

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

### UN2E8 / UN2H8 Series

#### Description

The high voltage (1.0 - 6.0KV) 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.

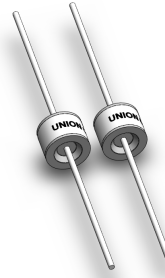
#### Agency Approvals

- 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 8/20 $\mu$ s pulse as defined by IEC 61000-4-5

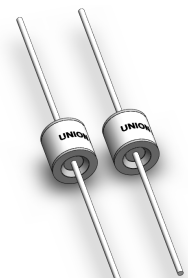
#### Applications

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

UN2E8-XXXLL



UN2H8-XXXLL



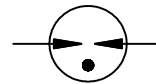
UN2E8-XXXL



UN2H8-XXXL



#### Schematic Symbol



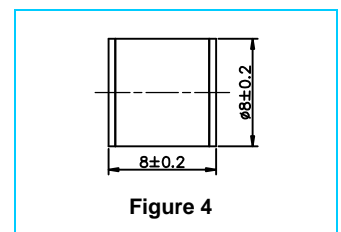
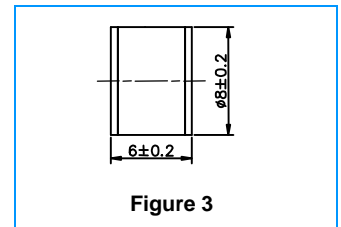
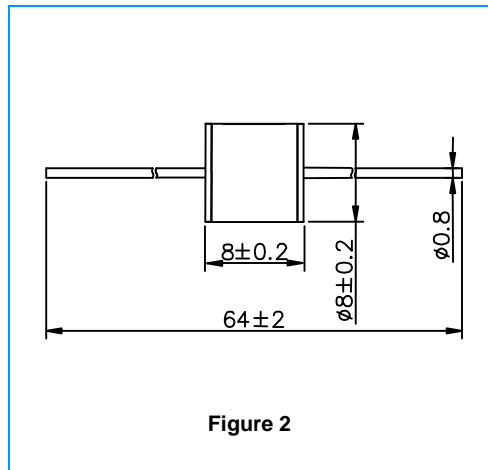
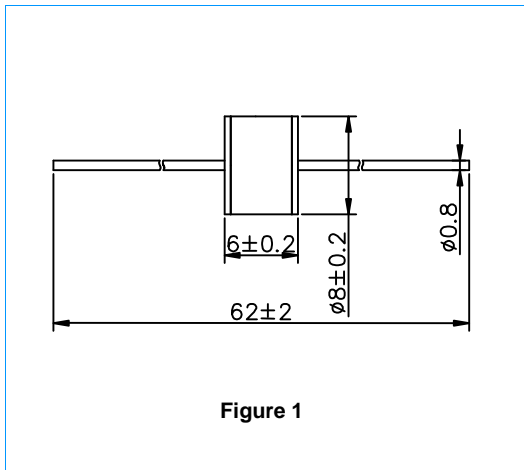
#### Product Characteristics

|  |   |        |
|--|---|--------|
| <b>Materials</b>                           | Nickel-plated with Tinplated wires                    |        |
| <b>Product Marking</b>                     | <b>UNION XXXXL</b><br>XXXX -Nominal voltage<br>L -5KA |        |
| <b>Glow to Arc Transition Current</b>      | < 0.5 Amps  |        |
| <b>Glow Voltage</b>                        | ~180 Volts  |        |
| <b>Storage and Operational Temperature</b> | -40 to +90°C  |        |
| <b>Weight</b>                              | UN2E8-XXXLL   | ~1.5g  |
|  | UN2E8-XXXL  | ~1.35g |
|  | UN2H8-XXXLL   | ~1.6g  |
|  | UN2H8-XXXL  | ~1.45g |

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

## UN2E8 / UN2H8 Series

### Dimensions (Unit: mm)



### Electrical Characteristics

| Part Number  | Figure | 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               | @100V/μs                           | @1KV/μs |                               |                     | @1MHz       | @1A                               | @8/20μs ±5 times              | @8/20μs 1 time |
| UN2E8-1000LL | 1      | 1000L   | 1000V±20%             | 1500V                              | 1600V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-1000L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-1600LL | 1      | 1600L   | 1600V±20%             | 2200V                              | 2400V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-1600L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-2000LL | 1      | 2000L   | 2000V±20%             | 3000V                              | 3500V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-2000L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-2500LL | 1      | 2500L   | 2500V±20%             | 3800V                              | 4000V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-2500L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-2700LL | 1      | 2700L   | 2700V±20%             | 3800V                              | 4000V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-2700L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-3000LL | 1      | 3000L   | 3000V±20%             | 4300V                              | 4500V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-3000L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2E8-3500LL | 1      | 3500L   | 3500V±20%             | 4800V                              | 5000V   | 1 GΩ (at 100V)                | 1.5pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2E8-3500L  | 3      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2H8-4000LL | 2      | 4000L   | 4000V±20%             | 5400V                              | 5600V   | 1 GΩ (at 100V)                | 1.0pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2H8-4000L  | 4      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2H8-4500LL | 2      | 4500L   | 4500V±20%             | 5800V                              | 6000V   | 1 GΩ (at 100V)                | 1.0pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2H8-4500L  | 4      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2H8-5000LL | 2      | 5000L   | 5000V±20%             | 6000V                              | 6500V   | 1 GΩ (at 100V)                | 1.0pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2H8-5000L  | 4      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2H8-5500LL | 2      | 5500L   | 5500V±20%             | 6500V                              | 7000V   | 1 GΩ (at 100V)                | 1.0pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2H8-5500L  | 4      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |
| UN2H8-6000LL | 2      | 6000L   | 6000V±20%             | 7500V                              | 8000V   | 1 GΩ (at 100V)                | 1.0pF               | ~25V        | 5KA                               | 10KA                          |                |
| UN2H8-6000L  | 4      |         |                       |                                    |         |                               |                     |             |                                   |                               |                |

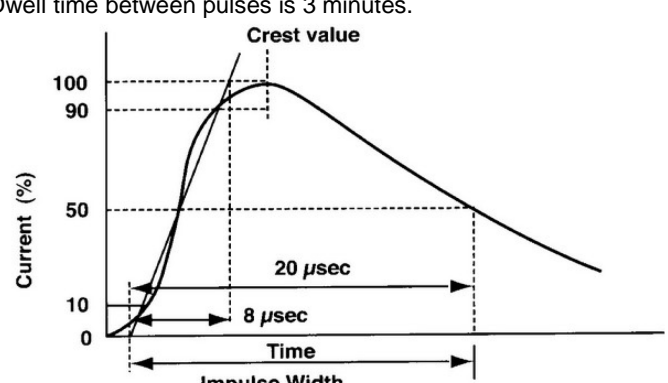
**Notes:**

- 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

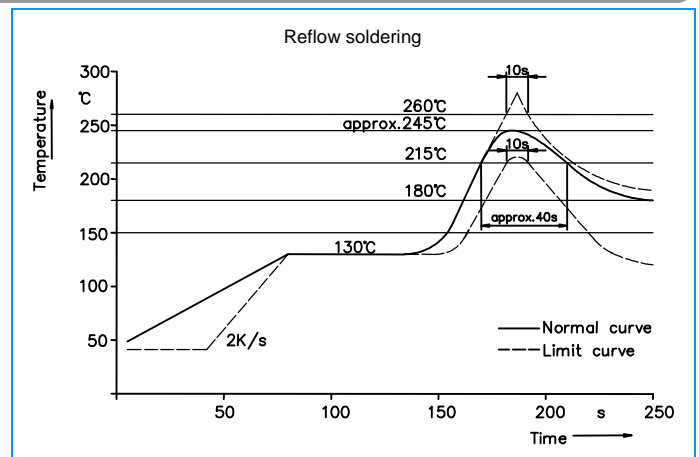
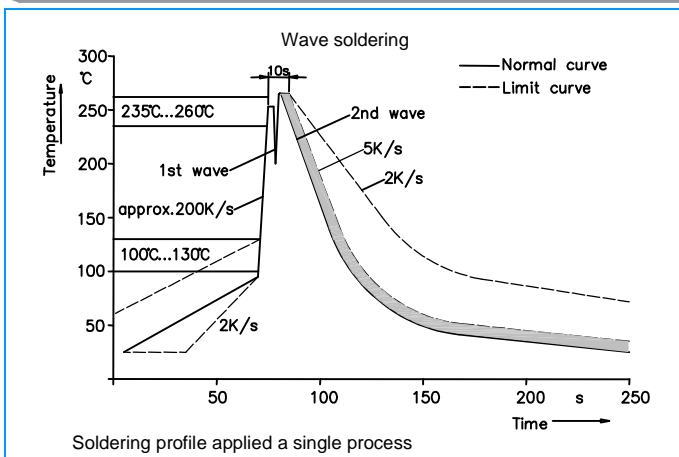
# High Voltage 2-Electrode Gas Discharge Tube (GDT)

## UN2E8 / UN2H8 Series

### 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.<br>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.<br><br> |                             |

### Recommended soldering profile



### Soldering Parameters - Hand Soldering

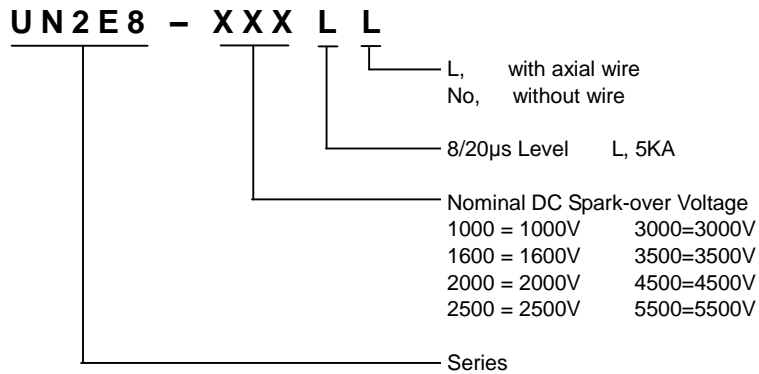
Solder Iron Temperature: 350 $^{\circ}C$   $\pm 5^{\circ}C$

Heating Time: 5 seconds max.

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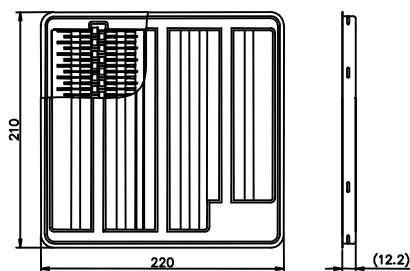
### Part Numbering



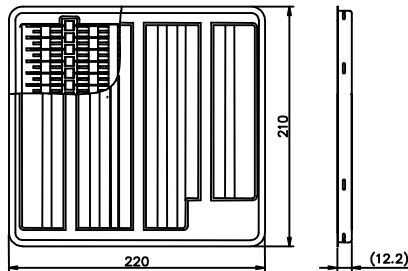
### Packaging Information Unit: mm

| Part Number | Description                              | Quantity |
|-------------|--|----------|
| UN2E8-XXXLL | 100PCS per Tray, 10 Trays / Inner Carton | 1000     |
| UN2H8-XXXLL | 50PCS per Tray, 10 Trays / Inner Carton  | 500      |
| UN2E8-XXXL  | 100PCS per Tray, 10 Trays / Inner Carton | 1000     |
| UN2H8-XXXL  | 100PCS per Tray, 10 Trays / Inner Carton | 1000     |

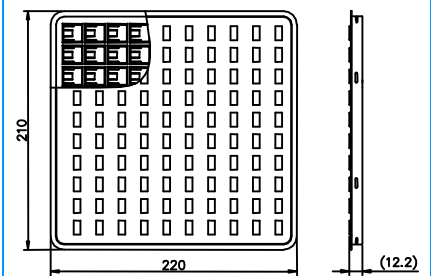
Tray used in UN2E8-XXXLL



Tray used in UN2H8-XXXLL



Tray used in UN2E8 / 2H8-XXXL



### Cautions and warnings

- 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.