

## High Voltage 2-Electrode Gas Discharge Tube (GDT)

### UN2E5 Series

#### Description

The high voltage (1.0- 3.5KV) gas discharge tubes are designed for surge protection and high isolation applications, and for applications for which bias voltages or signal levels of several hundred volts are normally present.

#### Agency Approvals

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

#### Applications

- u CRT terminals
- u CATV equipment
- u Antennas
- u Power supplies
- u Medical electronics

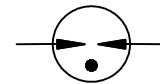
UN2E5-XXXDL



UN2E5-XXXD



#### Schematic Symbol



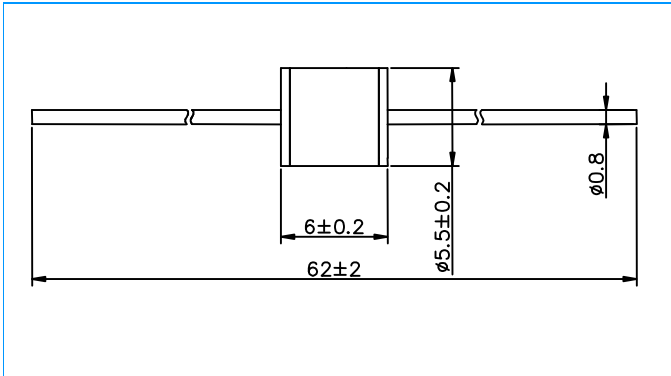
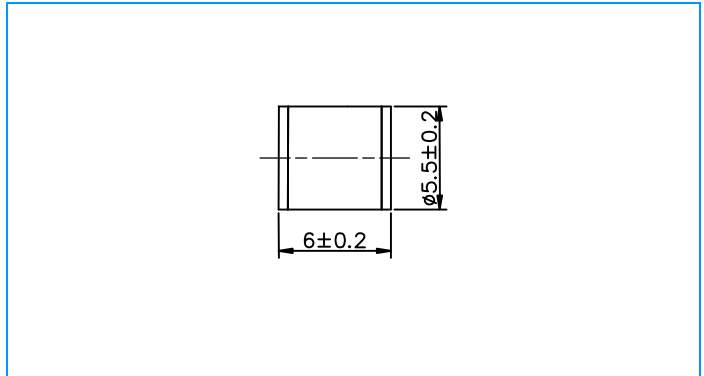
#### Product Characteristics

<b>Materials</b>	Nickel-plated with Tinplated wires	
<b>Product Marking</b>	<b>UNION XXXXD</b> XXXX -Nominal voltage D -2.5KA	
<b>Glow to Arc Transition Current</b>	< 0.5Amps	
<b>Glow Voltage</b>	~180 Volts	
<b>Storage and Operational Temperature</b>	-40 to +90°C	
<b>Weight</b>	<b>UN2E5-XXXDL</b>	~1.0g
	<b>UN2E5-XXXD</b>	~0.85g

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## UN2E5 Series

### Dimensions (Unit: mm)

**Axial Leaded Devices (UN2E5-XXXDL)**

**Without wire Devices (UN2E5-XXXD)**


### Electrical Characteristics

Part Number	Marking	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	@1KV/μs				@8/20μs ±5 times	@8/20μs 1 time
UN2E5-1000DL UN2E5-1000D	1000D	1000V±20%	1500V	1600V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-1600DL UN2E5-1600D	1600D	1600V±20%	2200V	2400V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2000DL UN2E5-2000D	2000D	2000V±20%	3000V	3500V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2500DL UN2E5-2500D	2500D	2500V±20%	3800V	4000V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-2700DL UN2E5-2700D	2700D	2700V±20%	3800V	4000V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-3000DL UN2E5-3000D	3000D	3000V±20%	4300V	4500V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA
UN2E5-3500DL UN2E5-3500D	3500D	3500V±20%	4800V	5000V	1 GΩ (at 100V)	1.0pF	~25V	2.5KA	5KA

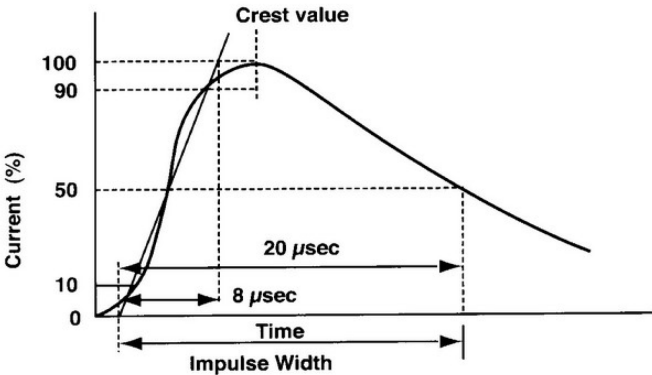
**Notes:**

- 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

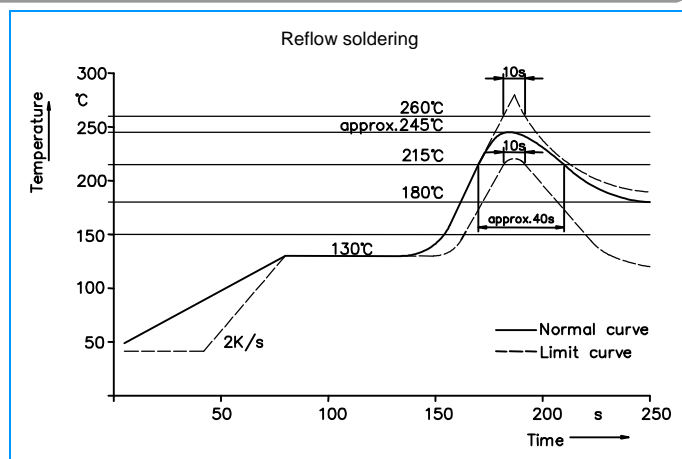
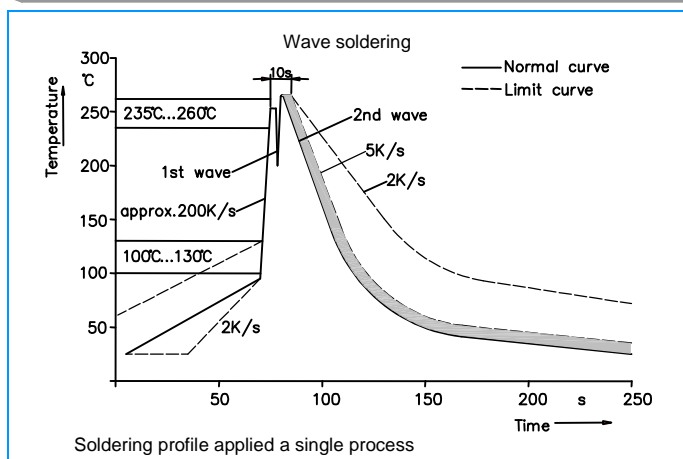
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## UN2E5 Series

### Electrical Rating

Item	Test Condition / Description	Requirement
<b>DC Spark-over Voltage</b>	The voltage is measured with a slowly rate of rise $dv / dt=100V/s$	To meet the specified value
<b>Impulse Spark-over Voltage</b>	The maximum impulse spark-over voltage is measured with a rise time of $dv / dt=100V/\mu s$ or $1KV/\mu s$	
<b>Insulation Resistance</b>	The resistance of gas tube shall be measured each terminal each other terminal, please see above spec.	
<b>Capacitance</b>	The capacitance of gas tube shall be measured each terminal to each other terminal. Test frequency :1MHz	
<b>Nominal Impulse Discharge Current</b>	The maximum current applying a waveform of 8/20 $\mu s$ that can be applied across the terminals of the gas tube. One hour after the test is completed, re-testing of the DC spark-over voltage does not exceed $\pm 30\%$ of the nominal DC spark-over voltage. Dwell time between pulses is 3 minutes. 	

### Recommended soldering profile



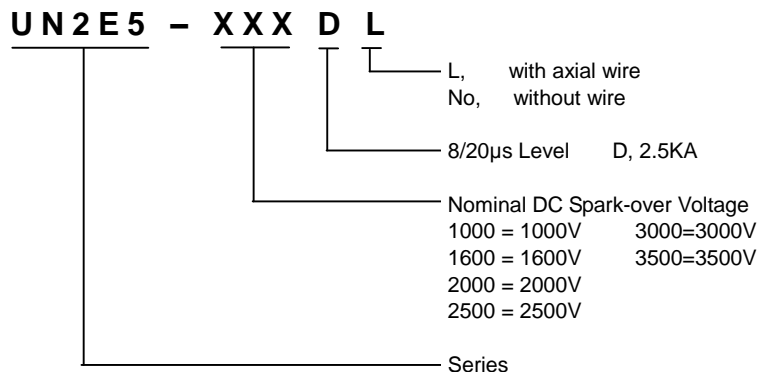
### Soldering Parameters - Hand Soldering

Solder Iron Temperature: 350 $^{\circ}C$   $\pm 5^{\circ}C$   
Heating Time: 5 seconds max.

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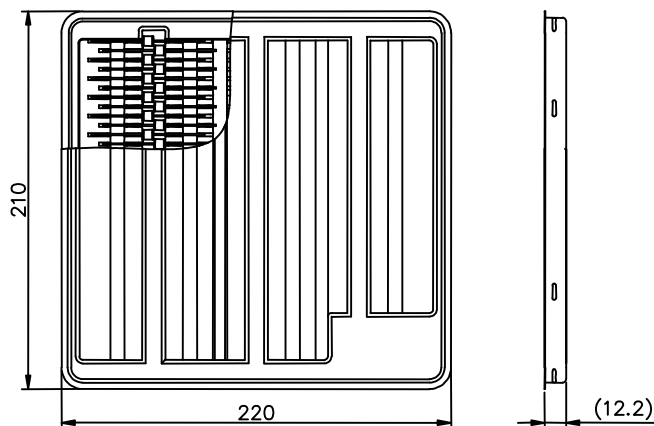
### Part Numbering



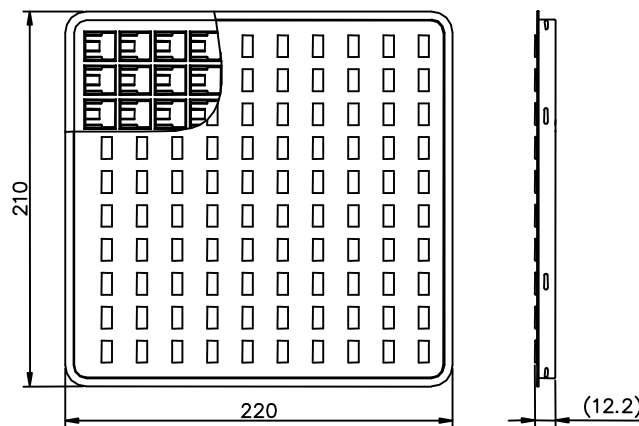
### Packaging Information Unit: mm

Part Number	Description	Quantity
UN2E5-XXXDL	100PCS per Tray, 10 Trays / Inner Carton	1000
UN2E5-XXXD	100PCS per Tray, 10 Trays / Inner Carton	1000

Tray used in UN2E5-XXXDL



Tray used in UN2E5-XXXD



### Cautions and warnings

- ⚠ Gas discharge tubes (GDT) must not be operated directly in power supply networks.
- ⚠ Gas discharge tubes (GDT) may become hot in case of longer periods of current stress (danger of burning).
- ⚠ Gas discharge tubes (GDT) may be used only within their specified values. In the event of overload, the head contacts may fail or the component may be destroyed.
- ⚠ Damaged Gas discharge tubes (GDT) must not be re-used.