3-Electrode Gas Discharge Tube (GDT)

SC3E6 Series

Description

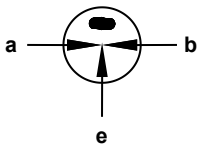
Gas discharge Tubes (GDT) are classical components for protecting the installations of the telecommunications. It is essential that IT and telecommunications systems -with their high-grade but sensitive electronic circuits - be protected by arresters. They are thus fitted at the input of the power supply 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.

SC3E6-XXXMM **SC3E6-XXXM**



Schematic Symbol



a = Tip
b = Ring
e = Ground
(center electrode)

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

Applications

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

Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E341061

Product Characteristics

Materials	Nickel-plated with Tinplated wires	
Product Marking	**SOCAY** **XXXM** XXX -Nominal voltage M -10KA	
Glow to Arc Transition Current	~1 Amps	
Glow Voltage	~70 Volts	
Storage and Operational Temperature	-40 to +90°C	
Weight	**SC3E6-XXXMM**	~1.30g
	SC3E6-XXXM	~1.15g
Climatic category (IEC 60068-1)	40/ 90/ 21	

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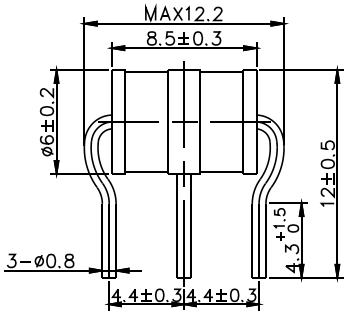
SOCAY

3-Electrode Gas Discharge Tube (GDT)

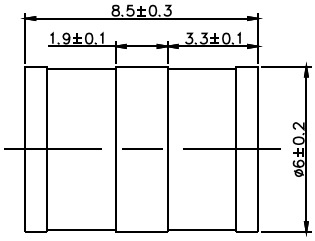
SC3E6 Series

Dimensions (Unit: mm)

Radial Leaded Devices (SC3E6-XXXMM)



Without wire Devices (SC3E6-XXXM)



Electrical Characteristics

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
		@100V/S	@100V/μs	@1KV/μs		@1MHz	@1A	@8/20μs [4] ±5 times	@8/20μs [4] 1 time	@50Hz [4] 1 Sec 10 times	@10/1000μs [4] 300 times
SC3E6-75MM SC3E6-75M	SOCAY 75M	75V±20%	＜500V	＜600V	1 GΩ (at 25V)	＜1.5pF	~15V	10KA	20KA	10A	200A
SC3E6-90MM SC3E6-90M	SOCAY 90M	90V±20%	＜500V	＜600V	1 GΩ (at 50V)	＜1.5pF	~15V	10KA	20KA	10A	200A
SC3E6-150MM SC3E6-150M	SOCAY 150M	150V±20%	＜500V	＜600V	1 GΩ (at 50V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-230MM SC3E6-230M	SOCAY 230M	230V±20%	＜600V	＜700V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-250MM SC3E6-250M	SOCAY 250M	250V±20%	＜600V	＜700V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-300MM SC3E6-300M	SOCAY 300M	300V±20%	＜800V	＜900V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-350MM SC3E6-350M	SOCAY 350M	350V±20%	＜800V	＜900V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-420MM SC3E6-420M	SOCAY 420M	420V±20%	＜900V	＜1000V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-470MM SC3E6-470M	SOCAY 470M	470V±20%	＜900V	＜1000V	1 GΩ (at 100V)	＜1.5pF	~20V	10KA	20KA	10A	200A
SC3E6-600MM SC3E6-600M	SOCAY 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

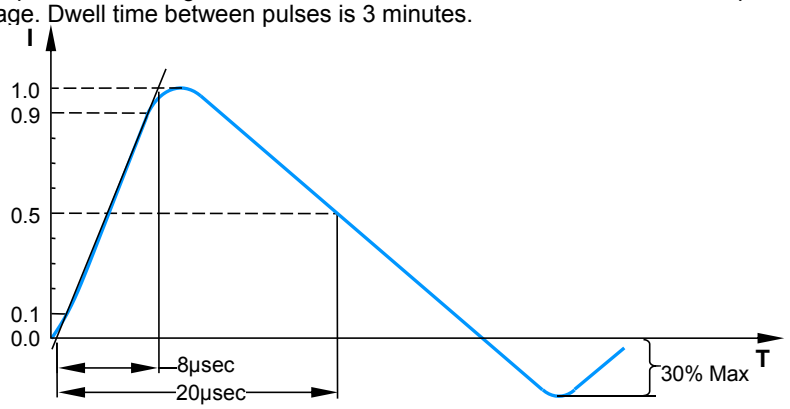
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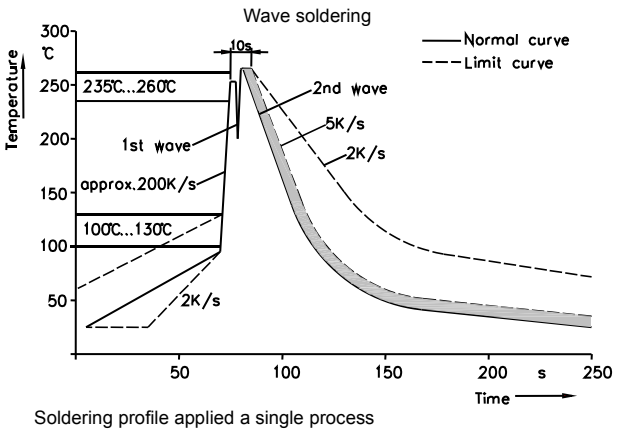
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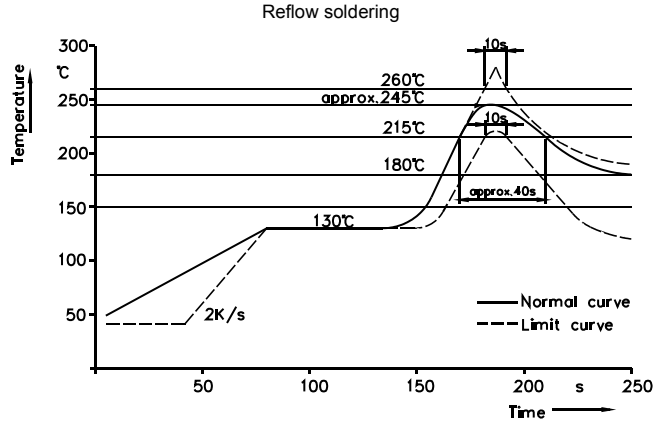
Electrical Rating

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//μs or 1KV/μs	
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 8/20μs 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 ±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 ±30% of the nominal DC spark-over voltage. IR > 10^8ohms.	

Recommended Soldering Profile



Soldering profile applied a single process



Soldering Parameters - Hand Soldering

Solder Iron Temperature: 350°C +/-5°C
Heating Time: 5 seconds max.

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3-Electrode Gas Discharge Tube (GDT)

SC3E6 Series

Part Numbering

S C 3 E 6 – X X X M M

- M, with wire
- No, without wire

8/20μs Level M, 10KA

Nominal DC Spark-over Voltage

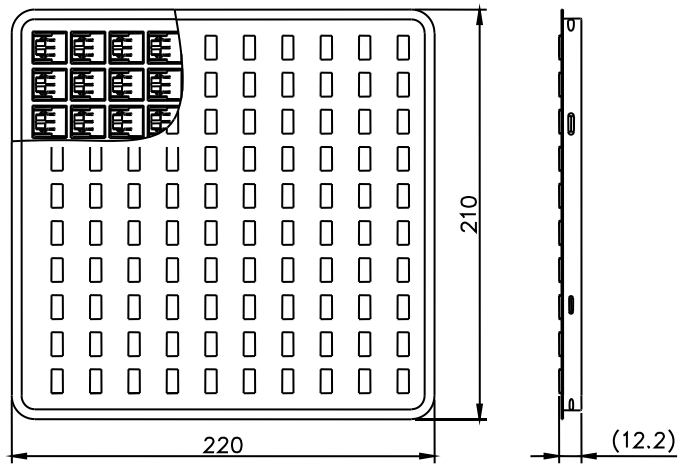
75 = 75V	350=350V
90 = 90V	420=420V
150 = 150V	470=470V
230 = 230V	600=600V

Series

Packaging

Part Number	Description	Quantity
SC3E6-XXXMM	100PCS per Tray, 10 Trays / Inner Carton	1000 PCS
SC3E6-XXXM	100PCS per Tray, 10 Trays / Inner Carton	1000 PCS

Tray Dimension (Unit: mm)



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.

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