RUILON
瑞隆源电子



Glass Gas Discharge

RL102 Series

361° Circuit Protection System

Revision:DEC-16

Please refer to http://www.ruilon.com.cn for current information.

RUILON
ELECTRONICS

Glass Gas Discharge - RL102 Series

Features

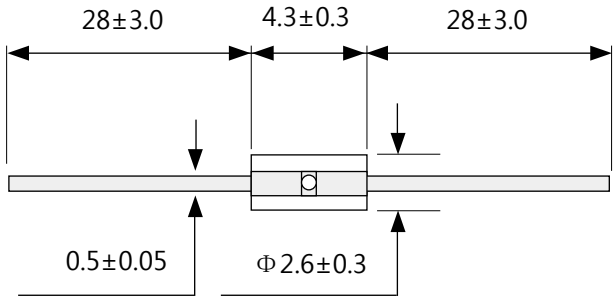
- RoHS compliant.
- Bilateral symmetrical.
- Less decay at on/off state.
- Approximately zero leaking current before clamping voltage
- High capability to withstand repeated lightning strikes.
- Low electrode capacitance(≤1.0pF) and high isolation (≥100MΩ).
- Temperature, humidity and lightness insensitive.
- Working temperature range: : -40℃ ~ +85℃
- Storaging temperature range: -40℃ ~ +125℃



Applications

- Power Supplies
- Motor sparks eliminating
- Relay switching spark absorbing
- Data line pulse guarding
- Electronic devices requiring UL497A and UL497B
- Telephone/Fax/Modem
- High frequency signal transmitters/receivers
- Satellite antenna
- Radio amplifiers
- Alarm systems
- Cathode ray tubes in Monitors/TVs

Dimensions



Part Number Code

R	L	M	1	0	2	-	1	4	1	N

- Brand Name
- Taping form: Blank:Line; S:Magnet-type; M:SMD
- Surge Current Capacity: 501:0.5KA; 102:1KA; 302:3KA
- DC Spark-over voltage(Vs): $14*10^{1}$=140V
- DC Spark-over voltage tolerance: N:30%; M:20%

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Electrlcal Characterlstlcs

Type Number	DC Spark-Over Voltage	Minimum Insulation Resistance		Maximum Capacitance (1kHz-6Vmax)	Surge Current Capacity	Surge Life Test 10x700μs	Color Code
	Vs	R	Test Voltage	CJ	8/20μs		
	V	MΩ	V	pF	A		
RL102-141N	140±30%	100	50	1	1000	4000V 10 times	Black+Yellow
RL102-201M	200±20%	100	50	1	1000	4000V 10 times	Red
RL102-301M	300±20%	100	100	1	1000	4000V 10 times	Orange
RL102-401M	400±20%	100	250	1	1000	4000V 10 times	Yellow
RL102-501M	500±20%	100	250	1	1000	4000V 10 times	Green
RL102-601M	600±20%	100	250	1	1000	4000V 10 times	Bule
RL102-701M	700±20%	100	250	1	1000	4000V 10 times	Purple
RL102-102M	1000±20%	100	500	1	1000	4000V 10 times	Black
RL102-122M	1200±20%	100	500	1	1000	4000V 10 times	Brown+Red+Red
RL102-152M	1500±20%	100	500	1	1000	4000V 10 times	Brown+Green+Red

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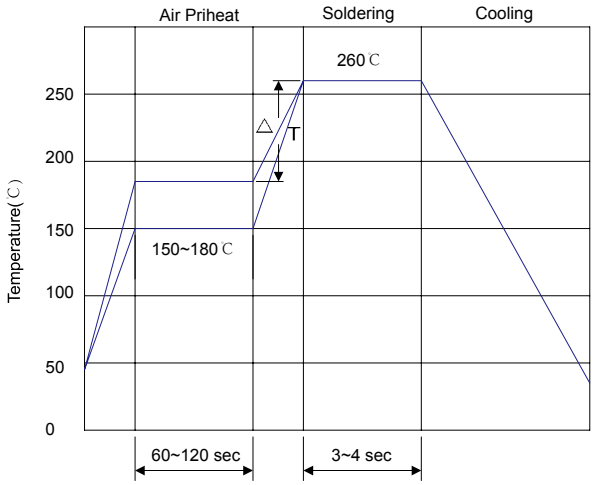
Test Methods And Results

<table>
<tr><th>Items</th><th>Test Method</th><th>Standard</th></tr>
<tr><td>DC Spark-over Voltage</td><td>Measure starting discharge voltage (Vs) by gradually increasing applied DC voltage. Test current is 0.5mA max. And the DC voltage ascends up within 100V/s(Vs＜1000V) or 500V/s(Vs≥1000V).</td><td rowspan="3">Meet specified value.</td></tr>
<tr><td>Insulation Resistance</td><td>Measure the insulation resistance across the terminal at regular voltage. But the test voltage doesn't over the DC spark-over voltage.</td></tr>
<tr><td>Capacitance</td><td>Measure the electrostatic capacitance by applying a voltage of less than 6V (at 1KHz) between terminals.</td></tr>
<tr><td>Static Life</td><td>10KV with 1500pf condenser is discharged through 0Ω resistor. 200 times at an interval of 10sec.</td><td>｜△ Vs/Vs ｜ ≤30% Characteristics of other items must meet the specified value.</td></tr>
<tr><td>Surge Current Capacity</td><td>The following impulse current for specified current applied ±5 times, each time interval 60 seconds. Thereafter, outer appearance shall be visually examined.
<table>
<tr><th>Type</th><th>Impulse current</th></tr>
<tr><td>Vs < 400V</td><td>1.2/50μs & 8/20μs, 1000A</td></tr>
<tr><td>Vs ≥ 400V</td><td>1.2/50μs & 8/20μs, 1000A, electrically connected with a resistor (1~2 Ω).</td></tr>
</table></td><td>No crack and no failures</td></tr>
<tr><td>Cold Resistance</td><td>Measurement after -40℃ /1000 HRS & normal temperature/2 HRS.</td><td rowspan="4">Features are conformed to rated spec.</td></tr>
<tr><td>Heat Resistance</td><td>Measurement after 125℃ /1000 HRS & normal temperature/2 HRS.</td></tr>
<tr><td>Humidity Resistance</td><td>Measurement after humidity 90~95 ℃ (45 ℃) /1000 HRS & normal temperature/2 HRS.</td></tr>
<tr><td>Temperature Cycle</td><td>10 times repetition of cycle -40 ℃ /30min →normal, temp/2 min →125℃ /30min, measurement after normal temp/2 HRS.</td></tr>
<tr><td>Solder Ability</td><td>Apply flux and immerse in molten solder 230±5℃ for 3sec up to the point of 1.5mm from ℃ body. Check for solder adhesion.</td><td>Lead wire is evenly covered by solder.</td></tr>
<tr><td>Solder Heat</td><td>Measurement after lead wire is dipped up to the point of 1.5mm from body into 260±5 ℃ solder for 10sec.</td><td>Conformed to rated spec.</td></tr>
<tr><td>Pull Strength</td><td>Apply 0.5kg load for 10sec.</td><td rowspan="2">Lead shall not pull out to snap.</td></tr>
<tr><td>Flexural Strength</td><td>Bend lead wire at the point of 2mm from body under 0.25 load and back to its original point.Repeat 1 time.</td></tr>
</table>

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Recommended Soldering Conditions

Flow Soldering Conditions



1) Time shown in the above figures is measured from the point when chip surface reaches temperature.

2) Temperature difference in high temperature part should be within 110℃

3) After soldering, do not force cool, allow the parts to cool gradually.

Hand Soldering

Solder iron temperature: 350±5℃

Heating time: 3 seconds max.

General attention to soldering

● High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.

● For soldering, please refer to the soldering curves above. However, please keep exposures to temperatures exceeding 200℃ to fewer than 50 seconds.

● Please use a mild flux (containing less than 0.2wt% Cl). Also, if the flux is water soluble, be sure to wash thoroughly to remove any residue from the underside of components that could affect resistance.

Cleaning

When using ultrasonic cleaning, the board may resonate if the output power is too high. Since this vibration can cause cracking or a decrease in the adherence of the termination, we recommend that you use the conditions below.

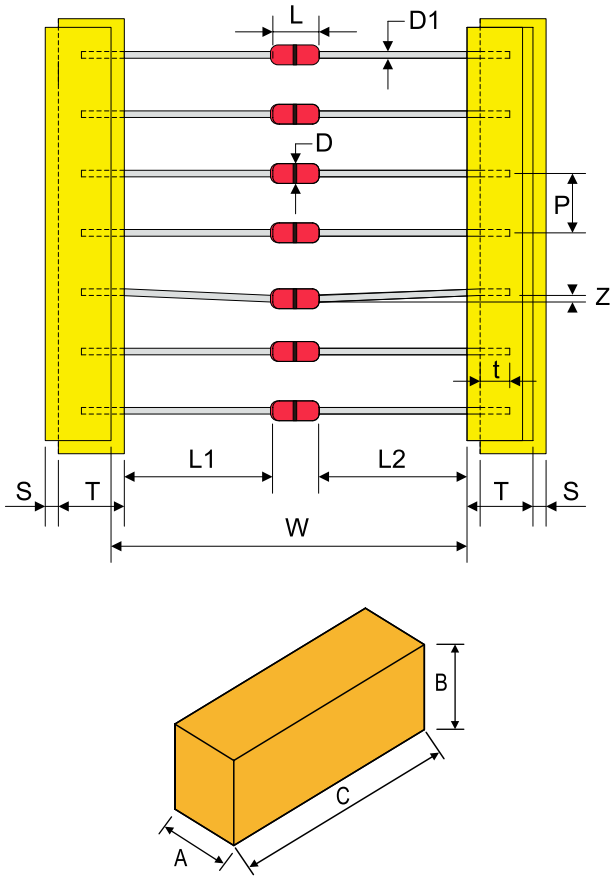
Frequency: 40kHz max.

Output power: 20W/liter

Cleaning time: 5 minutes max.

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Ordering Information



Symbol	Dimension (mm)
W	52.0±2.0
P	5.0±0.5
L1-L2	1.0 max
T	6.0±1.0
Z	1.2max
t	3.2max
S	0.8max
D	Φ3.1max
D1	Φ0.5±0.05
L	4.8max
A	75.0
B	68.0
C	255.0
Antity: 2000PCS	

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RUILON:

5KP24CA RL0603E005M100K RL16-600 SMD0805P075TF SMD1812P030TF 10D820K RLVR240-012 SMD1210P075TF NTC12D-7 P6KE100A RLVR240-200 SMD1812P300TF/16 SMD3216-400N ES2D RL0603E005M500K 10D102K RL30-200 RLST23A032V RLVR240-100 SMD1812P125TF 5KP36A RLSO8A2.84LV SMD1206P035TF SMFJ30A 1.5KE36CA GR5M RL60-185 RLM102-201M 14D390K 20D561K