

Features

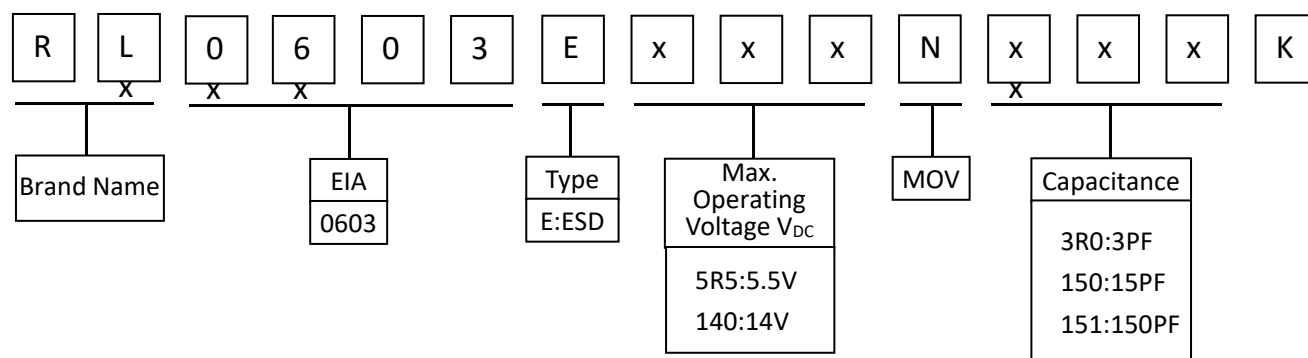
- EIA size:0603
- Variable capacitance
- Operating voltage: 5.5~38Vdc
- High surge suppress capability
- Bidirectional and symmetrical V/I characteristics
- Multilayer ceramic construction technology
- RoHS & Halogen Free (HF) compliant
- Operating temperature range: -55℃ ~ +125℃
- Storage temperature range: 5℃ ~ +40℃



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	Capacitance	Peak Pulse Current	Clamping Voltage	ESD Contact
	V _{1mA} (V)	V _{DC} (V)	C _p (pF)	I _P (A)	V _c (V)	ESD(KV)
RL0603E5R5N331K	10~16	5.5	≤330	20	32	6
RL0603E5R0N5R0K	14~24	5	3~8	1	48	6
RL0603E8R0N100K	14~22	8	5~15	2	44	6
RL0603E8R0N221K	14~22	8	≤220	15	44	6
RL0603E100N220K	15~25	10	22±30%	3	50	6
RL0603E100N211K	15~25	10	210±30%	30	50	6
RL0603E120N100K	18~38	12	4~16	2	56	6
RL0603E120N330K	20~35	12	20~50	5	70	6
RL0603E140N6R8K	20~30	14	3~9	1	60	6
RL0603E140N600K	20~30	14	60±30%	10	60	6
RL0603E140N301K	20~30	14	300±30%	60	60	6
RL0603E180N100K	25~40	18	5~15	2	80	6
RL0603E180N800K	25~40	18	80±30%	15	80	6
RL0603E200N3R0K	30~45	20	2~6	1	90	6
RL0603E200N680K	30~50	20	≤68	15	100	6
RL0603E280N3R0K	60~80	28	2~6	1	160	6
RL0603E280N270K	60~80	28	≤27	5	160	6
RL0603E280N750K	60~80	28	60~90	40	160	6
RL0603E350N150K	100~140	35	10~20	5	280	6
RL0603E240N3R0K	100~185	24	1~5	1	360	6
RL0603E380N3R0K	140~200	38	2~4	1	400	6

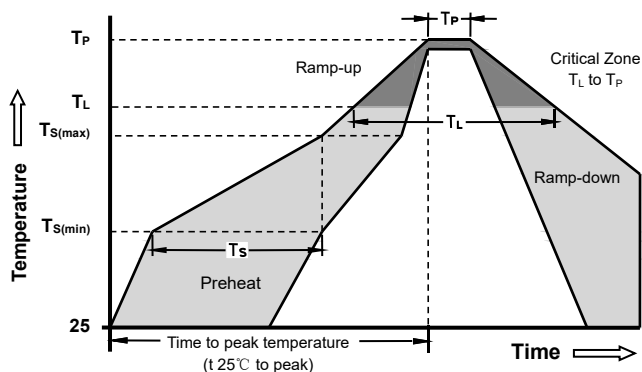
Environmental Performance

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



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.

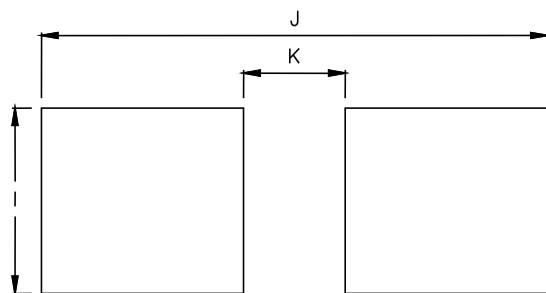
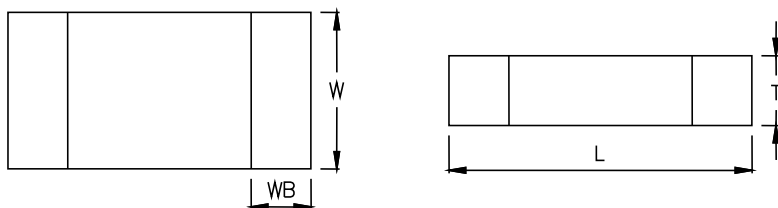
- 1) The tip temperature must be less than 280 for the period within 3 seconds by using soldering gun under 30W
- 2) The soldering gun tip shall not touch this product directly.

Soldering volume

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

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

Dimensions



Recommended Soldering Pad Layout

Symbol	Millimeters	Inches
L	1.60±0.15	0.063±0.006
W	0.80±0.15	0.031±0.006
T_{max}	1.01	0.040
WB	0.30±0.15	0.012±0.006
I	0.9	0.035
J	2.54	1
K	0.51	0.02