

Gas Discharge Tubes (GDT)

2RB-8 (BVL) Series

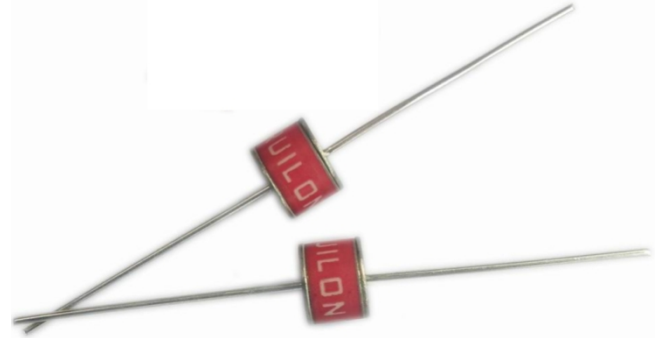
Description

Gas Discharge Tube (GDT) Surge Arrestors operate as a voltage dependent switch. When a voltage appears across the device that is greater than its rated DC breakdown voltage the gas in the GDT will begin to ionize and conduct until it reaches its Impulse Spark-over Voltage. At this point, the device is fully in its on state and a low arc voltage is maintained irrespective of discharge current. When the transient passes, the GDT will reset to its non-conducting state. GDT technology is capable of handling very high surge currents, possesses very high off-state insulating resistance and is very low in capacitance making them ideal as a stand-alone protector or as the primary stage of a multi-stage circuit protection design.

2R-8/BVL is a ultra-fast response series GDT produced by Ruilon, specifically designed to be used in conjunction with high-speed protection products. This series of products has higher glow voltage and arc voltage, and their ultra-fast response speed can lower the residual voltage of the circuit during impact, for better protection.

Features

- I High follow current capability
- I Ultra-fast response time
- I Stable breakdown voltage
- I 8/20µs Impulse current capability: 10KA
- I Non-Radioactive
- I Ultra Low capacitance (<1.5pF)
- I Size: Φ8mm*6mm
- I Storage and operational temperature: -40~+125°C



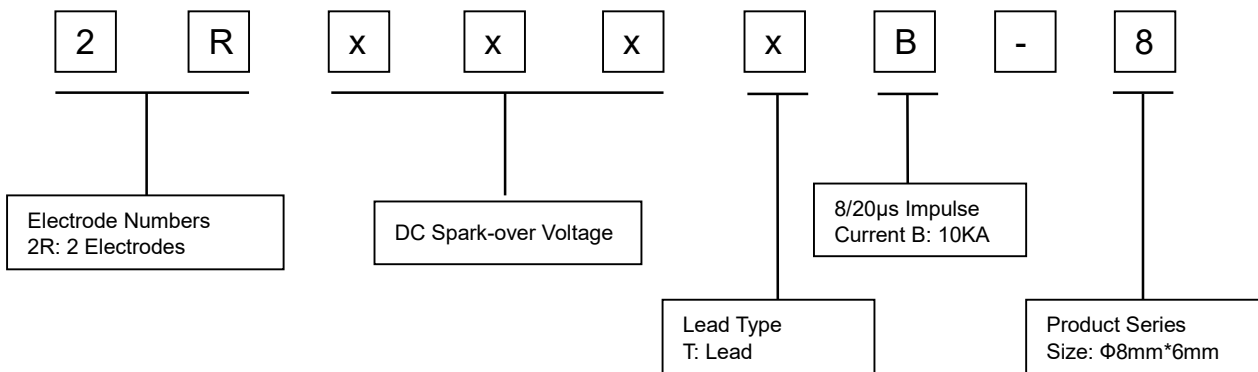
Agency Approvals

Agency	Standards	Certificate No.
	UL497B	E465335
	UL1449	E479668
	EN 61643-311 IEC 61643-311	J50571931

Applications

- I Application with high follow current
- I Power supply
- I Consumer electronics
- I AC power line devices

Part Number Code



Gas Discharge Tubes (GDT)

2RB-8 (BVL) Series

Electrical Characteristics

Model		2R350TB-8	2R400TB-8	2R470TB-8	Units
Product code		10.12.82.3500-BVL	10.12.82.4000-BVL	10.12.82.4700-BVL	
DC Spark-over Voltage ^{1) 2)}	at 100V/S	350±20%	400±20%	470±20%	V
Impulse Spark-over Voltage	at 100V/μS	<500	<550	<600	V
	at 1KV/μS	<600	<650	<700	V
Front of wave spark-over voltage	at 1.2/50 μs, 6 kV	<750	<800	<850	V
Service life (According to IEC 61643-311)					
Nominal impulse discharge current	8/20μs ±5 times	10	10	10	KA
Maximum discharge current	8/20μs 1 time	20	20	20	KA
Impulse discharge current	10/350μs 2 times	2	2	2	KA
Alternating Discharge Current	50Hz, 1S 10 times	10	10	10	A
Impulse Life	10/1000μS 300 times	100	100	100	A
	1.2/50μS, 2Ω 40 times	20	20	20	KV
	1.2/50μS, 12Ω 80 times	20	20	20	KV
Glow Voltage	at 10mA	~160	~160	~170	V
Arc Voltage	at 1A	~16	~18	~20	V
Insulation Resistance		>1	>1	>1	GΩ
	Insulation Resistance Measuring Voltage	100	100	100	V _{DC}
Capacitance	at 1MHz	<1.5	<1.5	<1.5	pF
Weight		~1.5	~1.5	~1.5	g
Operation and storage temperature		-40~+125	-40~+125	-40~+125	°C
Climatic category (IEC60068-1)		40/125/21	40/125/21	40/125/21	
Agency Approvals ³⁾					
UL497B	E465335	⊙	⊙	⊙	
UL1449	E479668	--	--	--	
EN 61643-311 IEC 61643-311	J50571931	--	--	--	
Marking, red negative		RUILON350B Y	RUILON400B Y	RUILON470B Y	
		B - Ultra-fast response time Y - Year of production			
Surface treatment	Body	Nickel Plated			
	Wire	Tin plated			

¹⁾ At delivery AQL 0.65 level II, DIN ISO 2859.

²⁾ In ionized mode.

³⁾ ⊙ indicates that the product has passed the certification, -- indicates that the product is not certified.

Gas Discharge Tubes (GDT)

2RB-8 (BVL) Series

Electrical Characteristics

Model		2R600TB-8	2R800TB-8	2R1000T-8	Units
Product code		10.12.82.6000-BVL	10.12.82.8000-BVL	10.12.82.1020-BVL	
DC Spark-over Voltage ^{1) 2)}	at 100V/S	600±20%	800±20%	1000±20%	V
Impulse Spark-over Voltage	at 100V/μS	<750	<1000	<1200	V
	at 1KV/μS	<850	<1100	<1300	V
Front of wave spark-over voltage	at 1.2/50 μs, 6 kV	<1000	<1250	<1500	V
Service life (According to IEC 61643-311)					
Nominal impulse discharge current	8/20μs ±5 times	10	10	10	KA
Maximum discharge current	8/20μs 1 time	20	20	20	KA
Impulse discharge current	10/350μs 2 times	2	2	2	KA
Alternating Discharge Current	50Hz, 1S 10 times	10	10	10	A
Impulse Life	10/1000μS 300 times	100	100	100	A
	1.2/50μS, 2Ω 40 times	20	20	20	KV
	1.2/50μS, 12Ω 80 times	20	20	20	KV
Glow Voltage	at 10mA	~180	~230	~230	V
Arc Voltage	at 1A	~20	~28	~28	V
Insulation Resistance		>1	>1	>1	GΩ
Insulation Resistance Measuring Voltage		100	100	100	V _{DC}
Capacitance	at 1MHz	<1.5	<1.5	<1.5	pF
Weight		~1.5	~1.5	~1.5	g
Operation and storage temperature		-40~+125	-40~+125	-40~+125	°C
Climatic category (IEC60068-1)		40/125/21	40/125/21	40/125/21	
Agency Approvals ³⁾					
UL497B	E465335	⊙	⊙	--	
UL1449	E479668	⊙	⊙	⊙	
EN 61643-311 IEC 61643-311	J50571931	⊙	⊙	--	
Marking, red negative		RUILON600B Y	RUILON800B Y	RUILON1000B Y	
B - Ultra-fast response time Y - Year of production					
Surface treatment	Body	Nickel Plated			
	Wire	Tin plated			

⁴⁾ At delivery AQL 0.65 level II, DIN ISO 2859.

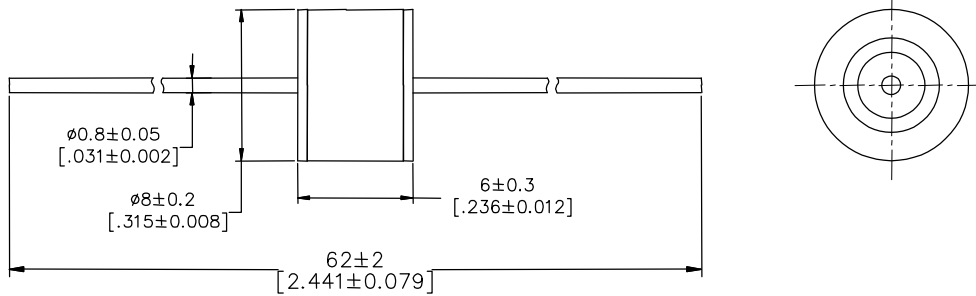
⁵⁾ In ionized mode.

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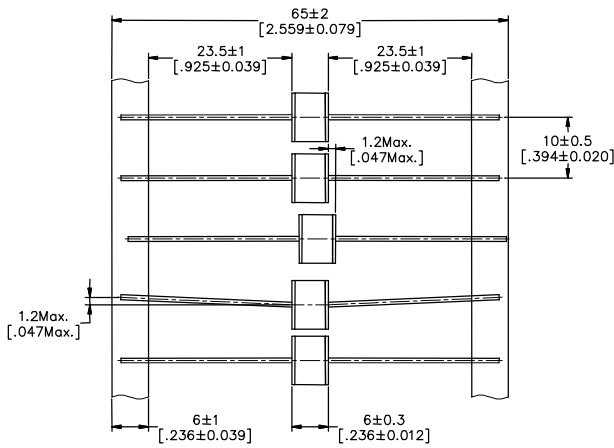
2RB-8 (BVL) Series

Dimensions (Unit: mm/inch)

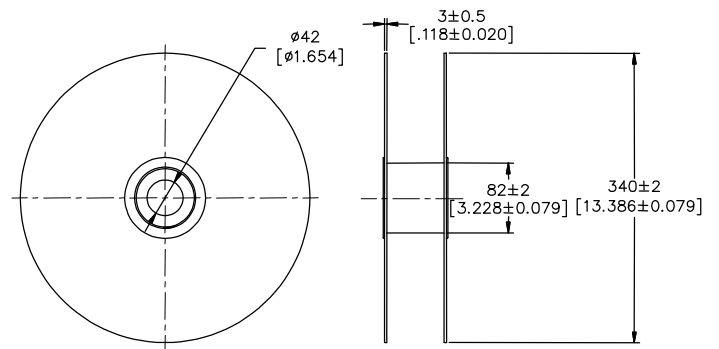


Packaging Information (Unit: mm/inch)

Tape



Reel



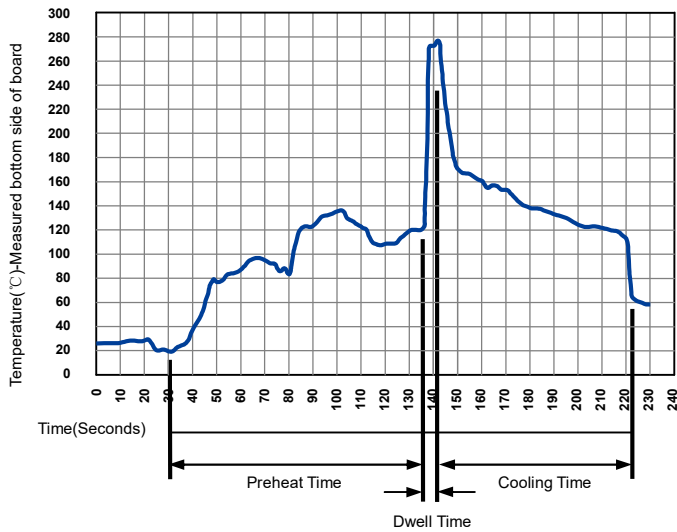
According to IEC 60286-1

	Reel	Carton
Size	340 × 78mm	350 × 350 × 407mm
Quantity	MPQ/MOQ: 1 reel=800pcs	1 Carton=5 reels =4,000pcs
Photos		

Gas Discharge Tubes (GDT)

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Soldering Parameters - Wave soldering (Thru-Hole Devices)



Wave Soldering Condition		Pb-Free assembly
Preheat	Temperature Min	100°C
	Temperature Max	150°C
	Time (Min to Max)	60-180 Seconds
Solder Pot Temperature		280°C Max
Solder Dwell Time		2-5 Seconds

Terms and definitions

NO.	Item	Definitions
1	Gas discharge tube(GDT)	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. Also referred to as "gas tube surge arrester".
2	DC Spark-over Voltage	The voltage at which the gas discharge tube sparks over with slowly increasing d.c. voltage.
3	Impulse Spark-over Voltage	The highest voltage which appears across the terminals of a gas discharge tube in the period between the application of an impulse of given wave-shape and the time when current begins to flow.
5	Arc voltage	Voltage drop across the GDT during arc current flow.
6	Glow voltage	Peak value of voltage drop across the GDT when a glow current is flowing.
7	Impulse discharge current 8/20µs	Current impulse with a nominal virtual front time of 8 µs and a nominal time to half-value of 20 µs.
8	Alternating Discharge Current	The rms value of an approximately sinusoidal alternating current passing through the gas discharge tube.
9	Insulation Resistance	Insulation resistance shall be measured from each terminal to every other terminal of the GDT. The test is performed with DC50V when normal spark-over Voltage 70~150V, others with DC100V.
10	Capacitance	The capacitance shall be measured once at 1 MHz between all terminals unless otherwise specified.