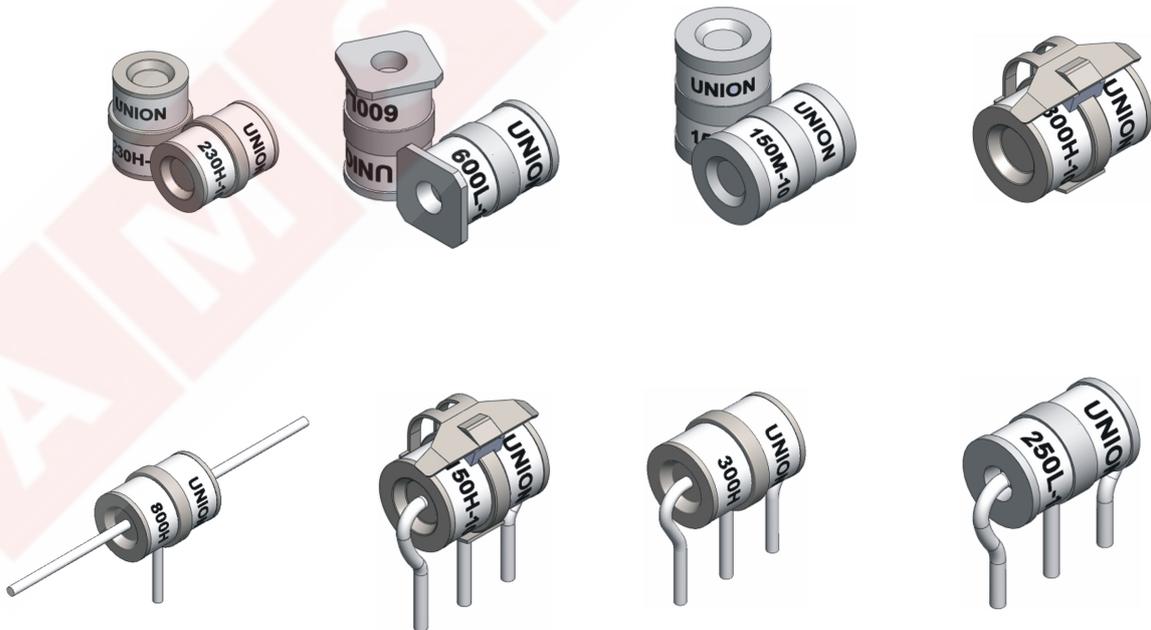


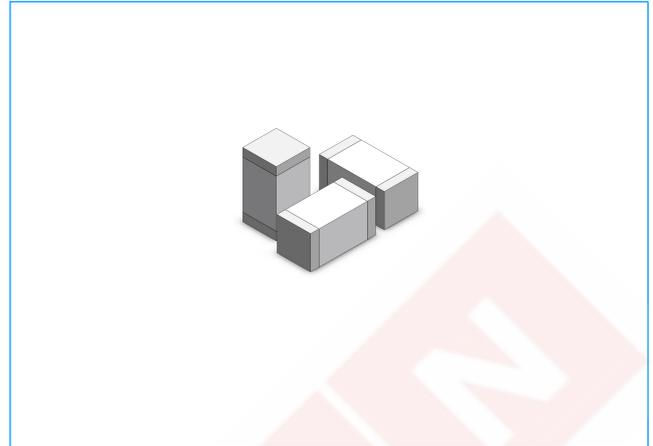
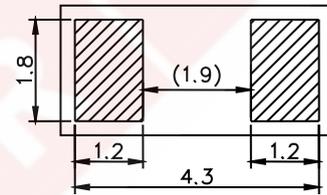
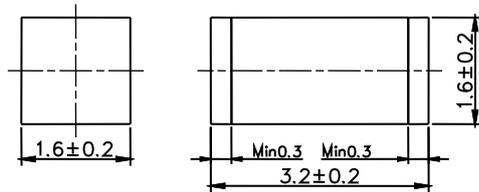
Gas Discharge Tubes

GDT 陶瓷氣體放電管



Surface Mount 2-Electrode Gas Discharge Tube (GDT)
UN1206 Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Ultra low capacitance (<0.5pF)
- ◆ UL recognized
- ◆ Excellent response to fast rising transients
- ◆ 0.5KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5
- ◆ Square Outline


Device Dimensions (Unit: mm)

Recommended pad outline
Electrical Characteristics

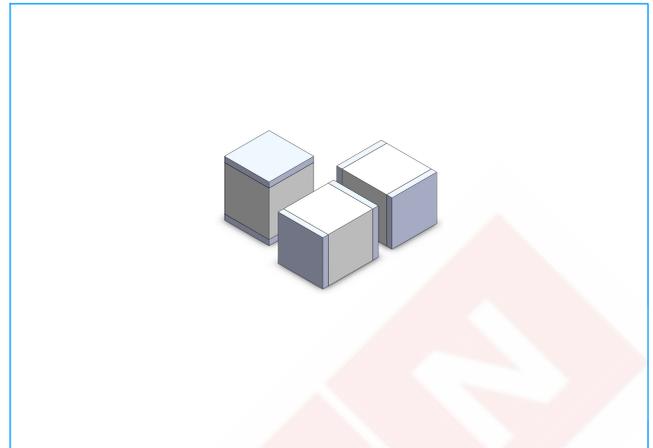
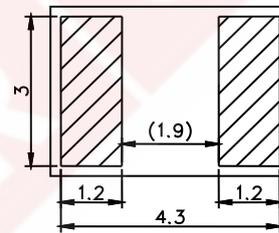
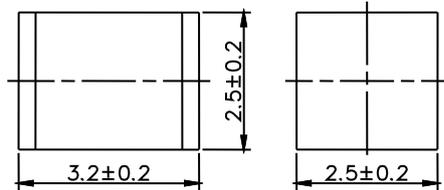
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Nominal Impulse Discharge Current	Impulse Discharge Voltage
	@100V/S	@100V/µs	@1KV/µs		@1MHz	@1A	@8/20µs ±5 times	@10/700µs
UN1206-150ASMD	150V±30%	600V	700V	1 GΩ (at 50V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-200ASMD	200V±30%	600V	750V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-230ASMD	230V±30%	700V	800V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-300ASMD	300V±30%	750V	850V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-350ASMD	350V±30%	800V	900V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-400ASMD	400V±30%	950V	1050V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-420ASMD	420V±30%	950V	1050V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV
UN1206-470ASMD	470V±30%	1100V	1200V	1 GΩ (at 100V DC)	0.5pF	~15V	0.5KA	4KV

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

Surface Mount 2-Electrode Gas Discharge Tube (GDT)
UN1210 Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Ultra low capacitance (<1.0pF)
- ◆ UL recognized
- ◆ Excellent response to fast rising transients
- ◆ 1KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5
- ◆ Square Outline


Device Dimensions (Unit: mm)

Recommended pad outline
Electrical Characteristics

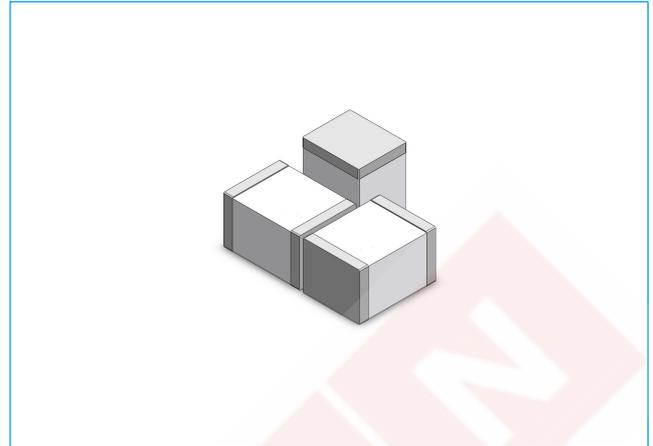
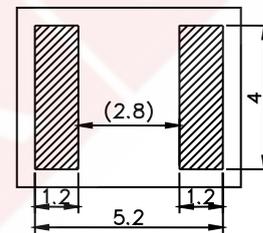
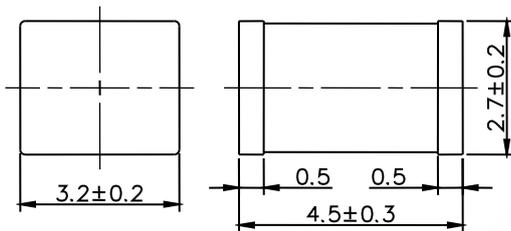
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Nominal Impulse Discharge Current	Impulse Discharge Voltage
	@100V/S	@100V/µs	@1KV/µs		@1MHz	@1A	@8/20µs ±5 times	@10/700µs
UN1210-150BSMD	150V±20%	500V	600V	1 GΩ (at 50V DC)	1.0pF	~15V	1 KA	8KV
UN1210-200BSMD	200V±20%	500V	700V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-230BSMD	230V±20%	600V	700V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-300BSMD	300V±20%	700V	800V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-350BSMD	350V±20%	800V	900V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-400BSMD	400V±20%	800V	950V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-420BSMD	420V±20%	800V	950V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV
UN1210-470BSMD	470V±20%	900V	1000V	1 GΩ (at 100V DC)	1.0pF	~15V	1 KA	8KV

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

Surface Mount 2-Electrode Gas Discharge Tube (GDT)
UN1812 Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Ultra low capacitance (<1.0 pF)
- ◆ UL recognized
- ◆ Excellent response to fast rising transients
- ◆ 2KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5
- ◆ Square Outline


Device Dimensions (Unit: mm)

Recommended pad outline
Electrical Characteristics

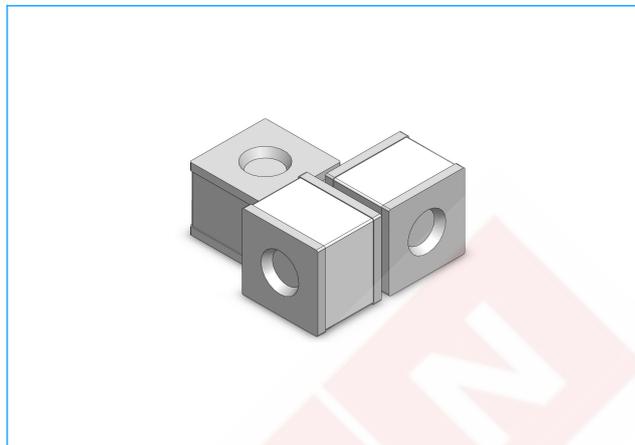
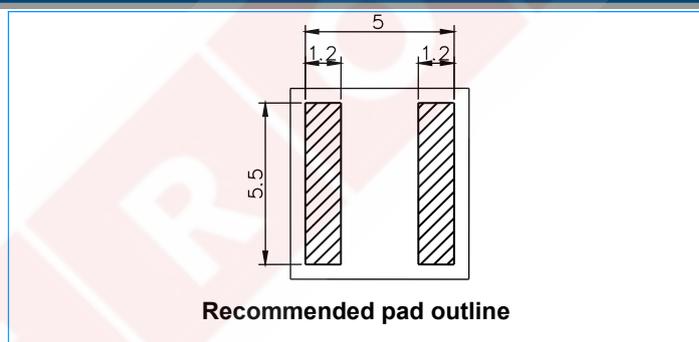
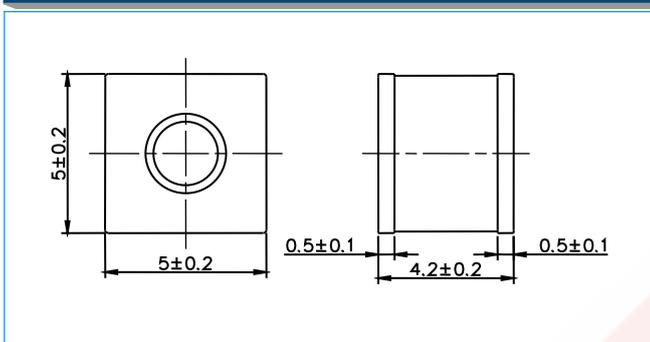
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Nominal Impulse Discharge Current
	@100V/S	@100V/µs	@1KV/µs		@1MHz	@1A	@8/20µs ±5 times
UN1812-90CSMD	90V±20%	600V	700V	1 GΩ (at 50V DC)	1.0pF	~15V	2 KA
UN1812-150CSMD	150V±20%	600V	700V	1 GΩ (at 50V DC)	1.0pF	~15V	2 KA
UN1812-200CSMD	200V±20%	600V	750V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-230CSMD	230V±20%	600V	750V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-300CSMD	300V±20%	800V	900V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-350CSMD	350V±20%	800V	900V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-400CSMD	400V±20%	900V	1000V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-470CSMD	470V±20%	900V	1000V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA
UN1812-600CSMD	600V±20%	1100V	1200V	1 GΩ (at 100V DC)	1.0pF	~15V	2 KA

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

Surface Mount 2-Electrode Gas Discharge Tube (GDT)
UN2E5-SMD Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20 μ s pulse as defined by IEC 61000-4-5


Device Dimensions (Unit: mm)

Electrical Characteristics

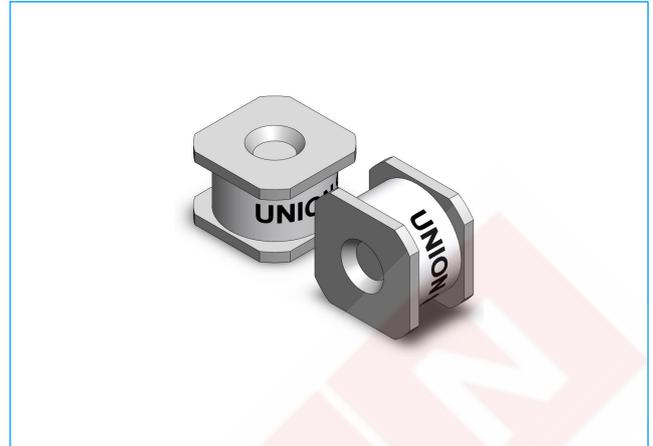
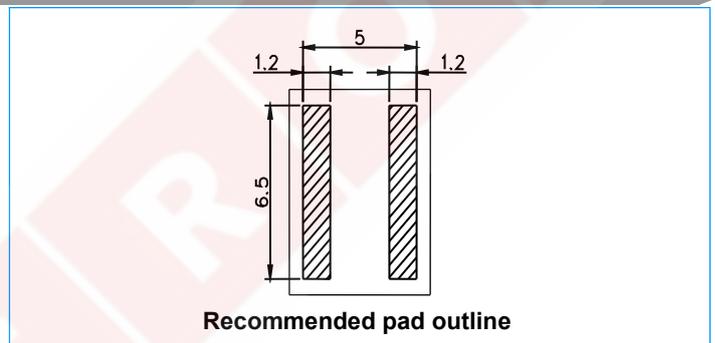
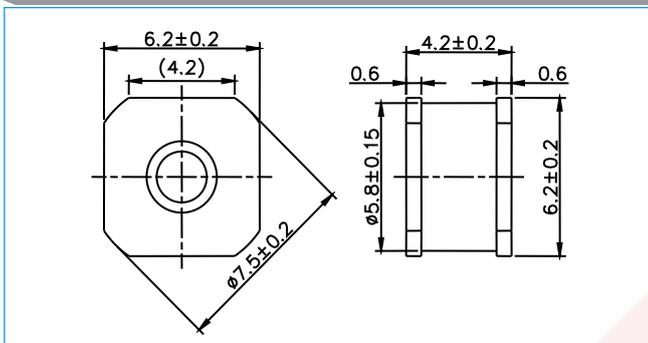
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/ μ s	@1KV/ μ s				Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S	@100V/ μ s	@1KV/ μ s		@1MHz	@1A	@8/20 μ s \pm 5 times	@8/20 μ s 1 time	@50Hz 1 Sec 10 times	@10/1000 μ s 300 times
UN2E5-90LSMD	90V \pm 20%	500V	650V	1 G Ω (at 50V DC)	1.0pF	~15V	5KA	10KA	5A	100A
UN2E5-150LSMD	150V \pm 20%	500V	650V	1 G Ω (at 50V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-200LSMD	200V \pm 20%	500V	650V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-230LSMD	230V \pm 20%	600V	700V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-300LSMD	300V \pm 20%	700V	800V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-350LSMD	350V \pm 20%	700V	800V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-400LSMD	400V \pm 20%	800V	950V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-470LSMD	470V \pm 20%	900V	1000V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-600LSMD	600V \pm 20%	1100V	1200V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

Surface Mount 2-Electrode Gas Discharge Tube (GDT)
UN2E6-SMD Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20 μ s pulse as defined by IEC 61000-4-5


Device Dimensions (Unit: mm)

Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/ μ s	@1KV/ μ s				Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S	@100V/ μ s	@1KV/ μ s		@1MHz	@1A	@8/20 μ s \pm 5 times	@8/20 μ s 1 time	@50Hz 1 Sec 10 times	@10/1000 μ s 300 times
UN2E6-75LSMD	75V \pm 20%	500V	650V	1 G Ω (at 25V DC)	1.0pF	~15V	5KA	10KA	5A	100A
UN2E6-90LSMD	90V \pm 20%	500V	650V	1 G Ω (at 50V DC)	1.0pF	~15V	5KA	10KA	5A	100A
UN2E6-150LSMD	150V \pm 20%	500V	650V	1 G Ω (at 50V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-230LSMD	230V \pm 20%	600V	700V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-300LSMD	300V \pm 20%	700V	800V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-350LSMD	350V \pm 20%	700V	800V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-400LSMD	400V \pm 20%	800V	900V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-470LSMD	470V \pm 20%	900V	1000V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E6-600LSMD	600V \pm 20%	1100V	1200V	1 G Ω (at 100V DC)	1.0pF	~20V	5KA	10KA	5A	100A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

2-Electrode Gas Discharge Tube (GDT)

UN2E5 Series

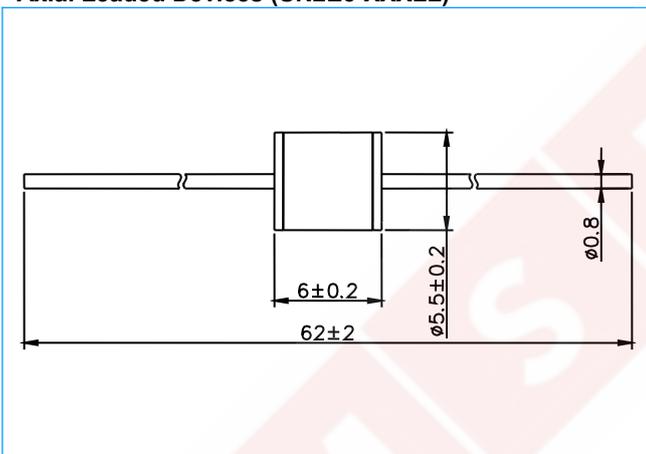
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5

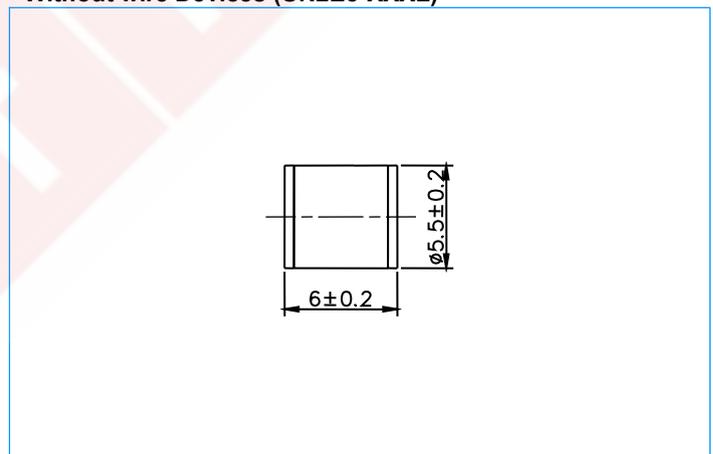


Device Dimensions (Unit: mm)

Axial Leaded Devices (UN2E5-XXXLL)



Without wire Devices (UN2E5-XXXL)



2-Electrode Gas Discharge Tube (GDT)
UN2E5 Series
Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
							Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S	@100V/ μ s	@1KV/ μ s	@1MHz	@1A	@8/20 μ s \pm 5 times	@8/20 μ s 1 time	@50Hz 1 Sec 10 times	@10/1000 μ s 300 times	
UN2E5-75LL UN2E5-75L	75V \pm 20%	500V	600V	1 G Ω (at 25V)	1.0pF	~15V	5KA	10KA	5A	100A
UN2E5-90LL UN2E5-90L	90V \pm 20%	500V	600V	1 G Ω (at 50V)	1.0pF	~15V	5KA	10KA	5A	100A
UN2E5-150LL UN2E5-150L	150V \pm 20%	500V	600V	1 G Ω (at 50V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-230LL UN2E5-230L	230V \pm 20%	600V	700V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-250LL UN2E5-250L	250V \pm 20%	700V	800V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-300LL UN2E5-300L	300V \pm 20%	800V	900V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-350LL UN2E5-350L	350V \pm 20%	800V	900V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-400LL UN2E5-400L	400V \pm 20%	900V	1000V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-470LL UN2E5-470L	470V \pm 20%	900V	1000V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-600LL UN2E5-600L	600V \pm 20%	1100V	1200V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
UN2E5-800LL UN2E5-800L	800V \pm 20%	1200V	1400V	1 G Ω (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

2-Electrode Gas Discharge Tube (GDT)

UN2E8 Series

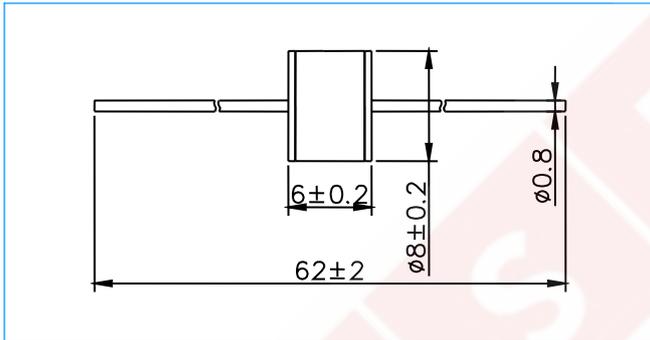
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ High insulation resistance
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 10~20KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5

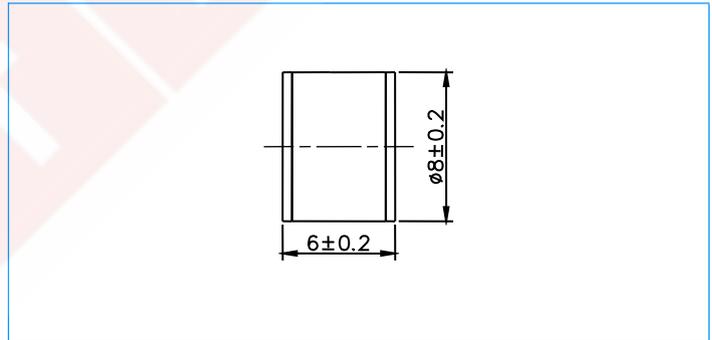


Device Dimensions (Unit: mm)

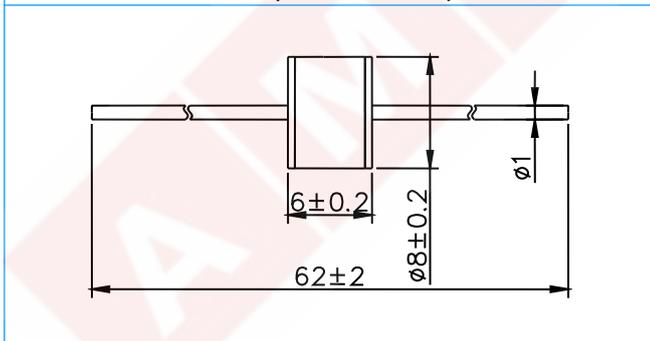
Axial Leaded Devices (UN2E8-XXXML)



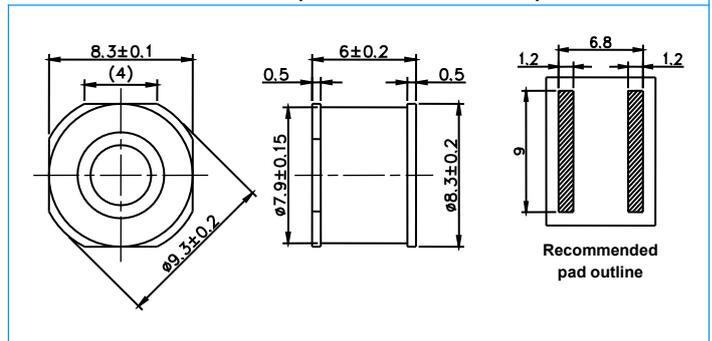
Without wire Devices (UN2E8-XXXM/H)



Axial Leaded Devices (UN2E8-XXXHL)



Surface Mount Devices (UN2E8-XXXM/HSMD)



2-Electrode Gas Discharge Tube (GDT)
UN2E8 Series
Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
							Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
							@100V/S	@100V/ μ s	@1KV/ μ s	@1MHz
UN2E8-75M UN2E8-75ML UN2E8-75MSMD	75V \pm 20%	500V	600V	1 G Ω (at 25V)	1.5pF	~15V	10KA	20KA	10A	100A
UN2E8-90M UN2E8-90ML UN2E8-90MSMD	90V \pm 20%	500V	600V	1 G Ω (at 50V)	1.5pF	~15V	10KA	20KA	10A	100A
UN2E8-150M UN2E8-150ML UN2E8-150MSMD	150V \pm 20%	500V	600V	1 G Ω (at 50V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-230M UN2E8-230ML UN2E8-230MSMD	230V \pm 20%	600V	700V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-250M UN2E8-250ML UN2E8-250MSMD	250V \pm 20%	700V	800V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-300M UN2E8-300ML UN2E8-300MSMD	300V \pm 20%	800V	900V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-350M UN2E8-350ML UN2E8-350MSMD	350V \pm 20%	800V	900V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-420M UN2E8-420ML UN2E8-420MSMD	420V \pm 20%	900V	1000V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-470M UN2E8-470ML UN2E8-470MSMD	470V \pm 20%	900V	1000V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-600M UN2E8-600ML UN2E8-600MSMD	600V \pm 20%	1100V	1200V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A
UN2E8-800M UN2E8-800ML UN2E8-800MSMD	800V \pm 20%	1200V	1400V	1 G Ω (at 100V)	1.5pF	~20V	10KA	20KA	10A	100A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

2-Electrode Gas Discharge Tube (GDT)
UN2E8 Series
Electrical Characteristics

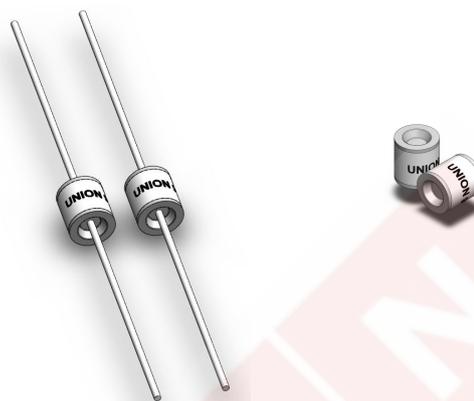
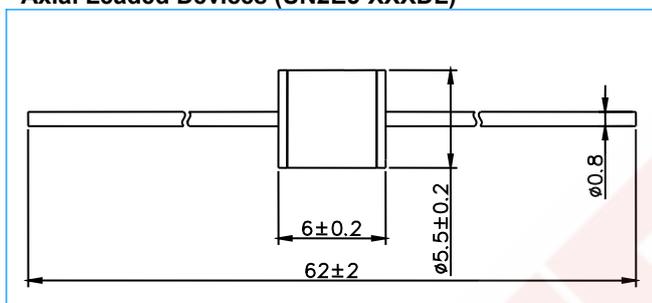
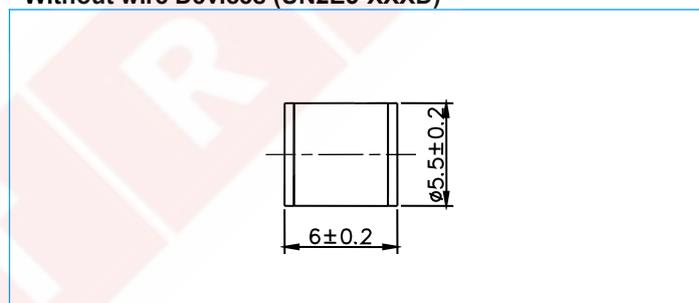
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/μs	@1KV/μs				Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S			@1MHz	@1A	@8/20μs ±5 times	@8/20μs 1 time	@50Hz 1 Sec 10 times	@10/1000μs 300 times	
UN2E8-75H UN2E8-75HL UN2E8-75HSMD	75V±20%	500V	600V	1 GΩ (at 25V)	1.5pF	~15V	20KA	25KA	20A	200A
UN2E8-90H UN2E8-90HL UN2E8-90HSMD	90V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~15V	20KA	25KA	20A	200A
UN2E8-150H UN2E8-150HL UN2E8-150HSMD	150V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-230H UN2E8-230HL UN2E8-230HSMD	230V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-250H UN2E8-250HL UN2E8-250HSMD	250V±20%	700V	800V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-300H UN2E8-300HL UN2E8-300HSMD	300V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-350H UN2E8-350HL UN2E8-350HSMD	350V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-420H UN2E8-420HL UN2E8-420HSMD	420V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-470H UN2E8-470HL UN2E8-470HSMD	470V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-600H UN2E8-600HL UN2E8-600HSMD	600V±20%	1100V	1200V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A
UN2E8-800H UN2E8-800HL UN2E8-800HSMD	800V±20%	1200V	1400V	1 GΩ (at 100V)	1.5pF	~20V	20KA	25KA	20A	200A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

High Voltage 2-Electrode Gas Discharge Tube (GDT)
UN2E5 Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20 μ s pulse as defined by IEC 61000-4-5

UN2E5-XXXDL
UN2E5-XXXD

Device Dimensions (Unit: mm)
Axial Leaded Devices (UN2E5-XXXDL)

Without wire Devices (UN2E5-XXXD)

Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life	
		@100V/ μ s	@1KV/ μ s				Nominal Impulse Discharge Current @8/20 μ s \pm 5 times	Max Impulse Discharge Current @8/20 μ s 1 time
UN2E5-1000DL UN2E5-1000D	1000V \pm 20%	1500V	1600V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-1600DL UN2E5-1600D	1600V \pm 20%	2200V	2400V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2000DL UN2E5-2000D	2000V \pm 20%	3000V	3500V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2500DL UN2E5-2500D	2500V \pm 20%	3800V	4000V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2700DL UN2E5-2700D	2700V \pm 20%	3800V	4000V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-3000DL UN2E5-3000D	3000V \pm 20%	4300V	4500V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-3500DL UN2E5-3500D	3500V \pm 20%	4800V	5000V	1 G Ω (at 100V)	1.0pF	~25V	2.5KA	5KA

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

High Voltage 2-Electrode Gas Discharge Tube (GDT)

UN2E8 / UN2H8 Series

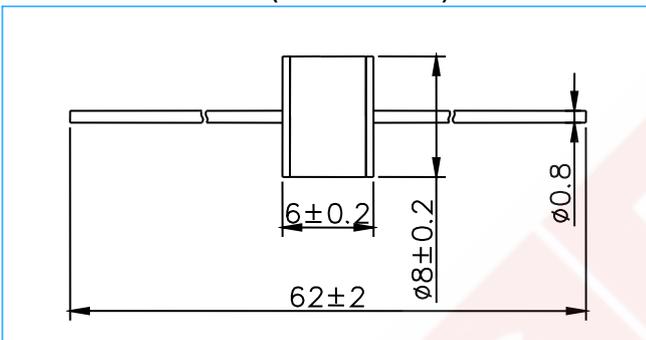
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20 μ s pulse as defined by IEC 61000-4-5

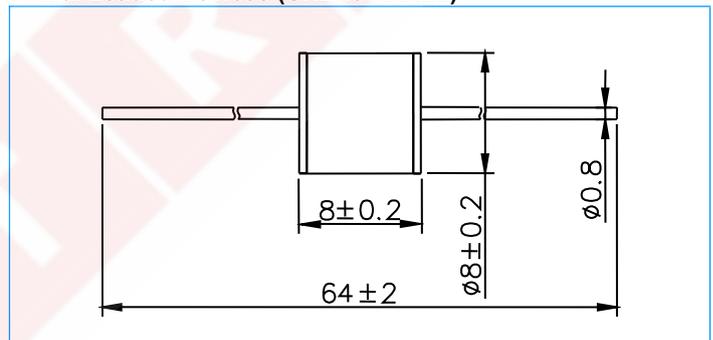


Device Dimensions (Unit: mm)

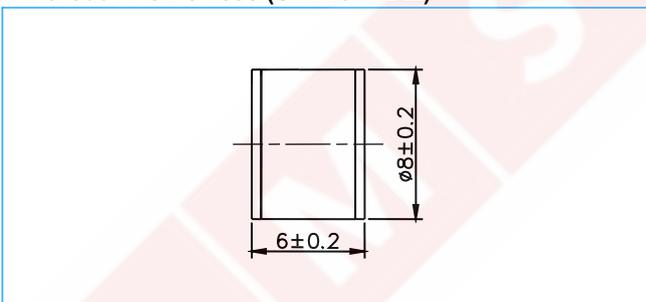
Axial Leaded Devices (UN2E8-XXXLL)



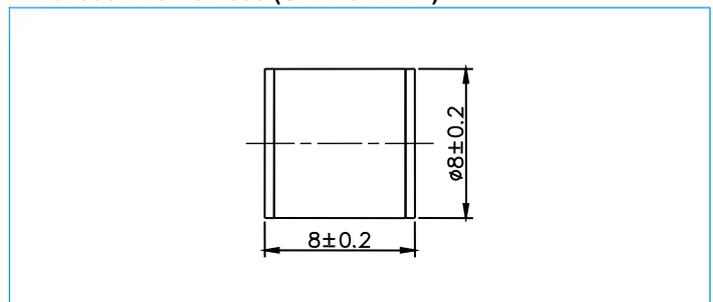
Axial Leaded Devices (UN2H8-XXXLL)



Without wire Devices (UN2E8-XXXL)



Without wire Devices (UN2H8-XXXL)



High Voltage 2-Electrode Gas Discharge Tube (GDT)
UN2E8 / UN2H8 Series
Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life	
		@100V/μs	@1KV/μs				Nominal Impulse Discharge Current	Max Impulse Discharge Current
	@100V/S			@1MHz	@1A	@8/20μs ±5 times	@8/20μs 1 time	
UN2E8-1000LL UN2E8-1000L	1000V±20%	1500V	1600V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-1600LL UN2E8-1600L	1600V±20%	2200V	2400V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-2000LL UN2E8-2000L	2000V±20%	3000V	3500V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-2500LL UN2E8-2500L	2500V±20%	3800V	4000V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-2700LL UN2E8-2700L	2700V±20%	3800V	4000V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-3000LL UN2E8-3000L	3000V±20%	4300V	4500V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2E8-3500LL UN2E8-3500L	3500V±20%	4800V	5000V	1 GΩ (at 100V)	1.5pF	~25V	5KA	10KA
UN2H8-4000LL UN2H8-4000L	4000V±20%	5400V	5600V	1 GΩ (at 100V)	1.0pF	~25V	5KA	10KA
UN2H8-4500LL UN2H8-4500L	4500V±20%	5800V	6000V	1 GΩ (at 100V)	1.0pF	~25V	5KA	10KA
UN2H8-5000LL UN2H8-5000L	5000V±20%	6000V	6500V	1 GΩ (at 100V)	1.0pF	~25V	5KA	10KA
UN2H8-5500LL UN2H8-5500L	5500V±20%	6500V	7000V	1 GΩ (at 100V)	1.0pF	~25V	5KA	10KA
UN2H8-6000LL UN2H8-6000L	6000V±20%	7500V	8000V	1 GΩ (at 100V)	1.0pF	~25V	5KA	10KA

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859

3-Electrode Gas Discharge Tube (GDT)

UN3E5 Series

Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ High insulation resistance
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5

UN3E5-XXXLM



UN3E5-XXXL

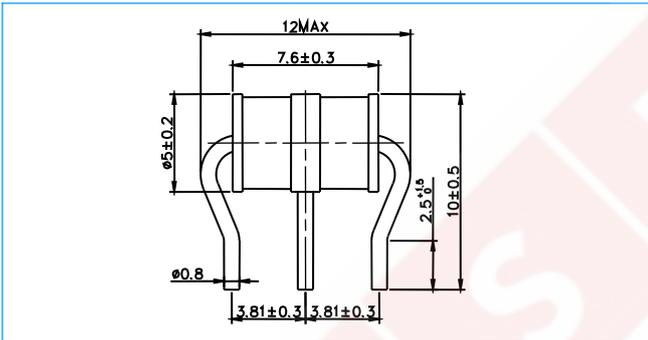


UN3E5-XXXLSMD

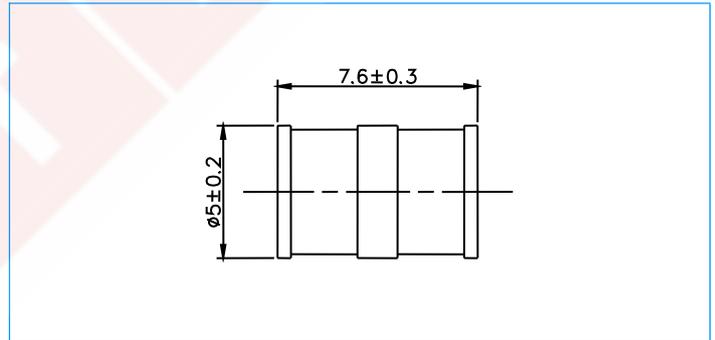


Device Dimensions (Unit: mm)

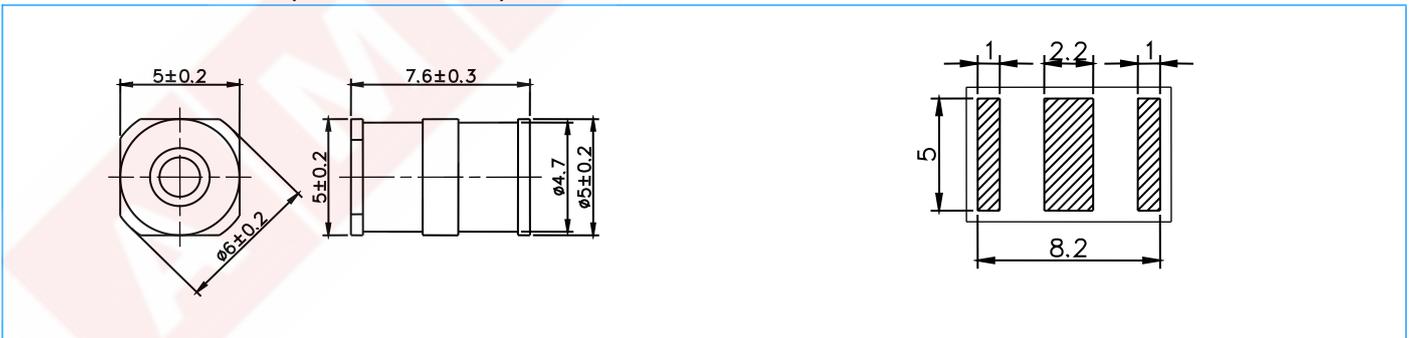
Radial Leaded Devices (UN3E5-XXXLM)



Without wire Devices (UN3E5-XXXL)



Surface Mount Devices (UN3E5-XXXLSMD)





3-Electrode Gas Discharge Tube (GDT)

UN3E5 Series

Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
							Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S	@100V/μs	@1KV/μs	@1MHz	@1A	@8/20μs ±5 times	@8/20μs 1 time	@50Hz 1 Sec 10 times	@10/1000μs 300 times	
UN3E5-75LM UN3E5-75L UN3E5-75LSMD	75V±20%	500V	600V	1 GΩ (at 25V)	1.5pF	~15V	5KA	10KA	5A	200A
UN3E5-90LM UN3E5-90L UN3E5-90LSMD	90V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~15V	5KA	10KA	5A	200A
UN3E5-150LM UN3E5-150L UN3E5-150LSMD	150V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-230LM UN3E5-230L UN3E5-230LSMD	230V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-250LM UN3E5-250L UN3E5-250LSMD	250V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-300LM UN3E5-300L UN3E5-300LSMD	300V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-350LM UN3E5-350L UN3E5-350LSMD	350V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-420LM UN3E5-420L UN3E5-420LSMD	420V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-470LM UN3E5-470L UN3E5-470LSMD	470V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A
UN3E5-600LM UN3E5-600L UN3E5-600LSMD	600V±20%	1100V	1200V	1 GΩ (at 100V)	1.5pF	~20V	5KA	10KA	5A	200A

Notes:

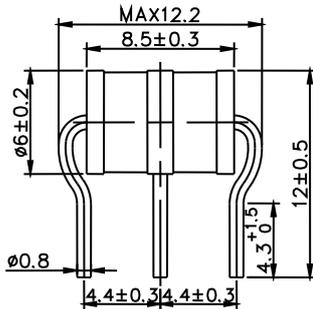
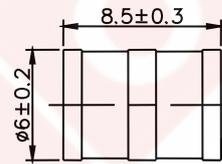
- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859
- 3). Tip or ring electrode to center electrode
- 4). Total current through center electrode, half value through tip respectively ring electrode

3-Electrode Gas Discharge Tube (GDT)
UN3E6 Series
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 10KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5

UN3E6-XXXLM

UN3E6-XXXL

Device Dimensions (Unit: mm)
Radial Leaded Devices (UN3E6-XXXMM)

Without wire Devices (UN3E6-XXXM)

Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/µs	@1KV/µs				Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S				@1MHz	@1A	@8/20µs ±5 times	@8/20µs 1 time	@50Hz 1 Sec 10 times	@10/1000µs 300 times
UN3E6-75MM UN3E6-75M	75V±20%	500V	600V	1 GΩ (at 25V)	1.5pF	~15V	10KA	20KA	10A	200A
UN3E6-90MM UN3E6-90M	90V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~15V	10KA	20KA	10A	200A
UN3E6-150MM UN3E6-150M	150V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-230MM UN3E6-230M	230V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-250MM UN3E6-250M	250V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-300MM UN3E6-300M	300V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-350MM UN3E6-350M	350V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-420MM UN3E6-420M	420V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-470MM UN3E6-470M	470V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A
UN3E6-600MM UN3E6-600M	600V±20%	1100V	1200V	1 GΩ (at 100V)	1.5pF	~20V	10KA	20KA	10A	200A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859
- 3). Tip or ring electrode to center electrode
- 4). Total current through center electrode, half value through tip respectively ring electrode

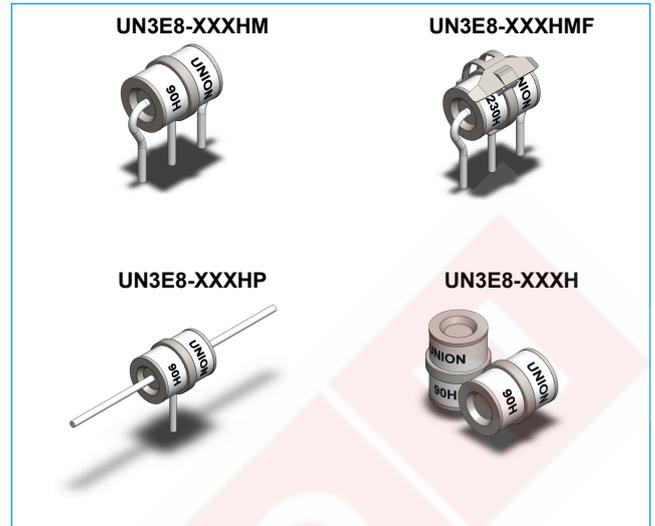


3-Electrode Gas Discharge Tube (GDT)

UN3E8 Series

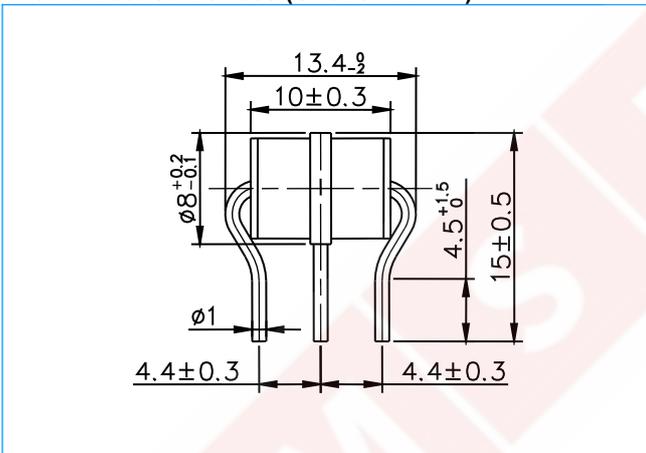
Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ High insulation resistance
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 5KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5

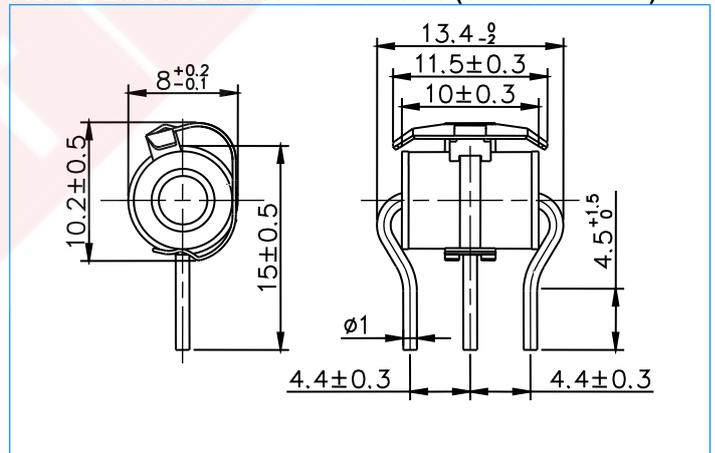


Device Dimensions (Unit: mm)

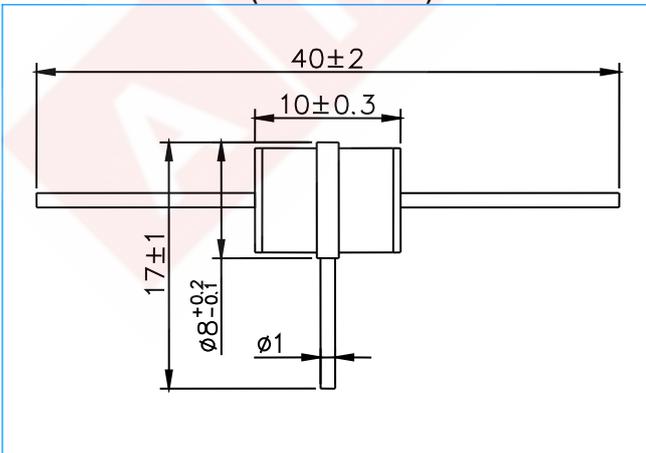
Radial Leaded Devices (UN3E8-XXXHM)



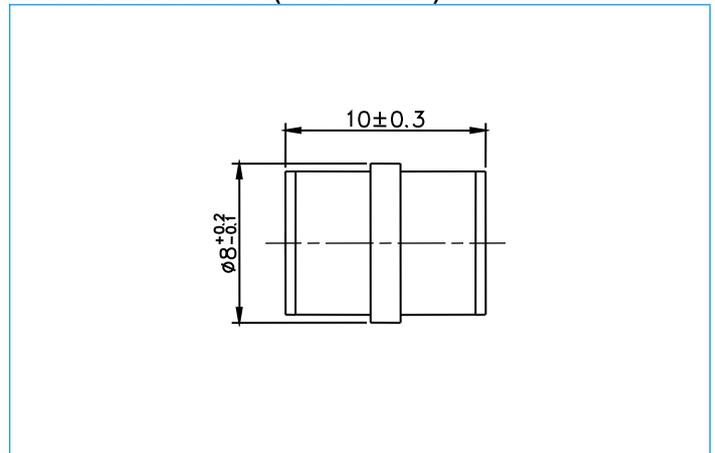
Radial Leaded Devices with Fail-Safe (UN3E8-XXXHMF)



"T" Leaded Devices (UN3E8-XXXHP)



Without wire Devices (UN3E8-XXXH)



3-Electrode Gas Discharge Tube (GDT)
UN3E8 Series
Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/μs	@1KV/μs				Nominal Impulse Discharge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
	@100V/S	@100V/μs	@1KV/μs	@1MHz	@1A	@8/20μs ±5 times	@8/20μs 1 time	@50Hz 1 Sec 10 times	@10/1000μs 300 times	
UN3E8-75HM UN3E8-75HMF UN3E8-75HP UN3E8-75H	75V±20%	500V	600V	1 GΩ (at 25V)	1.5pF	~15V	20KA	25KA	20A	200A
UN3E8-90HM UN3E8-90HMF UN3E8-90HP UN3E8-90H	90V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~15V	20KA	25KA	20A	200A
UN3E8-150HM UN3E8-150HMF UN3E8-150HP UN3E8-150H	150V±20%	500V	600V	1 GΩ (at 50V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-230HM UN3E8-230HMF UN3E8-230HP UN3E8-230H	230V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-250HM UN3E8-250HMF UN3E8-250HP UN3E8-250H	250V±20%	600V	700V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-300HM UN3E8-300HMF UN3E8-300HP UN3E8-300H	300V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-350HM UN3E8-350HMF UN3E8-350HP UN3E8-350H	350V±20%	800V	900V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-420HM UN3E8-420HMF UN3E8-420HP UN3E8-420H	420V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-470HM UN3E8-470HMF UN3E8-470HP UN3E8-470H	470V±20%	900V	1000V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-600HM UN3E8-600HMF UN3E8-600HP UN3E8-600H	600V±20%	1100V	1200V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A
UN3E8-800HM UN3E8-800HMF UN3E8-800HP UN3E8-800H	800V±20%	1200V	1400V	1 GΩ (at 100V)	1.5pF	~25V	20KA	25KA	20A	200A

Notes:

- 1). Terms in accordance with ITU-T K.12 and GB/T 9043-2008
- 2). At delivery AQL 0.65 level II, DIN ISO 2859
- 3). Tip or ring electrode to center electrode
- 4). Total current through center electrode, half value through tip respectively ring electrode

Switching Spark Gap

UN2K8 Series

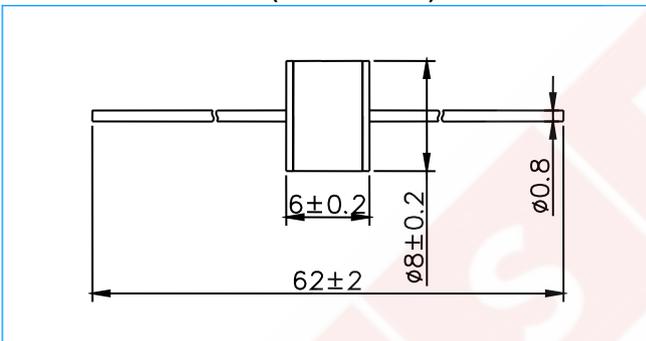
Features

- ◆ Non-Radioactive
- ◆ RoHS Compliant
- ◆ Fast breakdown-time
- ◆ Very high switch speed when switch voltage achieved, High di/dt allows for optimum performance of ignition transformers.
- ◆ Long service life

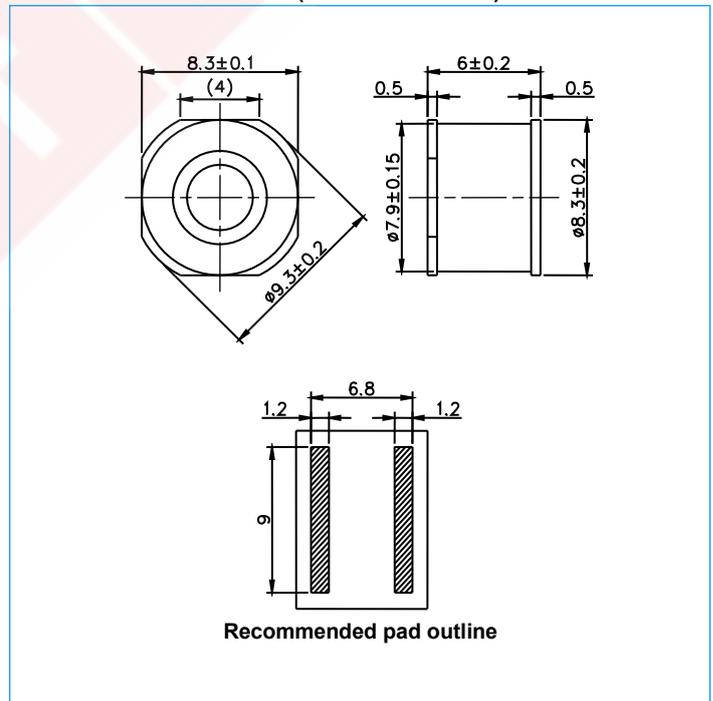


Device Dimensions (Unit: mm)

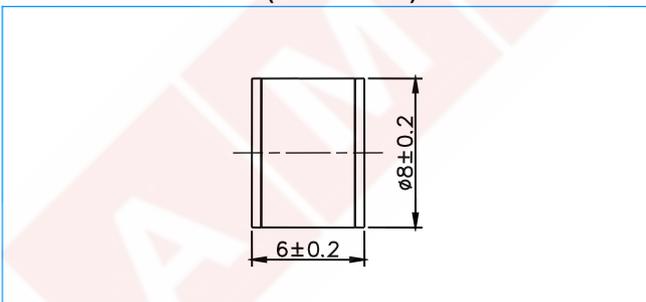
Axial Leaded Devices (UN2K8-XXXL)



Surface Mount Devices (UN2K8-XXXSMD)



Without wire Devices (UN2K8-XXX)



Switching Spark Gap
UN2K8 Series
Electrical Specifications

Part Number	UN2K8-230L UN2K8-230 UN2K8-230SMD	UN2K8-300L UN2K8-300 UN2K8-300SMD	UN2K8-350L-1 UN2K8-350-1 UN2K8-350SMD-1	UN2K8-350L UN2K8-350 UN2K8-350SMD	UN2K8-350L-2 UN2K8-350-2 UN2K8-350SMD-2	UN2K8-400L UN2K8-400 UN2K8-400SMD
Nominal breakdown voltage	230V	300V	320V	350V	370V	400V
Initial values						
Static breakdown voltage						
First ignition value after 24 hours in darkness	≤260V	≤340V	≤360V	≤400V	≤420V	≤450V
Following ignition values	195~240V	260~310V	275~330V	300~365V	325~385V	340~420V
Electrical life						
Breakdown voltage						
After life test first ignition value after 24 hours in darkness	≤270V	≤360V	≤380V	≤430V	≤450V	≤480V
Following ignition values	195~265V	260~330V	275~350V	300~385V	325~405V	340~440V
Switching operations	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions
Life test Circuit						
Open Circuit Voltage V_0	230V _{AC}	350V	400V	450V	450V	500V
Loading Resistance R	15KΩ	10KΩ	10KΩ	10KΩ	10KΩ	10KΩ
Discharge Capacitance C	2.2μF	680nF	680nF	680nF	680nF	680nF
Inductance L	10μH	0.5μH	0.5μH	0.5μH	0.5μH	0.5μH
Discharge Peak Current I_P	~300A	~500A	~500A	~500A	~500A	~500A
Maximum switching frequency	100Hz	100Hz	100Hz	100Hz	100Hz	100Hz

Part Number	UN2K8-450L UN2K8-450 UN2K8-450SMD	UN2K8-500L UN2K8-500 UN2K8-500SMD	UN2K8-600L-1 UN2K8-600-1 UN2K8-600SMD-1	UN2K8-600L UN2K8-600 UN2K8-600SMD	UN2K8-800L-1 UN2K8-800-1 UN2K8-800SMD-1	UN2K8-800L UN2K8-800 UN2K8-800SMD
Nominal breakdown voltage	450V	500V	550V	600V	730V	800V
Initial values						
Static breakdown voltage						
First ignition value after 24 hours in darkness	≤510V	≤570V	≤620V	≤720V	≤850V	≤920V
Following ignition values	400~475V	450~530V	500~585V	550~640V	640~810V	705~860V
Electrical life						
Breakdown voltage						
After life test first ignition value after 24 hours in darkness	≤540V	≤600V	≤650V	≤750V	≤900V	≤950V
Following ignition values	400~495V	450~560V	500~620V	550~680V	640~840V	705~900V
Switching operations	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions	200000 Ignitions
Life test Circuit						
Open Circuit Voltage V_0	550V	600V	650V	750V	900V	1000V
Loading Resistance R	10KΩ	13KΩ	13KΩ	13KΩ	68KΩ	68KΩ
Discharge Capacitance C	680nF	470nF	470nF	470nF	100nF	100nF
Inductance L	0.5μH	0.1μH	0.1μH	0.1μH	0.4μH	0.4μH
Discharge Peak Current I_P	~500A	Max.1000A	Max.1000A	Max.1000A	~650A	~650A
Maximum switching frequency	100Hz	200Hz	200Hz	200Hz	200Hz	200Hz