

3-Electrode Gas Discharge Tube (GDT)

UN3E8 Series

Description

Gas discharge Tubes (GDT) are classical components for protecting the installations of the telecommunications. It is essential that IT and telecommunications systems -with their high-grade but sensitive electronic circuits - be protected by arresters. They are thus fitted at the input of the power supply system together with varistors and at the connection points to telecommunication lines. They have become equally indispensable for protecting base stations in mobile telephone systems as well as extensive cable television (CATV) networks with their repeaters and distribution systems.

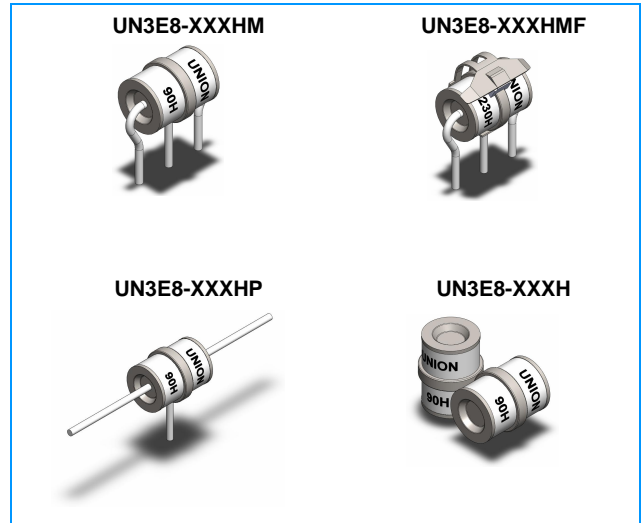
These protective components are also indispensable in other sectors, In AC power transmission systems, they are often used with current-limiting varistors, In customer premises equipment such as DSL modems, WLAN routers, TV sets and cable modems In air-conditioning equipment, the integral black-box concept offers graduated protection by combining arresters with varistors, PTC, diodes and inductor.

Features

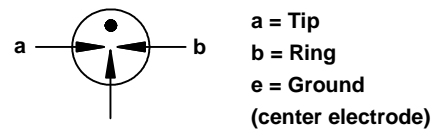
- u Non-Radioactive
- u RoHS compliant
- u Low insertion loss
- u Excellent response to fast rising transients
- u Ultra low capacitance
- u 20KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5
- u Available with thermal failsafe option (add 'F' suffix to part number)

Applications


- u Communication equipment
- u CATV equipment
- u Test equipment
- u Data lines
- u Power supplies
- u Telecom SLIC protection
- u Broadband equipment
- u ADSL equipment, including ADSL2+
- u XDSL equipment
- u Satellite and CATV equipment
- u Consumer electronics



Schematic Symbol



Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|--|--------------------|
|  | E341061 |

Product Characteristics

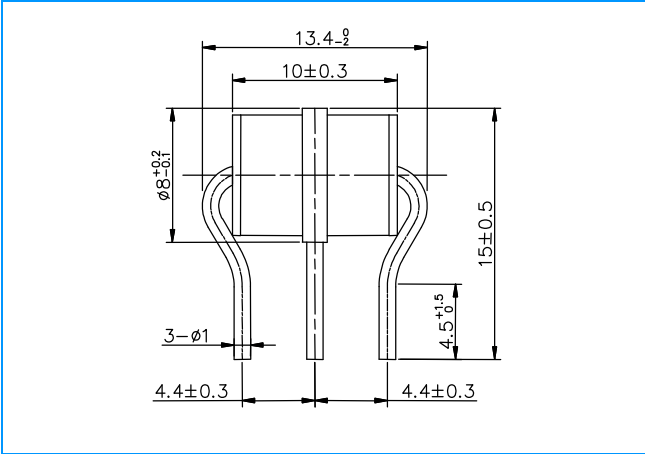
| | | |
|-------------------------------------|--|-------|
| Materials | Nickel-plated with Tinplated wires | |
| Product Marking | UNION XXXH XXX -Nominal voltage H -20KA | |
| Glow to Arc Transition Current | ~1 Amps | |
| Glow Voltage | ~70 Volts | |
| Storage and Operational Temperature | -40 to +90°C | |
| Weight | UN3E8-XXXHM | ~2.0g |
| | UN3E8-XXXHMF | ~2.3g |
| | UN3E8-XXXHP | ~2.1g |
| | UN3E8-XXXH | ~1.8g |
| Climatic category (IEC 60068-1) | 40/ 90/ 21 | |

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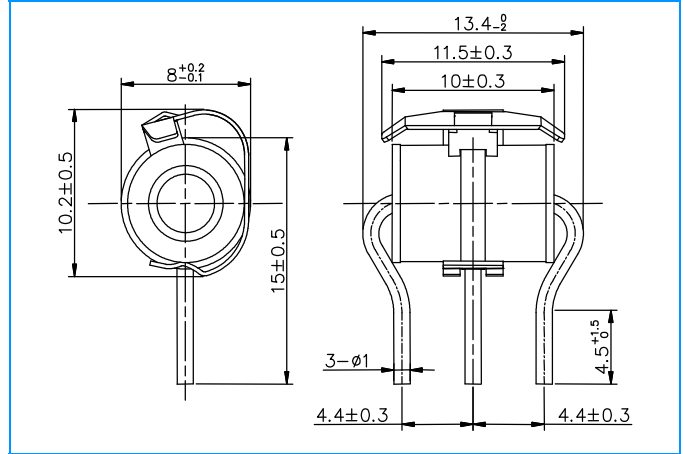
UN3E8 Series

Dimensions (Unit: mm)

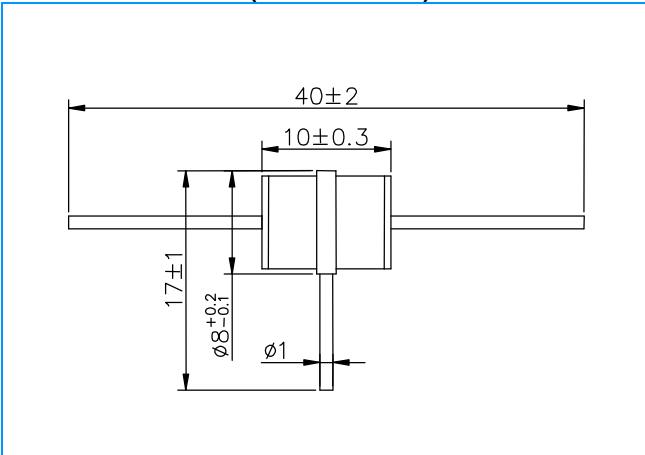
Radial Leded Devices (UN3E8-XXXHM)



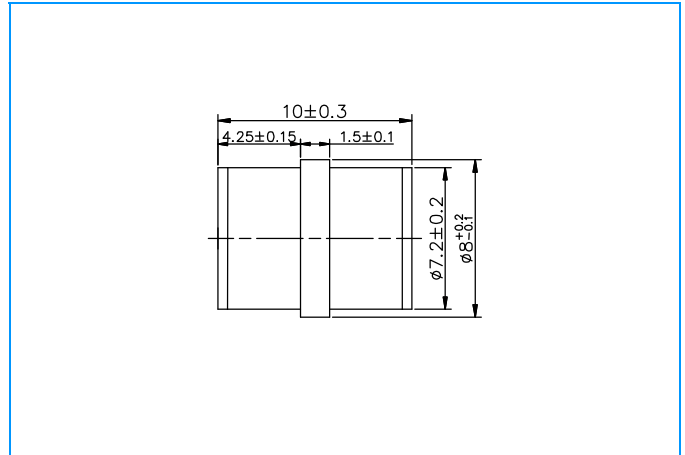
Radial Leded Devices with Fail-Safe (UN3E8-XXXHMF)



"T" Leded Devices (UN3E8-XXXHP)



Without wire Devices (UN3E8-XXXH)



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 | Nominal Alternating Discharge Current | Impulse Life |
| | | | | | | | | | | | |
| UN3E8-75HM UN3E8-75HMF UN3E8-75HP UN3E8-75H | UNION 75H | 75V±20% | <500V | <600V | 1 GΩ (at 25V) | <1.5pF | ~15V | 20KA | 25KA | 20A | 200A |
| UN3E8-90HM UN3E8-90HMF UN3E8-90HP UN3E8-90H | UNION 90H | 90V±20% | <500V | <600V | 1 GΩ (at 50V) | <1.5pF | ~15V | 20KA | 25KA | 20A | 200A |

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Electrical Characteristics (Continue)

| Part Number | Marking | 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 |
| | | | | | | | | | | | |
| UN3E8-150HM UN3E8-150HMF UN3E8-150HP UN3E8-150H | UNION 150H | 150V±20% | <500V | <600V | 1 G Ω (at 50V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-230HM UN3E8-230HMF UN3E8-230HP UN3E8-230H | UNION 230H | 230V±20% | <600V | <700V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-250HM UN3E8-250HMF UN3E8-250HP UN3E8-250H | UNION 250H | 250V±20% | <600V | <700V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-300HM UN3E8-300HMF UN3E8-300HP UN3E8-300H | UNION 300H | 300V±20% | <800V | <900V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-350HM UN3E8-350HMF UN3E8-350HP UN3E8-350H | UNION 350H | 350V±20% | <800V | <900V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-420HM UN3E8-420HMF UN3E8-420HP UN3E8-420H | UNION 420H | 420V±20% | <900V | <1000V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-470HM UN3E8-470HMF UN3E8-470HP UN3E8-470H | UNION 470H | 470V±20% | <900V | <1000V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-600HM UN3E8-600HMF UN3E8-600HP UN3E8-600H | UNION 600H | 600V±20% | <1100V | <1200V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |
| UN3E8-800HM UN3E8-800HMF UN3E8-800HP UN3E8-800H | UNION 800H | 800V±20% | <1200V | <1400V | 1 G Ω (at 100V) | <1.5pF | ~25V | 20KA | 25KA | 20A | 200A |

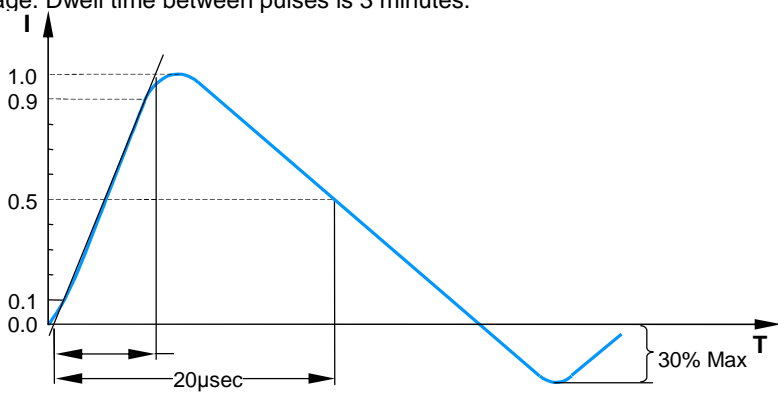
Notes:

- 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

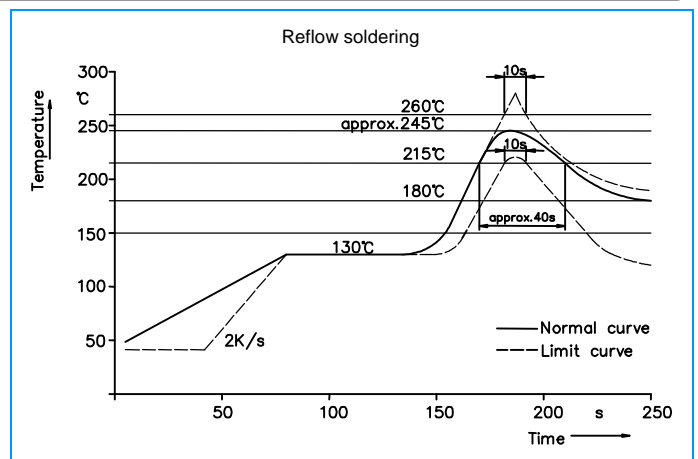
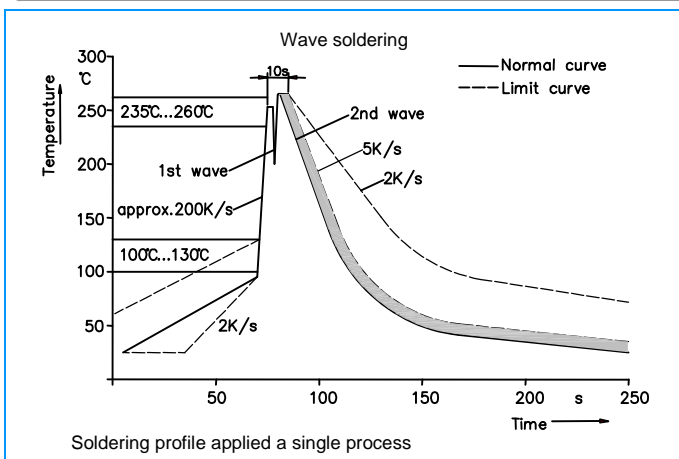
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Electrical Rating

| Item | Test Condition / Description | Requirement |
|--|--|-----------------------------|
| DC Spark-over Voltage | The voltage is measured with a slowly rate of rise $dv / dt=100V/s$ | To meet the specified value |
| Impulse Spark-over Voltage | The maximum impulse spark-over voltage is measured with a rise time of $dv / dt=100V/\mu s$ or $1KV/\mu s$ | |
| Insulation Resistance | The resistance of gas tube shall be measured each terminal each other terminal, please see above spec. | |
| Capacitance | The capacitance of gas tube shall be measured each terminal to each other terminal. Test frequency :1MHz | |
| Nominal Impulse Discharge Current | 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.  | |
| Nominal Alternating Discharge Current | Rated RMS value of AC current at 50Hz, 1 sec. 10 times. Intervals: 3min. The DC spark-over voltage does not exceed $\pm 30\%$ of the nominal DC spark-over voltage. $IR > 10^8 ohms$. | |

Recommended soldering profile



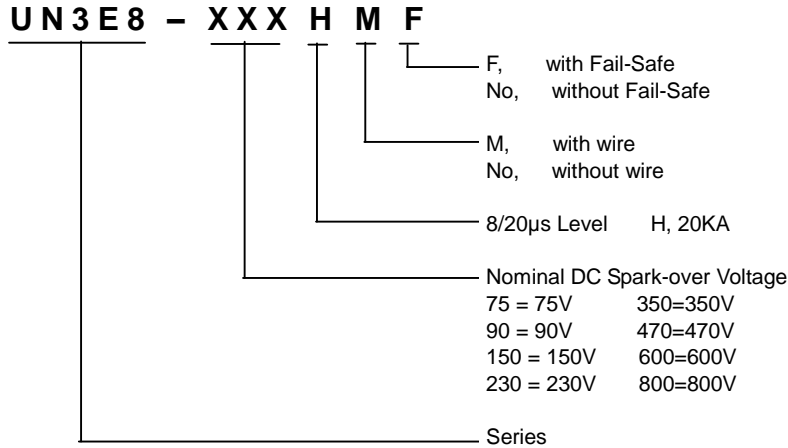
Soldering Parameters - Hand Soldering

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

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Part Numbering

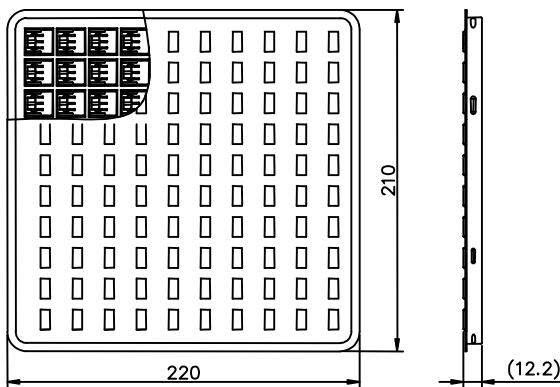


Packaging

| Part Number | Description | Quantity |
|--------------|--|----------|
| UN3E8-XXXHM | 100PCS per Tray, 10 Trays / Inner Carton | 1000 |
| UN3E8-XXXHMF | 100PCS per Tray, 10 Trays / Inner Carton | 1000 |
| UN3E8-XXXHP | 50PCS per Tray, 10 Trays / Inner Carton | 500 |
| UN3E8-XXXH | 100PCS per Tray, 10 Trays / Inner Carton | 1000 |

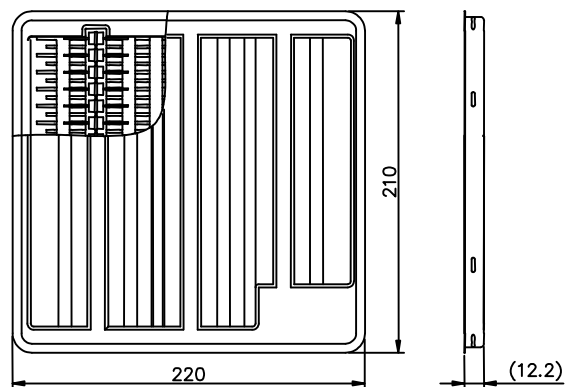
Tray Dimension (Unit: mm)

Used in UN3E8-XXXHM, UN3E8-XXXHMF, UN3E8-XXXH



Tray Dimension (Unit: mm)

Used in UN3E8-XXXHP



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.