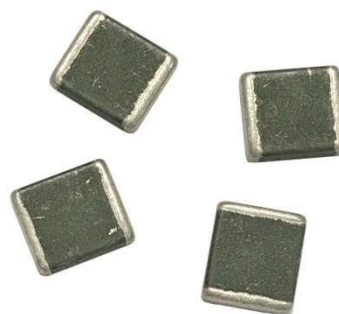


### Features

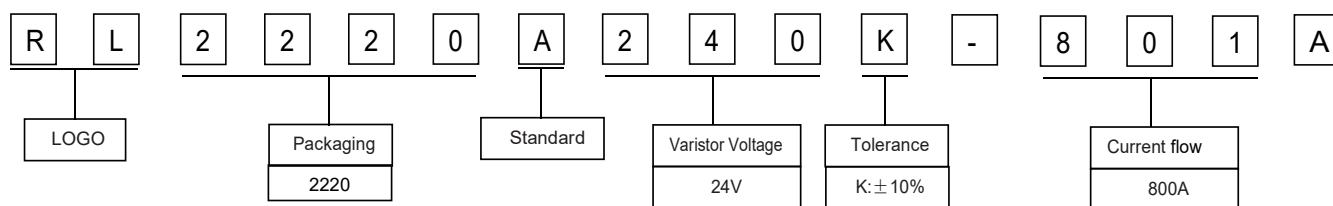
- EIA size:2220
- Variable capacitance
- Operating voltage: 18Vdc ~455Vdc
- High surge suppress capability
- Bidirectional and symmetrical V/I characteristics
- Multilayer ceramic construction technology
- RoHS & Halogen Free (HF) compliant
- Operating temperature range: -55°C ~ +125°C
- Storage temperature range:5°C ~ +40°C



### Applications

- Used to Help Achieve Electromagnetic Compliance of End Products
- Provides On-Board Transient Voltage Protection for ICs, CMOS and MOSFET
- Suppression of Inductive Switching or Other Transient Events Such as EFT and Surge Voltage at the Circuit Board.
- Protection of Components and Circuits Sensitive to ESD Transients Occurring on Power supplies, Control and Signal Lines.

### Part Number Code



## Electrical Characteristics

Type Number	Varistor Voltage	Max. Allowable Voltage		Max. Energy (10/1000μs)	Max. Clamping Voltage (8/20μs)		Withstanding Surge Current (8/20μs)
	V <sub>1mA</sub> (V)	V <sub>Ac</sub> (V)	V <sub>Dc</sub> (V)	(J)	I <sub>P</sub> (A)	V <sub>C</sub> (V)	I(A)
RL2220A240K	21.6~27	14	18	2.5	10	59	1200
RL2220A270K	26.4~33	17	22	2.5	10	72	1200
RL2220A300K	28.8~36	18	24	2.5	10	79	1200
RL2220A330K	31.2~39	20	26	2.5	10	85	1200
RL2220A390K	36~45	25	30	2.5	10	99	1200
RL2220A470K	45.6~57	30	38	2.5	10	125	1200
RL2220A530K	50.4~63	32	42	2.5	10	138	1200
RL2220A560K	54~67.5	35	45	2.5	10	148	1200
RL2220A680K	67.2~84	40	56	2.5	10	184	1200
RL2220A760K	72~90	43	60	2.5	10	198	1200
RL2220A820K	78~97.5	46	65	2.5	10	214	1200
RL2220A900K	81.6~102	49	68	2.5	10	224	1200
RL2220A101K	102~127.5	60	85	2.5	10	280	1200
RL2220A181K	162~198	115	150	5.6	10	315	500
RL2220A221K	198~242	140	180	5.6	10	360	500
RL2220A241K	216~264	150	200	5.6	10	415	500
RL2220A271K	243~297	175	225	5.6	10	475	500
RL2220A391K	351~429	250	320	8.5	10	650	500
RL2220A431K	387~473	275	350	8.5	10	710	500
RL2220A471K	423~517	300	385	8.5	10	775	500
RL2220A561K	504~616	350	455	10.0	10	925	500

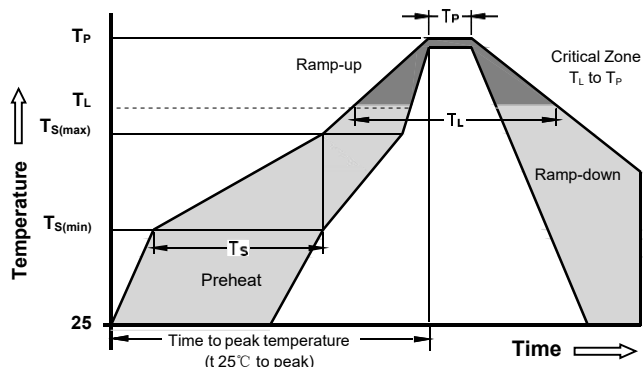
## Environmental Performance

Item	Specifications	Test Condition
Bias Humidity	V <sub>V</sub> / V <sub>V</sub> ±10%	90%RH, 40°C, Working Voltage, 1000 hrs
Thermal Shock	V <sub>V</sub> / V <sub>V</sub> ±10%	-40°C to 85°C, 30min.cycle, 5 cycles
Full Load Voltage	V <sub>V</sub> / V <sub>V</sub> ±10%	Working Voltage, 85°C, 1000 hrs

## General Technical Data

Response Time	<1ns	
Solderability	245±5 °C, 3±1sec	
Solder leach resistance	260±5 °C, 10±1sec	
Taping Package Storage Condition	Storage Temperature	5~40°C
	Relative Humidity	To 65%
	Storage Time	12 Months max

**Soldering Parameters - Reflow Soldering (Surface Mount Devices)**



<b>Reflow Condition</b>		Pb - Free assembly
<b>Pre Heat</b>	-Temperature Min ( $T_{s(min)}$ )	150°C
	-Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 -180 Seconds
<b>Average ramp up rate ( Liquids Temp <math>T_L</math> to peak</b>		3°C/second max
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		3°C/second max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquids)	217°C
	- Time (min to max) ( $t_s$ )	60 -150 Seconds
<b>Peak Temperature (<math>T_P</math>)</b>		260 +0/-5°C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		20 - 40 Seconds
<b>Ramp-down Rate</b>		6°C/second max
<b>Time 25°C to peak Temperature (<math>T_P</math>)</b>		8 minutes Max
<b>Do not exceed</b>		260°C

**Precaution for soldering**

Note that this product will be easily damaged by rapid heating, rapid cooling or local heating.

Do not give heat shock over 100°C in the process of soldering. We recommend to take preheating and gradual cooling

**Soldering gun procedure**

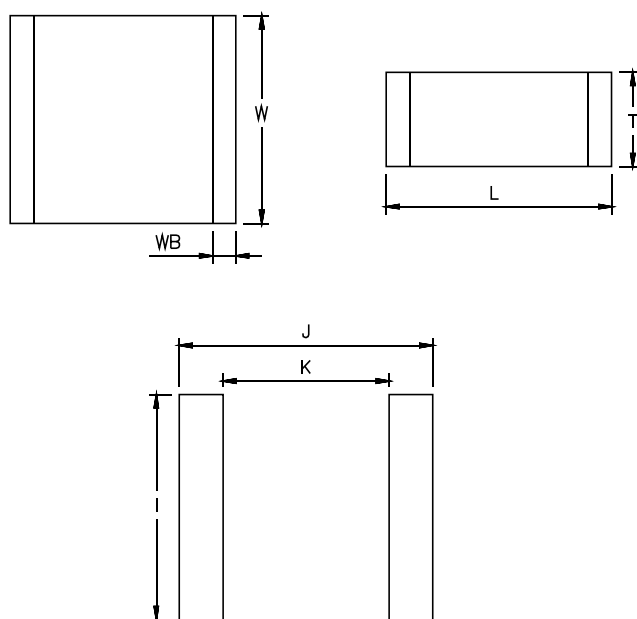
Note the follows, in case of using solder gun for replacement.

- 1) The tip temperature must be less than 280 for the period within 3 seconds by using soldering gun under 30W
- 2) The soldering gun tip shall not touch this product directly.

**Soldering volume**

Note that excess of soldering volume will easily get crack the body of this product.

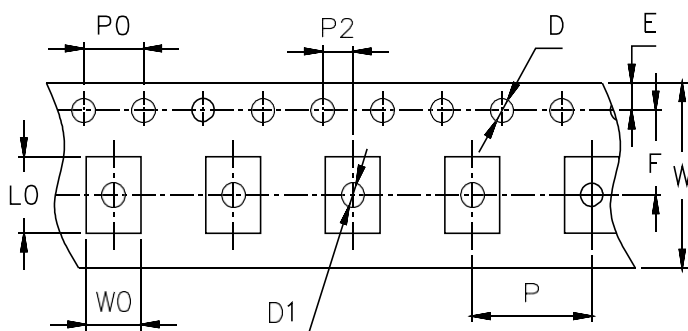
**Dimensions And Recommended Pad Layout**



**Recommended Soldering Pad Layout**

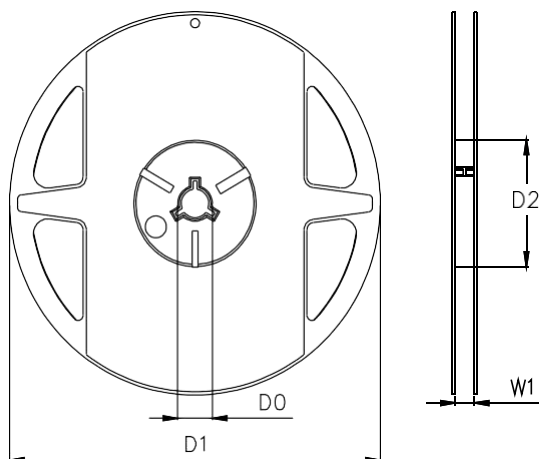
Symbol	Millimeters	Inches
L	5.70±0.50	0.224±0.02
W	5.08±0.50	0.20±0.02
$T_{max}$	3.80	0.15
WB	0.60±0.25	0.024±0.01
I	5.5	0.217
J	6.4	0.252
K	4.2	0.165

**Taping and Reel Specifications**



Symbol	Millimeters	Inches
W	12.00±0.20	0.472±0.008
E	1.75±0.10	0.069±0.004
F	5.50±0.05	0.217±0.002
D	1.55±0.05	0.061±0.002
D1	Φ1.50±0.05	Φ0.059±0.002
P	8.00±0.10	0.315±0.004
P0	4.00±0.05	0.157±0.002
P2	2.00±0.05	0.079±0.002
L0	7.62±0.10	0.300±0.004
W0	6.57±0.10	0.259±0.004

**Packing Specifications**



Symbol	Millimeters	Inches
D0	13.5±0.1	0.531±0.004
D1	178±2.0	7.008±0.079
D2	Φ60.0±0.5	Φ2.362±0.02
W1	12.82±0.2	0.505±0.008

**Taping Specifications**

There shall be the portion having no product in both the head and the end of taping, and there shall be the cover tape in the heat of taping.

**Quantity of products in the taping package**

Model	SIZE EIA (EIAJ)	2220
240K~271K	Standard Packing Quantity (PCS/reel)	1000
391K~561K	Standard Packing Quantity (PCS/reel)	500

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Varistors](#) category:*

*Click to view products by [Ruilongyuan](#) manufacturer:*

Other Similar products are found below :

[R71ZOV151HC](#) [B72205S271K111](#) [B72214S251K151](#) [NTE1V020](#) [NTE1V130](#) [25FN511K](#) [S10K11G5S5](#) [ERZ-C14DK361U](#) [ERZ-C20DK221U](#) [207869-1](#) [AS-13](#) [B72540E 350K 62](#) [B72590D360A60](#) [B72650M301K93](#) [B72670M1140K72](#) [TVZ18EC271KBS](#) [TVZ20EB911KBS](#) [TVZ25D201KBS](#) [TVZ25D241KBS](#) [VDRH20X230BSE](#) [VZ07D220KBS](#) [VZ40D241KQ-N](#) [VZ40D241K](#) [VZ25D511KBS-N](#) [VZ20E511KBSX](#) [VZ20E221KBSX](#) [VZ10D471KBS-N](#) [20A9FN241K](#) [B72650M350K72](#) [TVZ25D301KBS](#) [TVZ20EC911KBS](#) [TVZ20EBN911KBS](#) [TVZ18EC471KBS](#) [B72220S350K101](#) [NTE1V030](#) [NTE1V275](#) [NTE2V015](#) [NTE2V035](#) [NTE2V115](#) [VZ20D391KBS-N](#) [VZ10D241KBS-N](#) [VZ07D390KBS-N](#) [VDRH14V060TSE](#) [VDRH20X300BKE](#) [V300LT4PX1841](#) [NTE1V017](#) [NTE1V115](#) [NTE1V150](#) [NTE1V300](#) [NTE2V025](#)