±0.1
P2	2.0±0.1
W	16±0.3



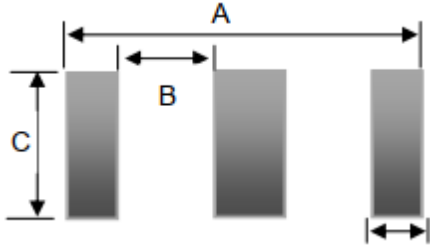
SYMBOL	mm	Quantity
D	330.0	1500 pcs
D1	58.0(min)	
D2	13±0.15	
W1	16±0.15	

7. Storage Environment

1. Operate temperature: -40°C to 90°C
2. Storage temperature: -40°C to 115°C
3. Relative humidity: ≤75%RH
4. Do not store in an environment with corrosive gas or direct sunlight.

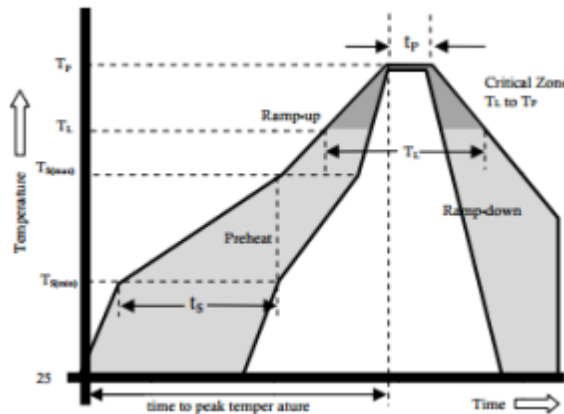
- Storage period: 1 year

8. RECOMMENDED SOLDERING PAD



REF	mm
A	8.5
B	2.8
C	5.8

9. REFLOW PROFILE



Reflow Condition	Pb-Free assembly
Pre Heat : Temperature : Min	150°C
Temperature : Max	200°C
Time (min to max)	60-180 seconds
Average ramp up rate(Liquids)Tamp(TL) to peal	3°C/second max
Ts(max) to TL-Ramp-up Rate	3°C/second max
Reflow -Temperature (TL) (Liquids)	217°C
Reflow -Temperature (TL)	60-150 seconds
Peak Temperature (Tp)	260+0/-5°C
Time within 5°C of actual peak : Temperature (tp)	~10 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to peak Temperature (Tp)	8 minutes max.
Do not exceed	260°C



10. Electrical Terms and Definitions

Item	Test Condition / Description	Requirement
DC Breakdown Voltage	The voltage measured at a rise time of 100v/s.	
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.	To meet the specified value
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.	
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.	