

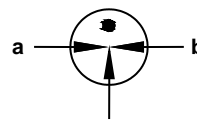
## Description

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.



## Schematic Symbol



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

## 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)

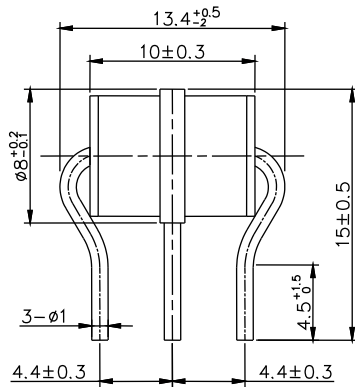
## Applications

- 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

## Product Characteristics

<b>Materials</b>	Nickel-plated with Tinplated wires
<b>Product Marking</b>	-20KA
<b>Glow to Arc Transition Current</b>	~1 Amps
<b>Glow Voltage</b>	~70 Volts
<b>Storage and Operational Temperature</b>	-40 to +90°C
<b>Weight</b>	~2.0g
<b>Climatic category (IEC 60068-1)</b>	40/ 90/ 21

**Dimensions (Unit: mm)**



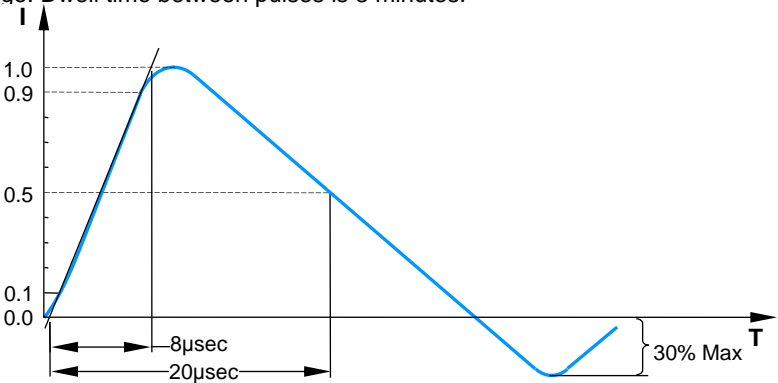
**Electrical Characteristics**

Part Number	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
K3RP075L-8	75V±20%	<500V	<600V	1 GΩ (at 25V)	<1.5pF	~15V	20KA	25KA	20A	200A
K3RP090L-8	90V±20%	<500V	<600V	1 GΩ (at 50V)	<1.5pF	~15V	20KA	25KA	20A	200A
K3RP150L-8	150V±20%	<500V	<600V	1 GΩ (at 50V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP230L-8	230V±20%	<600V	<700V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP250L-8	250V±20%	<600V	<700V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP300L-8	300V±20%	<800V	<900V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP350L-8	350V±20%	<800V	<900V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP420L-8	420V±20%	<900V	<1000V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP470L-8	470V±20%	<900V	<1000V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP600L-8	600V±20%	<1100V	<1200V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A
K3RP800L-8	800V±20%	<1200V	<1400V	1 GΩ (at 100V)	<1.5pF	~25V	20KA	25KA	20A	200A

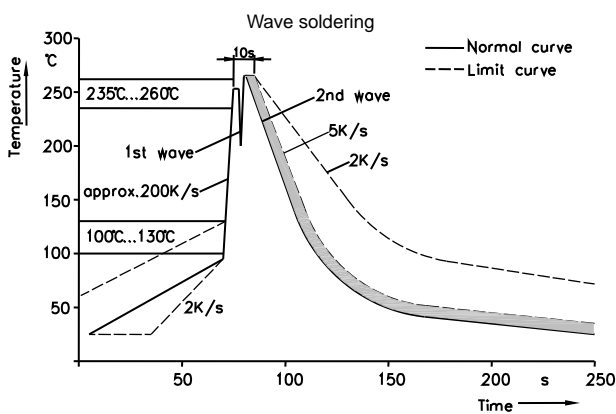
**Notes:**

- 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

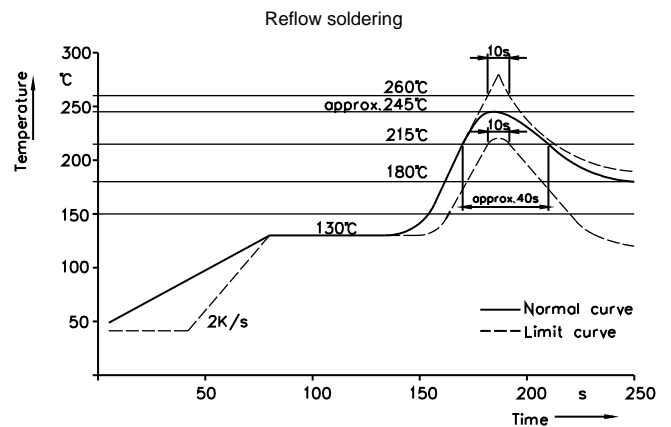
## Electrical Rating

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. 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. 	
<b>Nominal Alternating Discharge Current</b>	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 <sup>8</sup> ohms.	

## Recommended Soldering Profile



Soldering profile applied a single process



## Soldering Parameters - Hand Soldering

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

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