

Gas Discharge Tube (GDT) Data Sheet

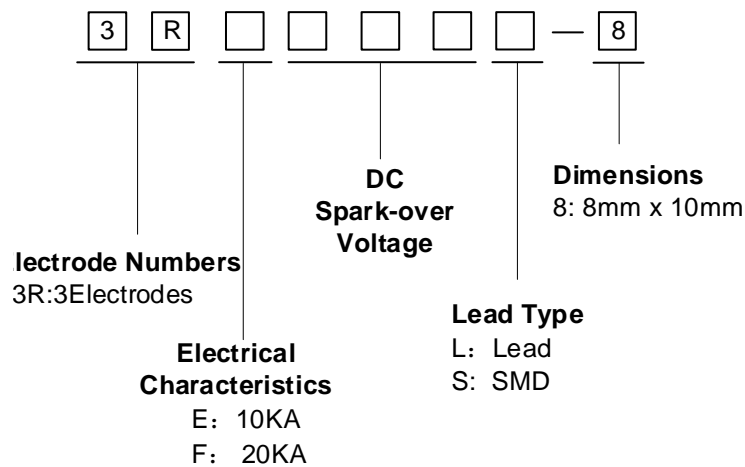
Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Low capacitance ($\leq 2\text{pF}$)
- High insulation resistance
- High holdover voltage
- Stable breakdown voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Operating and Storage Temperature : $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Meets MSL Level 1, per J-STD-020

Applications

- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment
- Repeaters, Modems

Part Number Code



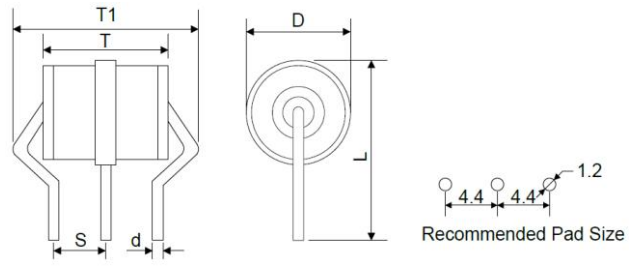
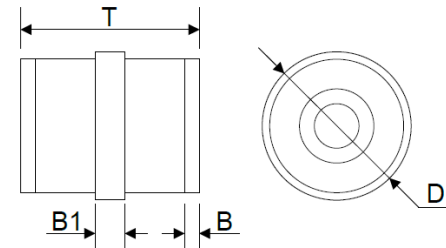
Electrical Characteristics

Part Number		DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Impulse Life Test	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current	Alternating Discharge Current	Device Marking Code
					Test Voltage	(GΩ)				
(v)	(v)	(times)		(pF)	(KA)	(A)				
3RE075L-8	3RE075S-8	75±20%	700	300	25	1	2.0	10	10	3RE075-8
3RE090L-8	3RE090S-8	90±20%	700	300	50	1	2.0	10	10	3RE090-8
3RE150L-8	3RE150S-8	150±20%	700	300	100	1	2.0	10	10	3RE150-8
3RE200L-8	3RE200S-8	200±20%	700	300	100	1	2.0	10	10	3RE200-8
3RE230L-8	3RE230S-8	230±20%	700	300	100	1	2.0	10	10	3RE230-8
3RE350L-8	3RE350S-8	350±20%	850	300	100	1	2.0	10	10	3RE350-8
3RE400L-8	3RE400S-8	400±20%	850	300	100	1	2.0	10	10	3RE400-8
3RE470L-8	3RE470S-8	470±20%	950	300	250	1	2.0	10	10	3RE470-8
3RE600L-8	3RE600S-8	600±20%	1300	300	250	1	2.0	10	10	3RE600-8
3RE800L-8	3RE800S-8	800±20%	1500	300	250	1	2.0	10	10	3RE800-8

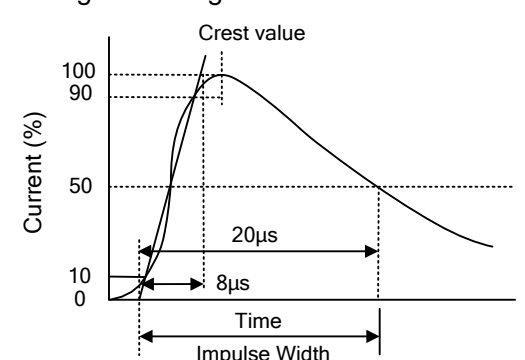
Electrical Characteristics

Part Number		DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Impulse Life Test	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current	Alternating Discharge Current	Device Marking Code
					Test Voltage	(GΩ)				
(v)	(v)	(times)		(pF)	(KA)	(A)				
3RF075L-8	3RF075S-8	75±20%	700	300	25	1	2.0	20	20	3RF075-8
3RF090L-8	3RF090S-8	90±20%	700	300	50	1	2.0	20	20	3RF090-8
3RF150L-8	3RF150S-8	150±20%	700	300	100	1	2.0	20	20	3RF150-8
3RF200L-8	3RF200S-8	200±20%	700	300	100	1	2.0	20	20	3RF200-8
3RF230L-8	3RF230S-8	230±20%	700	300	100	1	2.0	20	20	3RF230-8
3RF350L-8	3RF350S-8	350±20%	850	300	100	1	2.0	20	20	3RF350-8
3RF400L-8	3RF400S-8	400±20%	850	300	100	1	2.0	20	20	3RF400-8
3RF470L-8	3RF470S-8	470±20%	950	300	250	1	2.0	20	20	3RF470-8
3RF600L-8	3RF600S-8	600±20%	1300	300	250	1	2.0	20	20	3RF600-8
3RF800L-8	3RF800S-8	800±20%	1500	300	250	1	2.0	20	20	3RF800-8

Dimensions

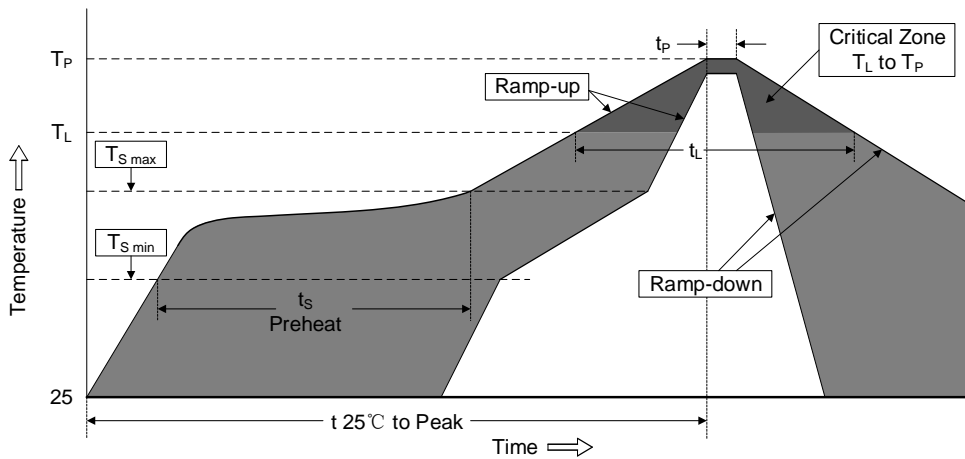
L Type		Symbol	Dimension (mm)
		D	8.00±0.80
		T	10.00±0.50
		T1	12.00±0.50
		L	15.00±0.50
		S Type	
		T	10.00±0.50
		B	0.50±0.10
		B1	1.50±0.20
Notes: This type is not suitable for PCB soldering.			

Electrical Ratings

Items	Test Condition/Description	Requirement
DC spark-over voltage	The voltage is measured with voltage ramp $dv/dt=100V/s$.	To meet the Specified value
Maximum Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with voltage ramp $dv/dt=1000V/\mu s$.	
Insulation Resistance	The resistance of gas tube shall be measured between two electrodes.	
Capacitance	The capacitance of gas tube shall be measured between two electrodes. Test frequency: 1MHz	
Impulse Discharge Current	<p>Maximum 8/20μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time, without causing the DC spark-over voltage to change more than 25% from its initial value.</p> 	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min. DC spark-over voltage shall not change more than $\pm 25\%$ from its initial value. $IR > 10^8$ ohms (-20%, +30% for 70~90V).	

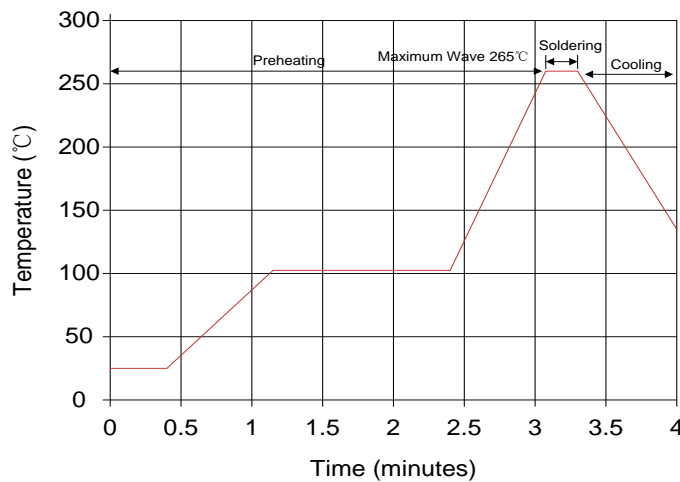
Soldering Recommendation

Reflow Soldering



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max)(t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Wave Soldering

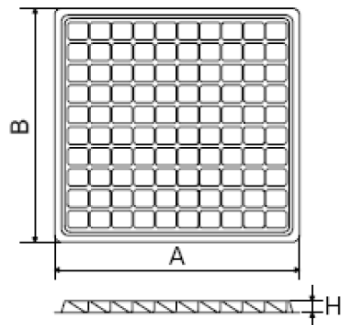


Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds(max.)
Soldering	1 time

Packaging

Axial Packing

Skiving packing



Symbol	Dimension (mm)
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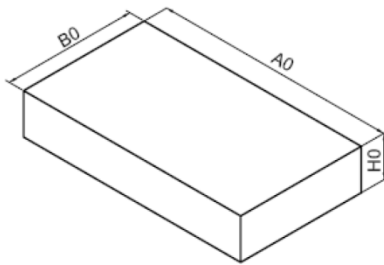
A	217 ± 2.0
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B	207 ± 2.0
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H	10.3 ± 0.5
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Quantity: 100pcs

Inner box



A0	225 ± 2.0
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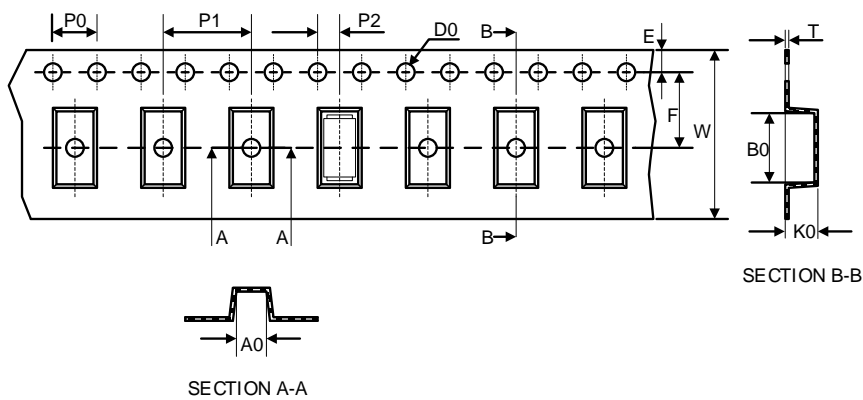
B0	210 ± 2.0
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H0	60 ± 2.0
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Quantity: 500pcs

SMD packing

Tape



Symbol	Dimension (mm)
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W	16.00 ± 0.20
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P0	4.00 ± 0.10
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P1	16.00 ± 0.10
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P2	2.00 ± 0.10
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D0	$\Phi 1.55 \pm 0.05$
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E	1.75 ± 0.10
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F	7.50 ± 0.10
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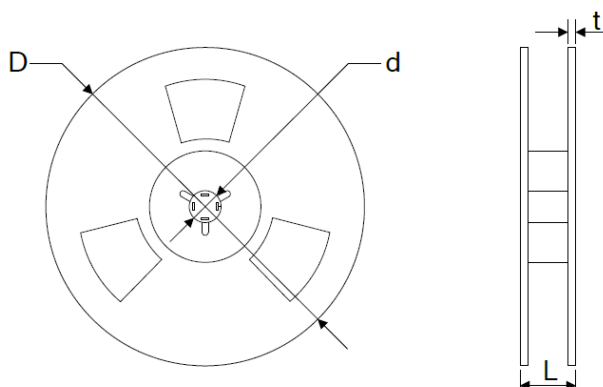
A0	11.60 ± 0.1
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B0	10.00 ± 0.1
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K0	8.90 ± 0.1
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T	0.50 ± 0.05
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Reel



D	330.0 ± 2.0
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d	13.0 ± 0.5
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L	20.0 ± 2.0
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t	2.0 ± 0.2
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Quantity: 300PCS