



PRODUCT SPECIFICATION

规格书

Customer (客户名称):

Customer P/N (客户料号):

Aillen P/N(爱伦料号):

CATEGORY(品名):

DESCRIPTION(描述):

Spec No.(承认书编号):

Date(发行日期):

AILLEN	
PREPARED (拟定)	CHECKED (审核)

CUSTOMER Please sign a copy after accepting	
APPROVAL (批准)	SIGNATURE (签名)

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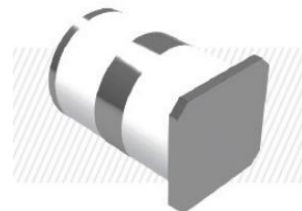
Approver
审批者

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1. Features

- Fast Response
- Stable Performance Over Surface Life
- High Current Rating
- Low Capacitance
- High Insulation Resistance
- RoHS & REACH Compliant
- Description (IEC 61643-312;GB/T18802.312)

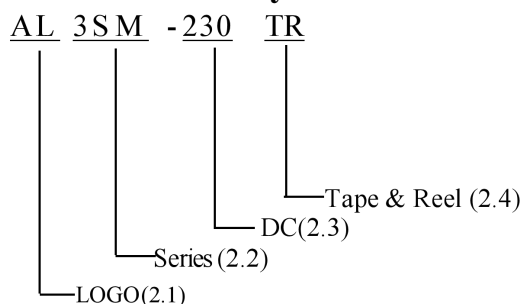


The Gas Discharge Tube (GDT) is a protective device which is filled with certain proportion of noble gas, or mixed gas or other and metalized ceramics, and then sealed at high temperature to form a singlegap or multi-gap switch type protective device.

When the protected circuit or equipment suffers to surge, GDT will change from high impedance state to low impedance state and release the surge energy to reduce the residual voltage of the circuit, and then protect the equipment or human body from the hazard of transient over voltage.

- The tube is recognized by UL497B (List No. : E535563)

2. Part Number System



2.1 LOGO Name:

Code	AL
LOGO	Aillen

2.2 Series:

Code	3SM
Product series	Elements Surface Mount Mini

2.3 DC Breakdown Voltage:

Code	230	1200	3600
Voltage(VDC)	230±20%	1200±20%	3600±20%

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2.4 Package

Code	TR
Package	Tape&Reel

3. Product Information

Product Structure

The vacuum component is filled with the fit Noble or mixed gas between the metal electrode and the metallized ceramic and welding them together by the high temperature and whether subjoin the wire and connection shape according to customer's requirement.

3.1 Main Material

Electrode, Ceramic, Brazing material, Lead foot (SMD No Lead foot);

3.2 Appearance

Without dirt and crack, marking should be clear;

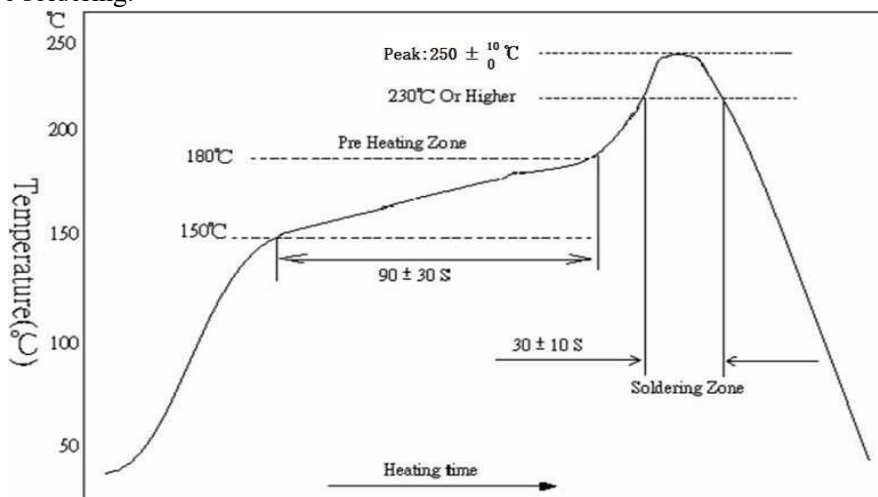
3.3 Plating

Electrode: Plating nickel; Lead foot: Plating Tin;

3.4 Marking

Blue, LOGO, Part Number : AL3SM230;

3.5 Wave soldering:



4. Specifications

Part No.	Breakdown Voltage (V)	Maximum Impulse Breakdown Voltage(V)		Maximum Impulse Discharge Current 8/20μs(KA)		Impulse Life((times))
	100~2000V/S	100V/μs	1000V/μs	1time	10times	10/1000μs,200A
3SM-230	230 ±20%	600	700	15	10	300
Part No.	DC Holdover Voltage(V)	Alternating Discharge Current(A)		Minimum Insulation Resistance(GΩ)		Maximum Capacitance(pF)
	< 150ms	50Hz, 1Sec	Single 9cycles	Note 1		1MHz
3SM-230	135	10	60	1		2

Remark:
Insulation resistance test condition:

DC Breakdown Voltage	≤150V	151~400V	401~1000V	1001~2000V	≥2001V
DC Measuring Voltage	50V	100V	250V	500V	1000V

5. Glossary (IEC 61643-311;GB/T18802.311)

Gas Discharge Tube

A gap, or several gaps, in an enclosed discharge medium, other than air at Atmospheric pressure, designed to protect apparatus or personnel, or both, from high transient voltages.

5.1 DC Breakdown (Spark-over) Voltage (Vs)

The GDT shall be placed for at least 15min when no voltage is applied, the test shall be conducted at a voltage rise rate of 100v/s~2000v/s under this circumstances.

5.2 Maximum Impulse Breakdown Voltage (Vsi)

The maximum voltage rise rate of the measured terminal measured by GDT is 100V/μs, 1000V/μs, or 5000V/μs.

5.3 Maximum Impulse Discharge Current

GDT can withstand 1 time, More than once or positive and negative each N times of the maximum impact current value (current waveform 8/20μs or 10/350μs), More than once or N times of impact each interval of 3 minutes.

5.4 Impulse Withstanding Voltage Capacity

At the rated maximum discharge current (open circuit voltage waveform 10x700μs), the GDT shall be able to withstand plus or minus 5 times each at an interval of 3 minutes.

5.5 Nominal Discharge Current

Apply rated RMS of ac current of 50Hz*1 second multiply 10 times (each interval is 3 minutes) or Single9cycles to the product.

5.6 Follow On Current

An alternating current is applied to the standard test circuit (power frequency current is limited by resistance), and a shock current is applied to the GDT product so that it is on, while the current flowing through the GDT product is provided by the connected AC power supply.

5.7 Breakdown time

A voltage source with a fixed voltage gradient (1000V/uS or 5000V/uS) is applied to both ends of the GDT to measure the response time (there is a delay time between the moment when the transient over voltage starts acting on both ends of the discharge tube and the actual discharge time of the product)

5.8 Maximum continuous operating voltage

Maximum continuous AC/DC voltage that can be plied when the product is in normal operation.

5.9 Impulse Life

The GDT can withstand rated times of current shock (current waveform: 8/20 μ s, 10/1000 μ s or 5/320 μ s),The interval of each shock is 3 minutes.

5.10 DC Holdover Voltage

Under the specified circuit conditions, GDT after a shock discharge, it from the conduction and restore to the high impedance state of the applied DC voltage (DC test voltage is divided into 52V/80V and 135V three grades).

5.11 Minimum Insulation Resistance

A rated voltage is applied between the two endpoints of the GDT to measure the resistance.

5.12 Maximum Capacitance

Measure the capacitance between the two ends of the GDT using a test frequency of 1MHz and a test voltage of 0.5V.

5.13 Arc Voltage

The voltage measured across the tube while in lowest impedance state or arc mode.

5.14 Glow Voltage

The peak value of the voltage drop across the GDT when a glow-current is flowing.

5.15 AC/DC withstand Voltage

By applying a certain voltage(AC/DC) to the product through high voltage equipment test, to ensure that the product is not broken down.

6. Technical Term or Test methods

6.1 Storage conditions (-40°C~105°C)

Storage conditions without voltage applied

Please store products in the environments of dry,ventilation and no-corrosion, period One year.

6.2 Operational temperature (-40°C~105°C)

Gas discharge tubes shall be capable of withstanding during operational conditions without damage

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6.3 Test methods :

Unless otherwise specified, all tests are made under environmental conditions as given below, Temperature:15~35°C, Relative humidity:25~80%RH.

7. Warning

7.1 Do not operate gas discharge tube in power supply networks, whose maximum operation voltage exceeds the minimum spark - over voltage of the gas discharge tube.

7.2 Gas discharge tube may become hot in the event of longer periods of current stress (burn risk).In the event of overload the connectors may fail or the component may be destroyed.

7.3 If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.

7.4 Gas discharge tube must be handled with care and must not be dropped.

7.5 Do not continue to use damaged gas discharge tube.

8. Validity

8.1 If the content of these specifications is inadequate or need revising, it will be revised after both parties' agreement.

8.2 The specifications can be used temporarily during the period of approval. If you have no any objection or not return one hard copy to us within one month, these specifications will be operated as a valid document. If any change, we will inform you.

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