东莞久尹电子有限公司
DONGGUAN JOYIN ELECTRONICS CO.,LTD.

2020.11.04

SPECIFICATION FOR APPROVAL

202011013A

CUSTOMER : Electronics Source Co., Ltd

Products Name : Varistor

JOYIN P/N :

JVR10N391K87PU5

Type No. :

10N391K

ISSUE DATE : Nov-04-2020

DRAWN BY	CHECKED BY	QA	APPROVED BY
庞春喜			

CUSTOMER RESPONSE

- ☐ **Approval**
- ☐ **Approval with the following change**
- ☐ **Reject with the following reasons**

CUSTOMER SIGNATURE **DATE**

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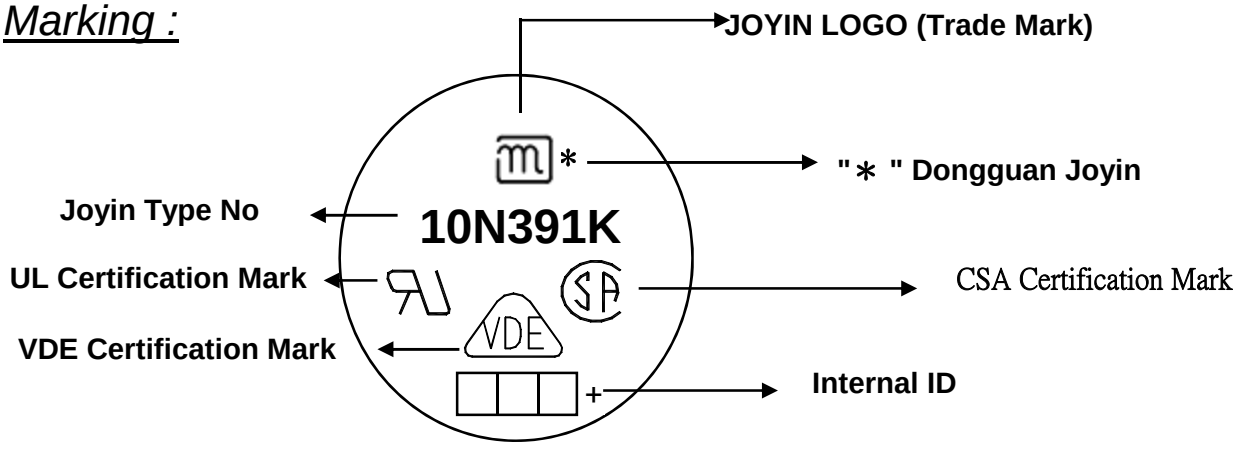
Part Number Code

JVR	10	N	391	K	8	7	P	U5
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

No.	Item	Digit	Specification
(1)	Product Type	JVR	Joyin ZnO Varistor & RoHS
(2)	Body Size	10	Φ 10 mm
(3)	Series	N	Standard Surge
(4)	Varistor Voltage	391	39x 10^1V = 390V (V_{1mA})
(5)	Tolerance of V_{1mA}	K	±10%
(6)	Lead Diameter	8	0.8 mm
(7)	Lead Spacing	7	7.5 mm
(8)	Lead Style	P	Straight Lead
(9)	Packaging	U5	Bulk & Lead Length 25 mm min

Marking :



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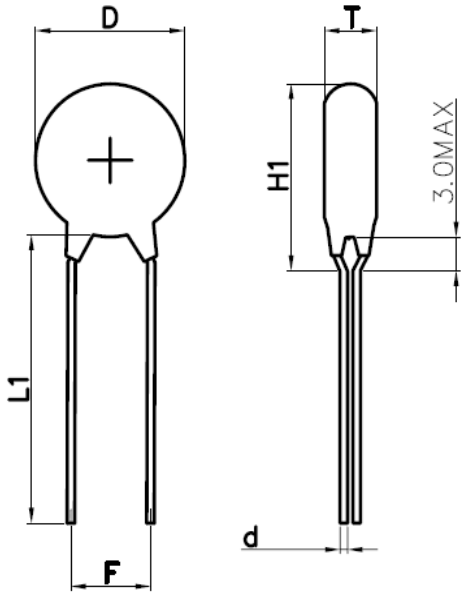
Electrical Characteristics

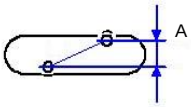
Type No.	Maximum Allowable Voltage		Varistor Voltage V /1mA		Maximum Clamping Voltage	Withstanding Surge Current (8/20μs)	Rated Wattage	Energy (10/1000μs)	Certification
	ACrms (V)	DC (V)	(V)	Tolerance	V@25A (V)	1 Time (A)	(W)	(J)	
10N391K	250	320	390	±10%	650	2500	0.4	60.0	★ ★ ★ ★

Material of coating：Epoxy powder
Color of coating：Yellowish brown
Max. response time：25 n sec.
Operating temperature：-40 ~ 85 ℃



Lead style :

- ■ P : Straight type
- □ Y : Kink type
- □ I : Inside kink type
- □ E : Outside kink type

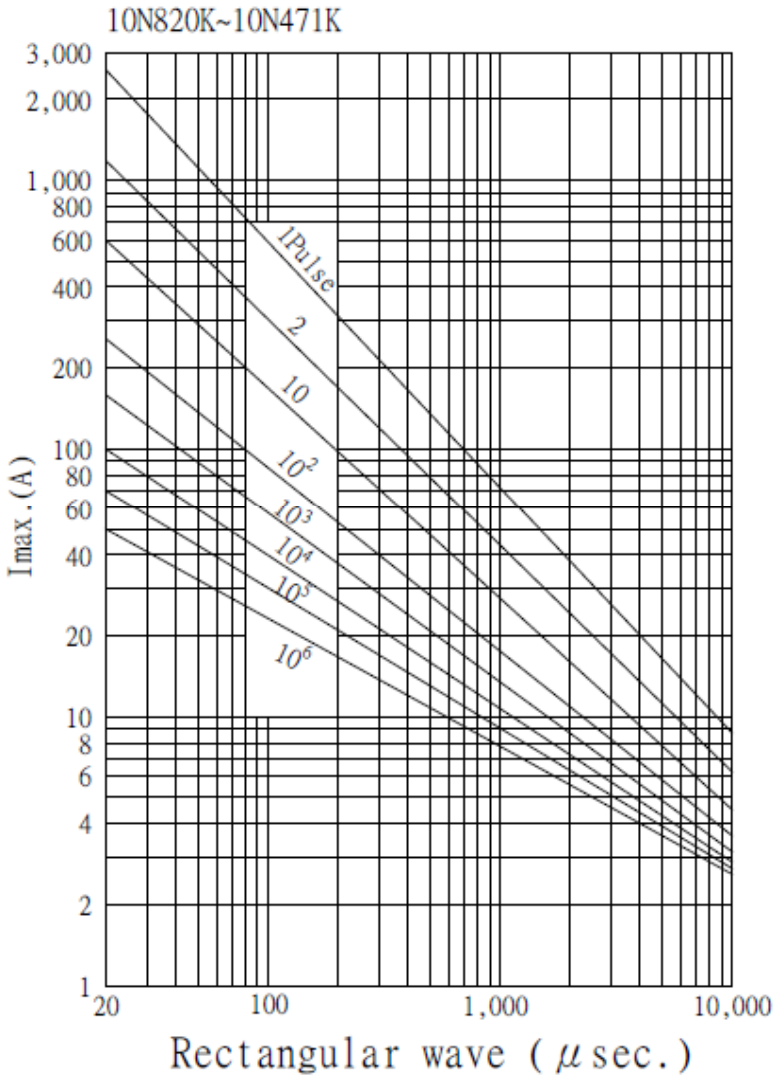


Bottom view

DIMENSION : **(Unit : mm)**

Type No.	D max.	T max.	L1 min	F±1.0	d±0.05	H1 max	A±0.8
10N391K	12.5	5.2	25.0	7.5	0.8	15.0	2.2

Max. Surge Current Derating Curves



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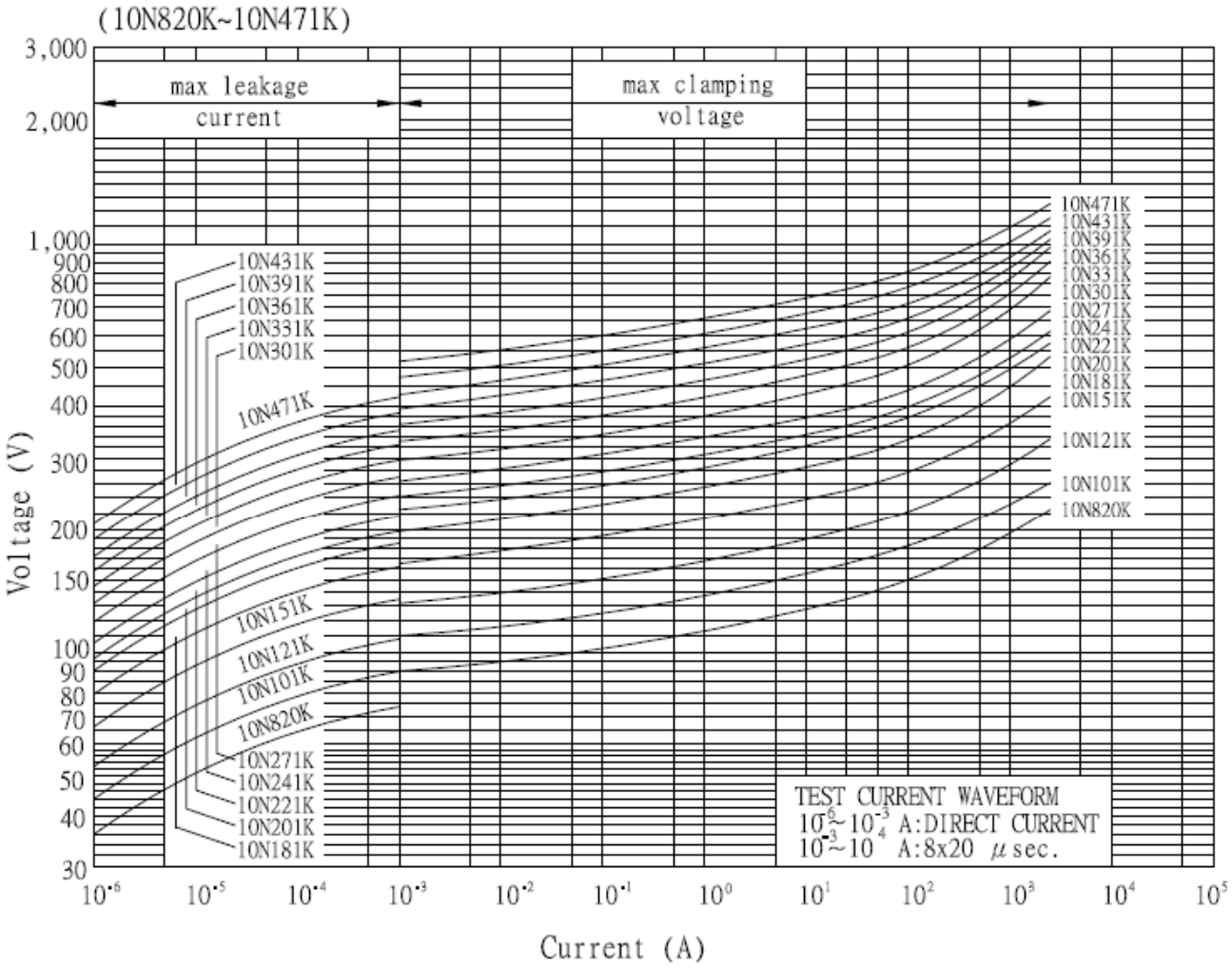
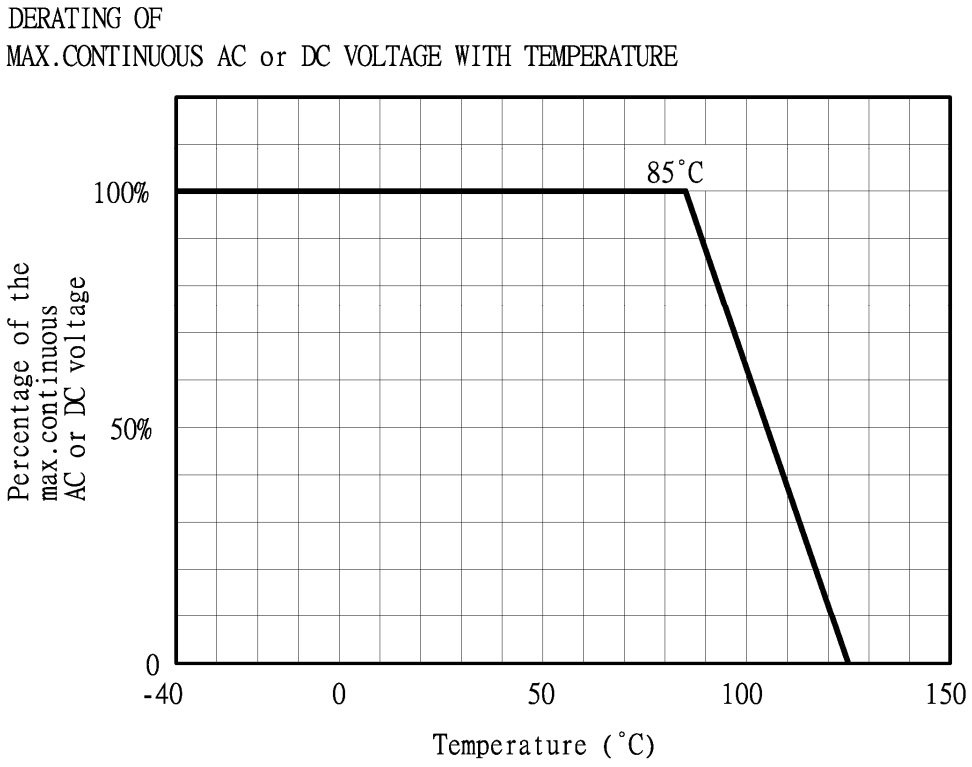
Max. Leakage Current and Max. Clamping Voltage Curve



Power Derating Curve

When operating temperature exceeds 85℃, the power, the Max. continuous operation Voltage, the Max. Surge Current and the Max. Energy should be derated as below figure, the derated coefficient is -2.5%.



RoHS Compliant Declaration

We hereby declare that the components delivered to your company are compliant with RoHS Directive （EU）2015/863

Storage condition of products

(I) Storage Conditions :

1.Storage Temperature : -10℃ ~ +40℃

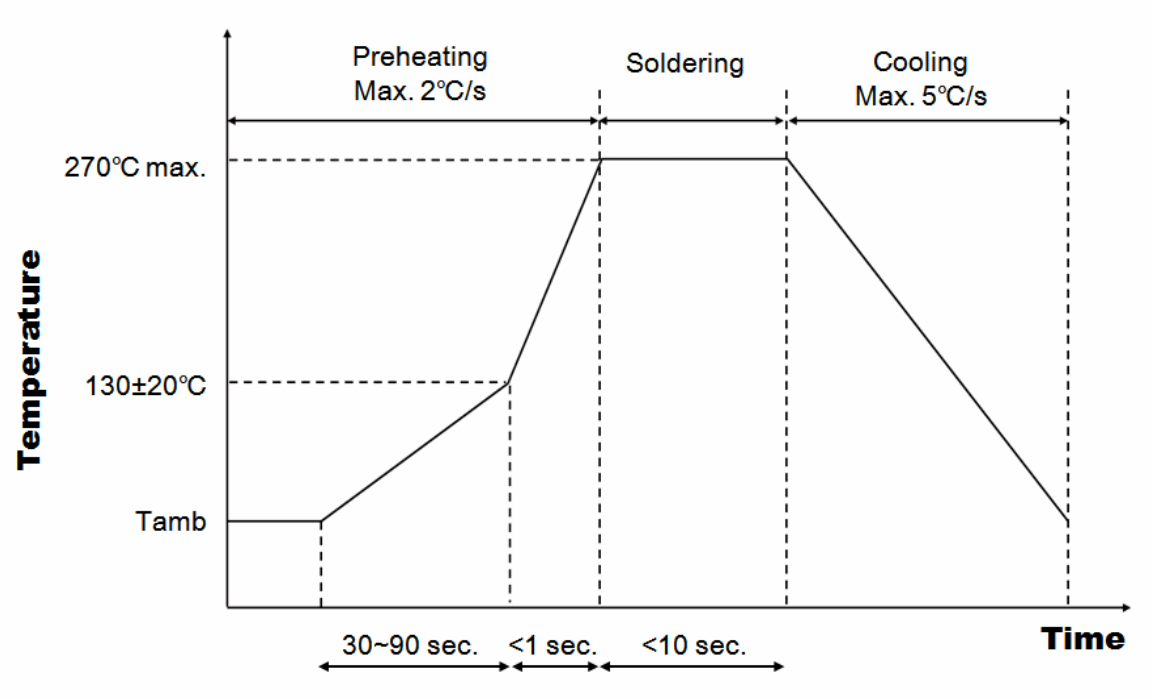
2.Relative Humidity : ≦75%RH

3.Keep away from corrosive atmosphere and sunlight.

(II) Period of Storage : 1.0 year

Soldering Recommendation

■ Wave Flow Soldering Profile



■ Recommended Reworking Conditions With Soldering Iron

Item	Conditions
Temperature of Soldering Iron-tip	380℃ (max.)
Soldering Time	3 sec (max.)
Distance form Varistor	2 mm (min.)

JOYIN CO., LTD

Metal Oxide Varistor

■Reliability-JVR

Test description	Standard	Test condition	Test requirement
Tensile Strength of Terminals	IEC60068-2-21	After gradually applying the load specified below and keeping the unit fixed for 10±1 seconds. Terminal diameter (mm) / Force (Kg) 0.5＜d≦0.8 : 1.0 0.8＜d≦1.25 : 2.0	No visible damage △Vb%≦±5%
Bending Strength of Terminals	IEC60068-2-21	Hold specimen and apply the force specified below to each lead. Bend the specimen to 90°,then return to the original position. Repeat the procedure in the opposite direction. Terminal diameter (mm) / Force (Kg) 0.5＜d≦0.8 : 0.5 0.8＜d≦1.25 : 1.0	No visible damage △Vb%≦±5%
Vibration	IEC60068-2-6	Frequency range : 10Hz~55Hz Amplitude : 0.75㎜ or 98 m/s^2 Direction : 3 mutually perpendicular directions,2hrs each.	No visible damage △Vb%≦±5%
Solderability	IEC60068-2-20	Bath temperature : 245±3℃ Immersion time : 3±0.3 sec	At least 95% of terminal electrode is covered by new solder
Resistance to soldering heat	IEC60068-2-20	Bath temperature : 260±3℃ Immersion time : 10±1 sec (5N series 5±0.5s)	No visible damage △Vb(1mA)≦±5%
Voltage Proof	IEC61051-1	The specified voltage is applied between both terminals of the component connected together for 1 minute . 2500Vrms(AC) : Test Voltage(AC)	No visible damage
Rapid change of temperature	IEC60068-2-14	Temperature cycle shall be repeated 5 cycles 1.-40±3℃ keeping 30±3min 2.Room temperature keeping 5±3min 3.125±2℃ keeping 30±3min 4.Room temperature keeping 5±3min	No visible damage △Vb%≦±5%
Damp Heat , Steady State	IEC60068-2-78	Temperature 40±2℃ R.H.90~95% and the maximum Allowable voltage for 1000±24 hours	No visible damage △Vb%≦±10%
		Temperature 40±2℃ R.H.90~95% for 1000±24 hours	No visible damage △Vb%≦±5%
High temperature load	MIL-STD-202 Method 108	After being continuously applied the max allowable voltage at 85±2℃ for 1000 hours	No visible damage △Vb%≦±10%
High temperature storage	IEC60068-2-2	125±5℃ for 1000±24 hours	No visible damage △Vb%≦±5%
Low temperature storage	IEC60068-2-1	-40±2℃ for 1000±24 hours	No visible damage △Vb%≦±5%
Varistor Voltage Temp.Coefficient	Specification Standard	Measure V1mA at -40℃、25℃、125℃	-0.05≦TC≦0.05(%/℃)
8/20μs Surge Life	IEC61051-1	8/20μs waveform,10 surge current,unipolar,interval 30 secs, amplitude corresponding to max. surge current derating curves for 20μs.	No visible damage △Vb%≦±10%
10/1000μs Surge Life	IEC61051-1	10/1000μs waveform,10 surge current,unipolar,interval 2 mins, amplitude corresponding to max. surge current derating curves for 1000μs.	No visible damage △Vb%≦±10%

Safety Approvals

*UL 1449 recognized
(UL File# VZCA2. E325508)
*CUL CSA C22.2 No.269.5 recognized
(UL File# VZCA8. E325508)

*CSA recognize (File # 1305120)

*VDE IEC61051-1 : 2007-04 / IEC61051-2 : 1991-01 /
IEC61051-2-2 : 1991 recognized (File #5937)

*CQC GB/T1093-1997、GB/T10194-1997
GB4943.1-2011 GB8898-2011 recognized
(File # CQC07001019162)

Certificate

(1) ISO 9001:2015 certificate

Tset Report

(1) RoHS SGS test report

(2) Halogen-free test report