

## Gas Discharge Tube (GDT) Data Sheet

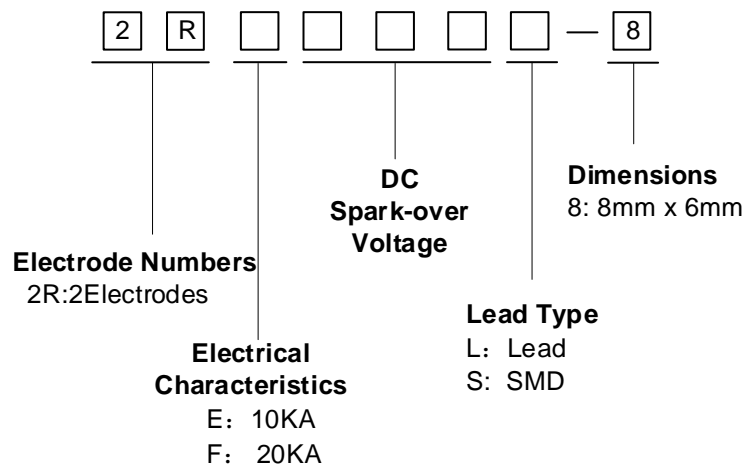
### Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Low capacitance ( $\leq 1.5\text{pF}$ )
- High holdover voltage
- Stable breakdown voltage
- Large absorbing transient current capability
- Surface mounted gas arrester
- 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)				
		100V/S	1KV/us	10/1000us 100A			(1MHz 1V)	8/20us	50Hz, 1S	
		(v)	(v)	(times)			(pF)	(KA)	(A)	
2RE075L-8	2RE075S-8	75±20%	600	500	25	1	1.5	10	10	2RE075-8
2RE090L-8	2RE090S-8	90±20%	600	500	50	1	1.5	10	10	2RE090-8
2RE120L-8	2RE120S-8	120±20%	600	500	50	1	1.5	10	10	2RE120-8
2RE150L-8	2RE150S-8	150±20%	700	500	100	1	1.5	10	10	2RE150-8
2RE230L-8	2RE230S-8	230±20%	700	500	100	1	1.5	10	10	2RE230-8
2RE250L-8	2RE250S-8	250±20%	800	500	100	1	1.5	10	10	2RE250-8
2RE300L-8	2RE300S-8	300±20%	900	500	100	1	1.5	10	10	2RE300-8
2RE350L-8	2RE350S-8	350±20%	900	500	100	1	1.5	10	10	2RE350-8
2RE400L-8	2RE400S-8	400±20%	1000	500	100	1	1.5	10	10	2RE400-8
2RE470L-8	2RE470S-8	470±20%	1100	500	250	1	1.5	10	10	2RE470-8
2RE600L-8	2RE600S-8	600±20%	1300	500	250	1	1.5	10	10	2RE600-8
2RE800L-8	2RE800S-8	800±20%	1500	500	250	1	1.5	10	10	2RE800-8

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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)				
		100V/S	1KV/us	8/20us 100A			(1MHz 1V)	8/20us	50Hz, 1S	
		(v)	(v)	(times)			(pF)	(KA)	(A)	
2RF075L-8	2RF075S-8	75±20%	600	500	25	1	1.5	20	20	2RF075-8
2RF090L-8	2RF090S-8	90±20%	600	500	50	1	1.5	20	20	2RF090-8
2RF120L-8	2RF120S-8	120±20%	600	500	50	1	1.5	20	20	2RF120-8
2RF150L-8	2RF150S-8	150±20%	700	500	100	1	1.5	20	20	2RF150-8
2RF230L-8	2RF230S-8	230±20%	700	500	100	1	1.5	20	20	2RF230-8
2RF250L-8	2RF250S-8	250±20%	800	500	100	1	1.5	20	20	2RF250-8
2RF300L-8	2RF300S-8	300±20%	900	500	100	1	1.5	20	20	2RF300-8
2RF350L-8	2RF350S-8	350±20%	900	500	100	1	1.5	20	20	2RF350-8
2RF400L-8	2RF400S-8	400±20%	1000	500	100	1	1.5	20	20	2RF400-8
2RF470L-8	2RF470S-8	470±20%	1100	500	250	1	1.5	20	20	2RF470-8
2RF600L-8	2RF600S-8	600±20%	1300	500	250	1	1.5	20	20	2RF600-8
2RF800L-8	2RF800S-8	800±20%	1500	500	250	1	1.5	20	20	2RF800-8

### Dimensions

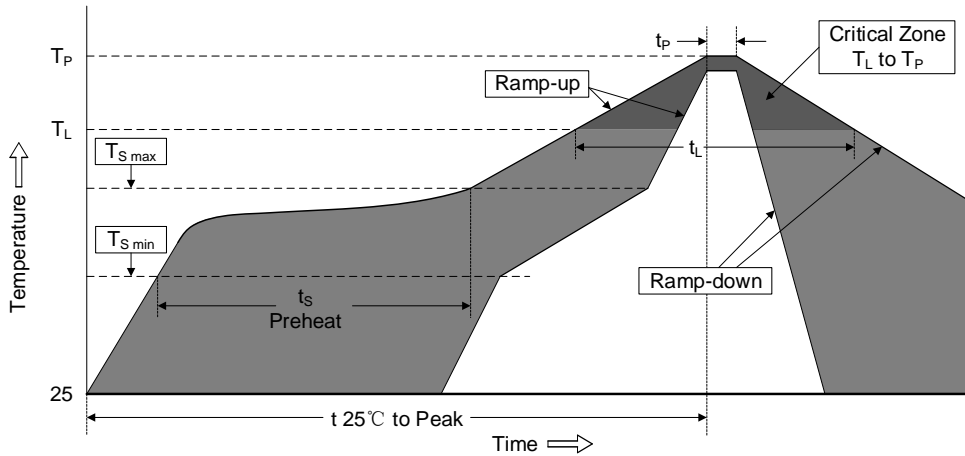
L Type		Symbol	Dimension (mm)
		D	8.00±0.50
		T	6.00±0.50
		d	0.80±0.10
		L	30 max.
		S Type 	
T	6.00±0.50		
B	0.50±0.10		

### 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	Maximum 8/20 $\mu s$ 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. 	
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 ±25% from its initial value. $IR > 10^8$ ohms (-20%, +30% for 70~90V).	

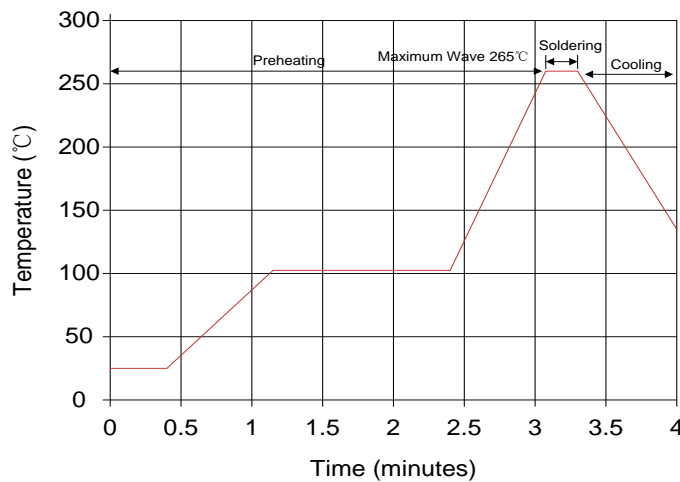
### Soldering Recommendation

#### 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.

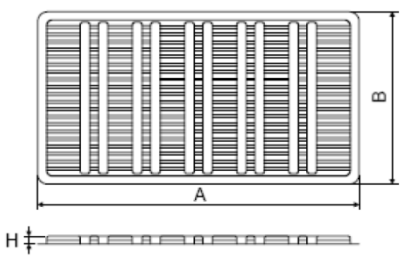
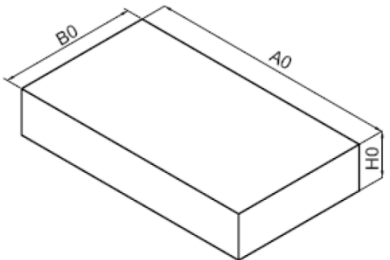
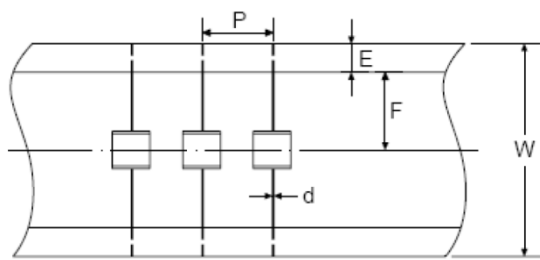
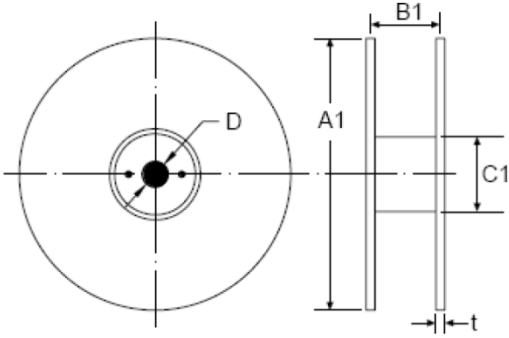
#### Wave Soldering



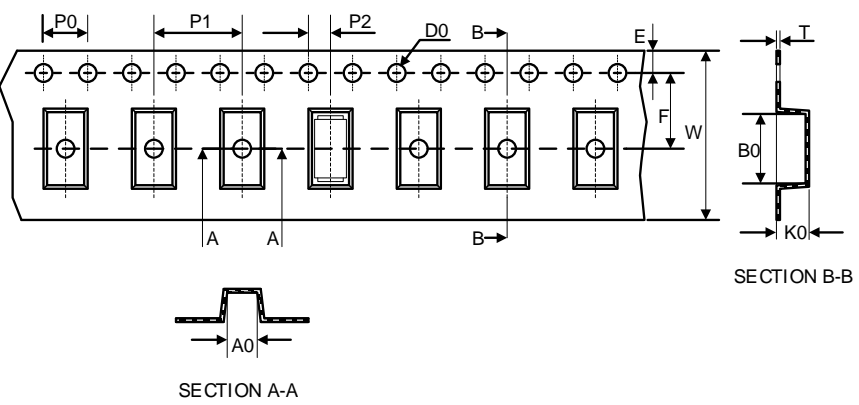
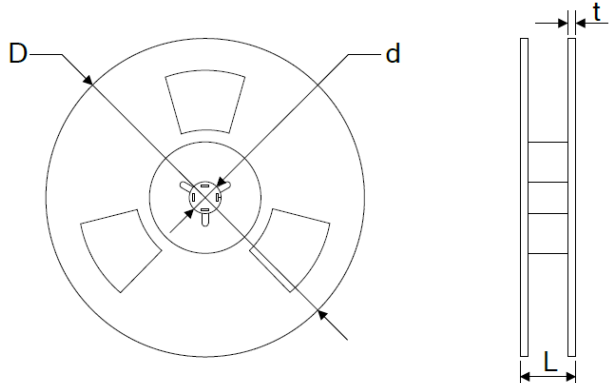
Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds(max.)
Soldering	1 time

### Packaging

#### Axial Packing

Skinning packing		Symbol	Dimension (mm)
		A	$265 \pm 5.0$
		B	$146 \pm 5.0$
		H	$8.5 \pm 0.5$
		Quantity: 100pcs	
Inner box 		A0	$270 \pm 2.0$
		B0	$150 \pm 2.0$
		H0	$50 \pm 2.0$
		Quantity: 500pcs	
Tape 		P	$10.0 \pm 0.5$
		W	$65.0 \pm 1.0$
		E	$6.0 \pm 0.5$
		F	$26.5 \pm 0.5$
		d	$0.8 \pm 0.1$
		Quantity: 500pcs	
Reel 		A1	$330.0 \pm 2.0$
		B1	$70.0 \pm 2.0$
		C1	$82.0 \pm 2.0$
		D	$25.0 \pm 0.5$
		t	$2.0 \pm 0.2$
		Quantity: 500pcs	

### SMD packing

Tape	Symbol	Dimension (mm)	
	W	16.00±0.20	
	P0	4.00±0.10	
	P1	12.00±0.20	
	P2	2.00±0.10	
	D0	Φ1.55±0.05	
	E	1.75±0.10	
	F	7.50±0.10	
	A0	8.20±0.1	
	B0	7.50±0.1	
	K0	8.50±0.1	
	T	0.50±0.1	
		D	330.0±2.0
		d	13.0±0.5
L		20.0±2.0	
t		2.0±0.2	
Quantity: 500PCS			

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