2-Electrode Gas Discharge Tube (GDT)

QX2E5 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

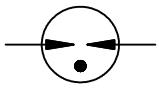
- Non-Radioactive
- RoHS compliant
- Low insertion loss
- Excellent response to fast rising transients
- Ultra low capacitance
- 5KA surge capability tested with 8/20μs pulse as defined by IEC 61000-4-5

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

QX2E5-XXXLL **QX2E5-XXXL**

Schematic Symbol



Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E466847

Product Characteristics

Materials	Nickel-plated with Tinplated wires	
Product Marking	XXX -Nominal voltage L -5KA	
Glow to Arc Transition Current	< 0.5 Amps	
Glow Voltage	~60 Volts	
Storage and Operational Temperature	-40 to +90°C	
Weight	**QX2E5-XXXLL**	~1.0g
	QX2E5-XXXL	~0.85g

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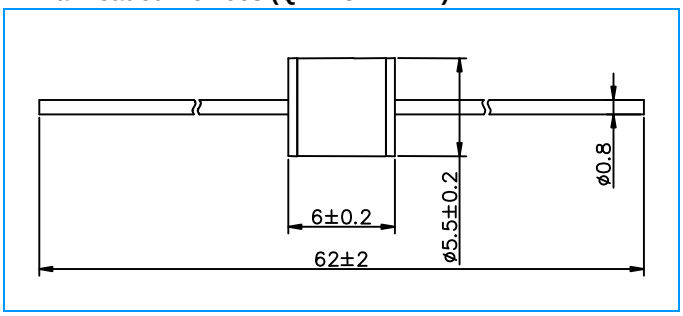
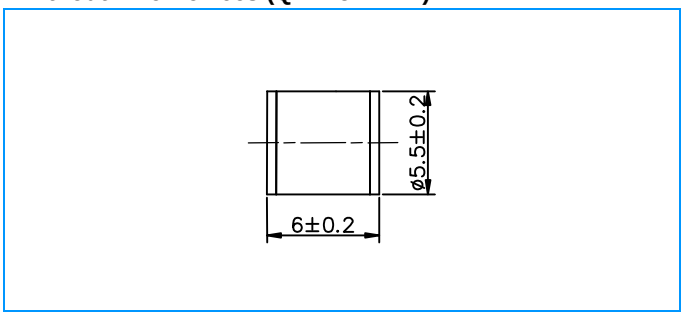
Dimensions (Unit: mm)

Axial Leaded Devices (QX2E5-XXXLL)



Without wire Devices (QX2E5-XXXL)



Electrical Characteristics

Part Number	Marking	DC park-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 Alter Discharge Current	Impulse Life
		@100V/S	@100V/μs	@1KV/μs		@1MHz	@1A	@8/20μs ±5 times	8/20μs 1 time	@50Hz 1 Sec 10 times	@10/1000μs 300 times
QX2E5-75LL QX2E5-75L	75L	75V±20%	500V	600V	1 GΩ (at 25V)	1.0pF	~15V	5KA	10KA	5A	100A
QX2E5-90LL QX2E5-90L	90L	90V±20%	500V	600V	1 GΩ (at 50V)	1.0pF	~15V	5KA	10KA	5A	100A
QX2E5-150LL QX2E5-150L	150L	150V±20%	500V	600V	1 GΩ (at 50V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-230LL QX2E5-230L	230L	230V±20%	600V	700V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-250LL QX2E5-250L	250L	250V±20%	700V	800V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-300LL QX2E5-300L	300L	300V±20%	800V	900V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-350LL QX2E5-350L	350L	350V±20%	800V	900V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-400LL QX2E5-400L	400L	400V±20%	900V	1000V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-470LL QX2E5-470L	470L	470V±20%	900V	1000V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-600LL QX2E5-600L	600L	600V±20%	1100V	1200V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A
QX2E5-800LL QX2E5-800L	800L	800V±20%	1200V	1400V	1 GΩ (at 100V)	1.0pF	~20V	5KA	10KA	5A	100A

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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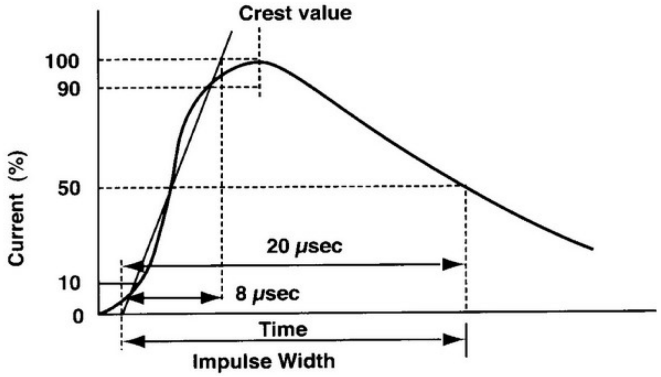
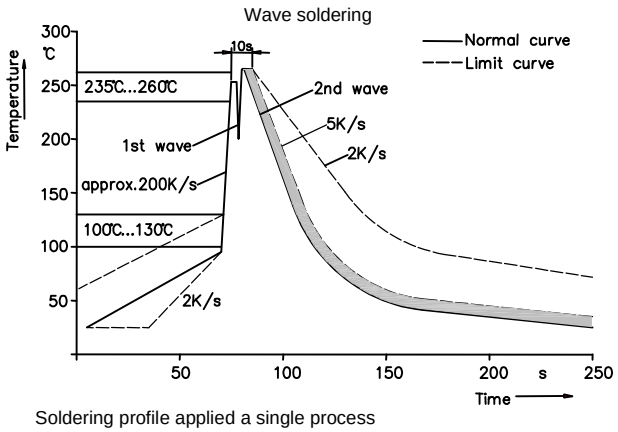
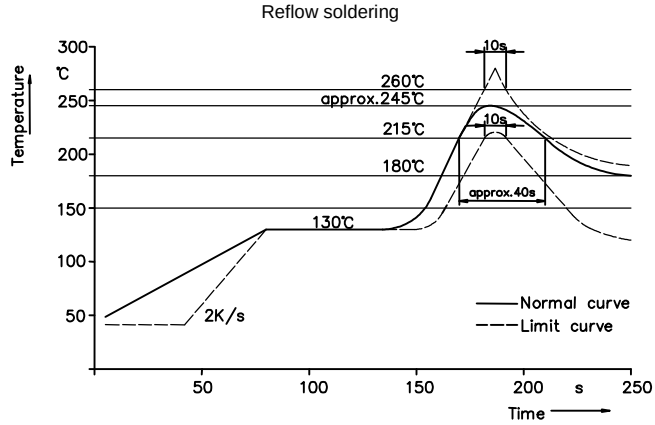
Electrical Rating

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 Parame ers

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

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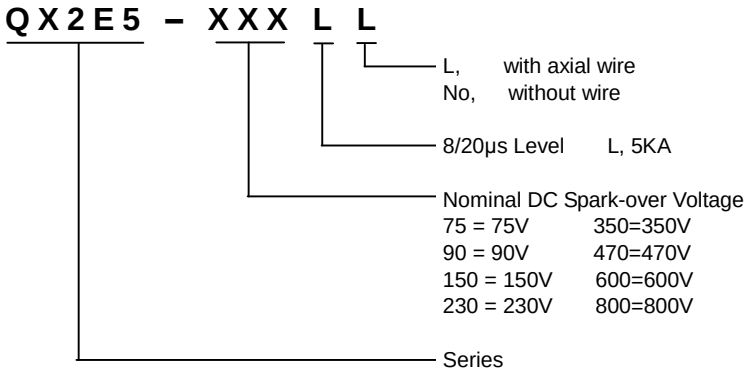
Part Numbering



Packaging Information

Part Number	Description	Quantity
QX2E5-XXXLL	1000PCS per Tape & Reel	1000
QX2E5-XXXL	100PCS per Tray, 10 Trays / Inner Carton	1000

Cautions and warnings

- **u** Gas discharge tubes (GDT) must not be operated directly in power supply networks.
- **u** Gas discharge tubes (GDT) may become hot in case of longer periods of current stress (danger of burning).
- **u** 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.
- **u** Damaged Gas discharge tubes (GDT) must not be re-used.