

High Voltage 2-Electrode Gas Discharge Tube (GDT)

SC2E5 Series

Description

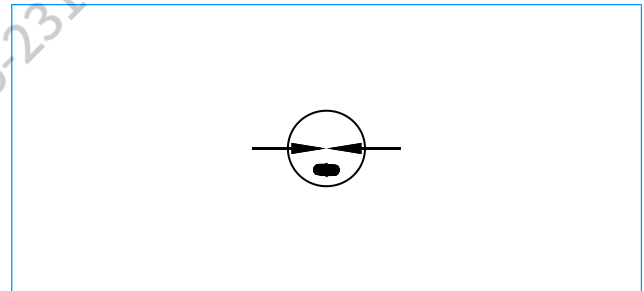
The high voltage (1.0-4.0KV) gas discharge tubes are designed for surge protection and high isolation applications, and for applications for which bias voltages or signal levels of several hundred volts are normally present.



Features

- ◆ Non-Radioactive
- ◆ RoHS compliant
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ Ultra low capacitance
- ◆ 2.5KA surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5

Schematic Symbol



Applications

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

Product Characteristics

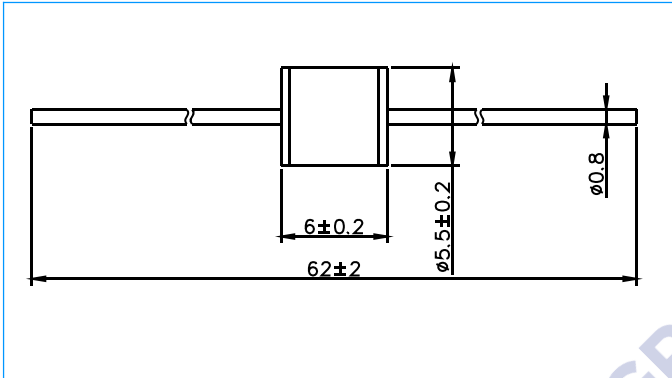
| | | |
|--|---|--------|
| Materials | Nickel-plated with Tinplated wires | |
| Product Marking | SOCAY XXXXD XXXX -Nominal voltage D -2.5KA | |
| Glow to Arc Transition Current | < 0.5Amps | |
| Glow Voltage | ~180 Volts | |
| Storage and Operational Temperature | -40 to +90°C | |
| Weight | SC2E5-XXXXDL | ~1.0g |
| | SC2E5-XXXXD | ~0.85g |
| Climatic category (IEC 60068-1) | 40/ 90/ 21 | |

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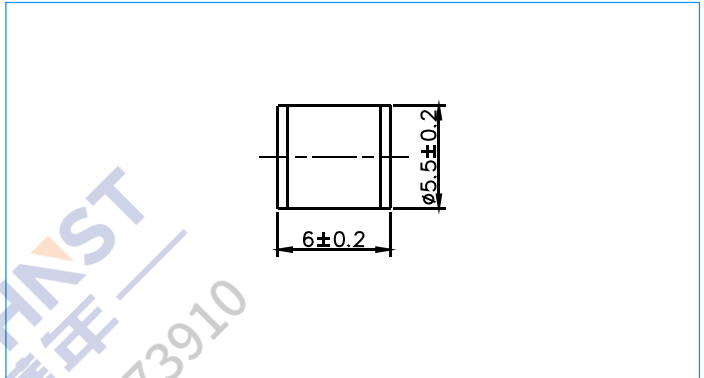
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Dimensions (Unit: mm)

Axial Leaded Devices (SC2E5-XXXDL)



Without wire Devices (SC2E5-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 |
| SC2E5-1000DL SC2E5-1000D | SOCAY 1000D | 1000V±20% | <1500V | <1600V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-1600DL SC2E5-1600D | SOCAY 1600D | 1600V±20% | <2200V | <2400V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-2000DL SC2E5-2000D | SOCAY 2000D | 2000V±20% | <3000V | <3500V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-2500DL SC2E5-2500D | SOCAY 2500D | 2500V±20% | <3800V | <4000V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-2700DL SC2E5-2700D | SOCAY 2700D | 2700V±20% | <3800V | <4000V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-3000DL SC2E5-3000D | SOCAY 3000D | 3000V±20% | <4300V | <4500V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-3500DL SC2E5-3500D | SOCAY 3500D | 3500V±20% | <4800V | <5000V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-3600DL SC2E5-3600D | SOCAY 3600D | 3600V±20% | <4800V | <5000V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |
| SC2E5-4000DL SC2E5-4000D | SOCAY 4000D | 4000V±20% | <5400V | <5600V | 1 GΩ (at 100V) | <1.0pF | ~25V | 2.5KA | 5KA |

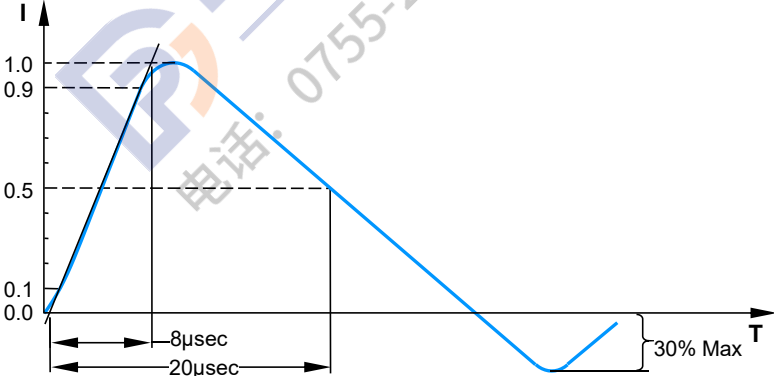
Notes:

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

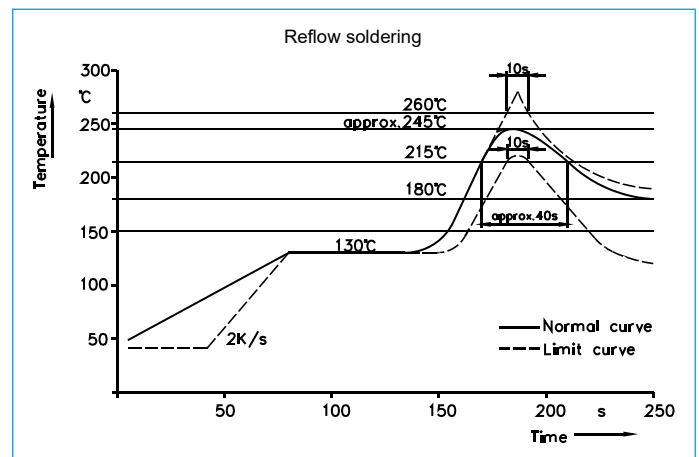
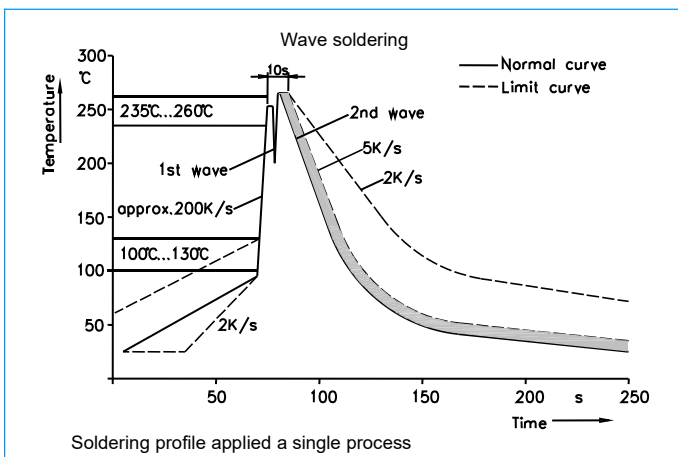
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Electrical Rating

| 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.  | |

Recommended Soldering Profile



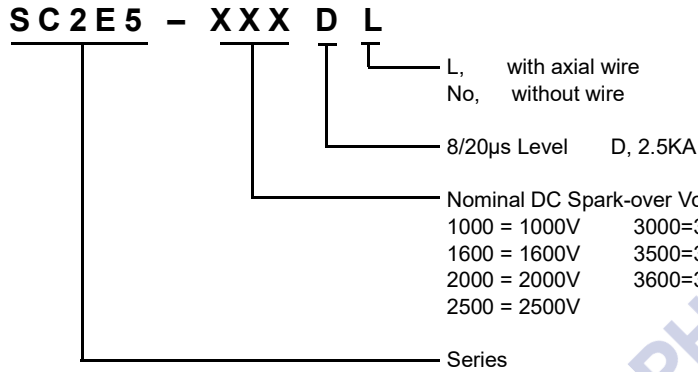
Soldering Parameters - Hand Soldering

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

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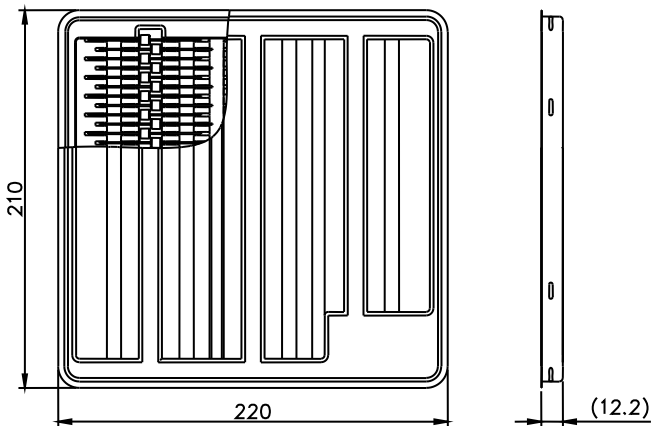
Part Numbering



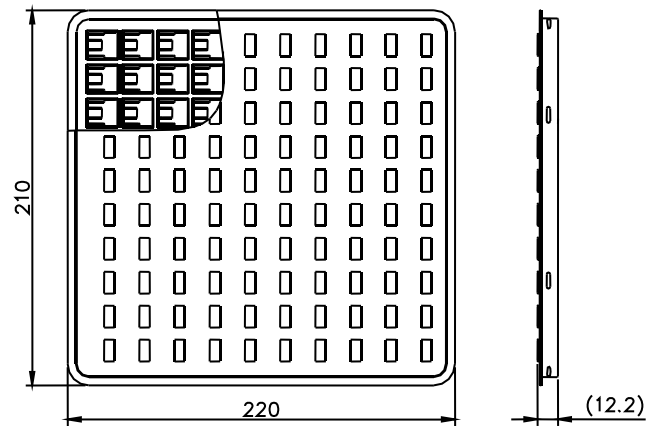
Packaging Information

| Part Number | Description | Quantity |
|-------------|--|----------|
| SC2E5-XXXDL | 100PCS per Tray, 10 Trays / Inner Carton | 1000 PCS |
| SC2E5-XXXD | 100PCS per Tray, 10 Trays / Inner Carton | 1000 PCS |

Tray used in SC2E5-XXXDL



Tray used in SC2E5-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.