



The D/3R-350B Gas Discharge Tube (GDT) is a protective device which is filled with certain proportion of noble gas, or mixed gas or other discharge media in the space between metal electrodes and metalized ceramics, and then sealed at high temperature to form a single gap or multi-gap switch type protective device.

When the protected circuit or equipment suffers to surge, the 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.

- Fast Response
- Stable Performance Over Surface Life
- High Current Rating
- Low Capacitance
- High Insulation Resistance
- RoHS & REACH Compliant

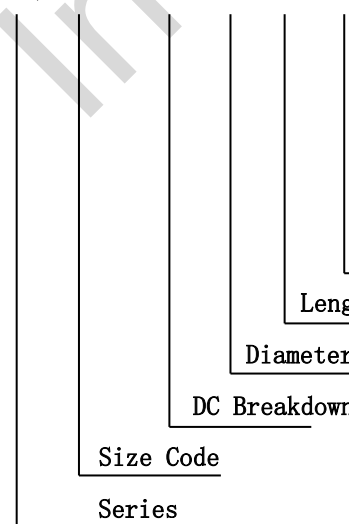
Description (IEC 61643-312;GB/T18802.312)

1 Safety Standards Approval

Standard No.	UL497B
File No.	E223314
Certified Model/Type	3R-350

2 Part Number Order Code

D / 3R - 350 B 10 C



Radial lead with 4.4mm lead pitch 1.0mm lead diameter

Length (10=10mm)

Diameter (B=8mm)

DC Breakdown Voltage@100V/s~2000V/s

Size Code

Series



3 Product Information

3.0 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

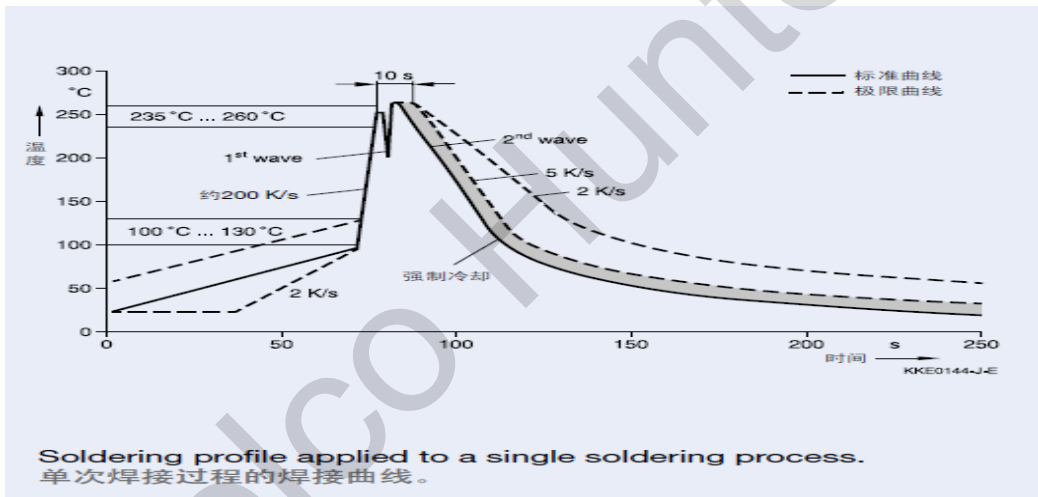
3.3 Plating

Electrode: Plating Tin; Plating nickel; Lead foot: Plating Tin;

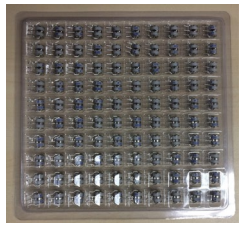
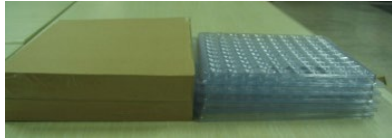

3.4 Marking

Blue, LOGO Part Number: 3R350

3.5 Wave soldering



3.6 Packing

	PVC Tray	Inner Box	Carton
Dimensions	200×210×10	210×225×60	450×245×345
Quantity	1tray =100pcs	1 Inner Box=5 tray =500pcs	1Carton=10 Inner Box =5000pcs
Photos			

3.7 Dimensions: (Not specified tolerances according to GB1804 - C level) ($0.5 \sim 3 \pm 0.2$; $>3 \sim 6 \pm 0.3$; $>6 \sim 30 \pm 0.5$; $>30 \sim 120 \pm 0.8$; $>120 \sim 400 \pm 1.2$; $>400 \sim 1000 \pm 2$;))

	Item	Dimensions/mm
	D	$8.0 + 0.2, -0.8$
	T	10.0 ± 0.5
	T1	$13.4 + 0.8, -0.5$
	d	1.0 ± 0.05
	S	4.4 ± 0.3
	H	4.5min.
	L	7.5 ± 0.5

4 Specifications (in accordance with ITU-T Rec. K.12 and IEC 61643-311.)

Model Name	DC Breakdown Voltage	Maximum Impulse Breakdown Voltage		Maximum Impulse Discharge Current 8/20 μ s
	(V)	(V)		(KA)
	100~2000V/S	100V/ μ s	1000V/ μ s	10times
3R-350	$350 \pm 20\%$	700	900	20

规格 Model Name	Alternating Discharge Current	Impulse Life	DC Holdover Voltage	Minimum Insulation Resistance	Maximum Capacitance
	(A)	(times)	(V)	(G Ω)	(pf)
	50Hz, 1Sec	10/1000 μ s, 200A	< 150ms	Note 1	1MHz
3R-350	20	130	135	10	2

Note 1: Insulation resistance test condition:

DC Breakdown Voltage	$\leq 150V$	151~400V	401~1000V	1001~2000V	$\geq 2001V$
DC Measuring Voltage	50V	100V	250V	500V	1000V

Note 2: At delivery AQL 0.65 Level II, IN ISO 2859.



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

5.0 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 (V_s)

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 $100\text{v/s} \sim 2000\text{v/s}$ under this circumstances.

5.2 Maximum Impulse Breakdown Voltage (V_{si})

The maximum voltage rise rate of the measured terminal measured by GDT is $100\text{V}/\mu\text{s}$, $1000\text{V}/\mu\text{s}$, or $5000\text{V}/\mu\text{s}$.

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 $8/20\mu\text{s}$ or $10/350\mu\text{s}$), 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 $10 \times 700\mu\text{s}$), 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 $50\text{Hz} \times 1\text{second}$ multiply 10 times (each interval is 3 minutes) or Single 9 cycles 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 ($1000\text{V}/\mu\text{s}$ or $5000\text{V}/\mu\text{s}$) is applied to both ends of the GDT to measure the response time (there is a delay time between the moment when the transient overvoltage 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 applied 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 Holdover Voltage

Under the specified circuit conditions, the DC voltage applied when the GDT is turned on and returned to the high impedance state after a shock discharge (DC test voltage is divided into three levels: 52V/80V and 135V).

5.11 Minimum Insulation Resistance

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

5.12 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 a dry environment, with adequate ventilation. If stored correctly the non-corrosion period is One year.

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

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

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-overvoltage 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 objection to the specification or do not return one hard copy to us within one month, these specifications will be operated as a valid document.

For further technical information on this product please contact

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