

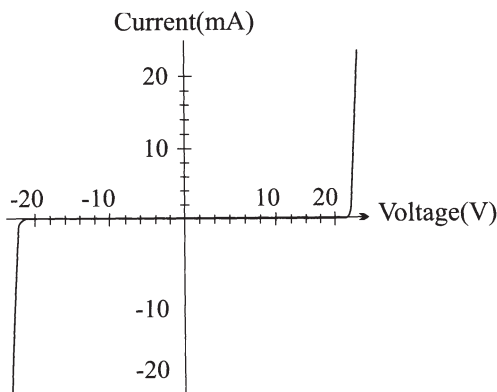
JVR ZINC OXIDE VARISTORS

Zinc oxide varistor is a voltage dependent resistor with symmetrical voltage-current characteristics that is designed to protect all kinds of electronic devices or elements from switching and induced lightning surges. Its non linear exponent characteristic with broad using range and mass production is gradually being used by various level of electric engineering.

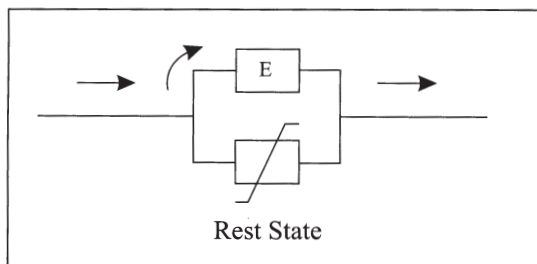
FEATURES

- Fast response time.
- Low leakage current.
- Excellent voltage ratio.
- Wide voltage & energy ratio.
- Low standby power and no follow on current.
- High performance in surge current handling capability.
- High performance in clamping voltage characteristics.

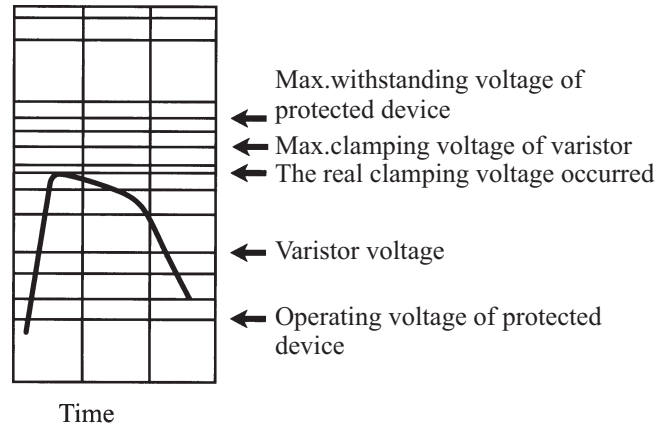
V-I Characteristics of varistor



The varistor's rest state has a high impedance (several megaohms) in relation to the component to be protected and does not change the characteristics of the electric circuit. In the presence of transient voltage (over the breakdown voltage of varistor), the varistor then has a low impedance (a few ohms) and short circuits, i.e. the assembly E to be protected.



Surge suppression of varistor



PARAMETERS DEFINITION

Varistor Voltage (breakdown voltage):

The varistor voltage is the voltage across the varistor measured at a specified current I_c (0.1mA or 1mA) of specified duration.

Maximum allowable voltage:

The Maximum allowable voltage corresponds to the rest state of the varistor. The rest state voltage offers a low leakage current in order to limit the power consumption of the protected device and not to disturb the circuit to be protected.

Non linear exponent (α)

The varistor voltage-current characteristic is defined by the equation:

$I = KV^\alpha$ where K is a constant dependent on geometry, and α is the non linear exponent. We usually take two points $(V_1, I_1), (V_2, I_2)$ to estimate the value of α .

$$\alpha = \frac{\log I_1 / I_2}{\log V_1 / V_2}$$

In which I_1 and I_2 are the current value corresponding to the voltage value V_1 and V_2 .

Maximum clamping voltage:

Maximum clamping voltage is the maximum voltage V_p between two terminals with the specified standard impulse current I_p (8x20 μ sec). The voltage value is an indication on the protective function of the varistor.

Energy(Joule):

Maximum energy from one or a burst of pulses. It is the value within the varistor change of $\pm 10\%$ when one impulse of $10 \times 1000 \mu \text{ sec}$ is applied.

$$E = K \times V_m \times I_m \times T$$

E :Energy(Joule)

K :Constant=1.4

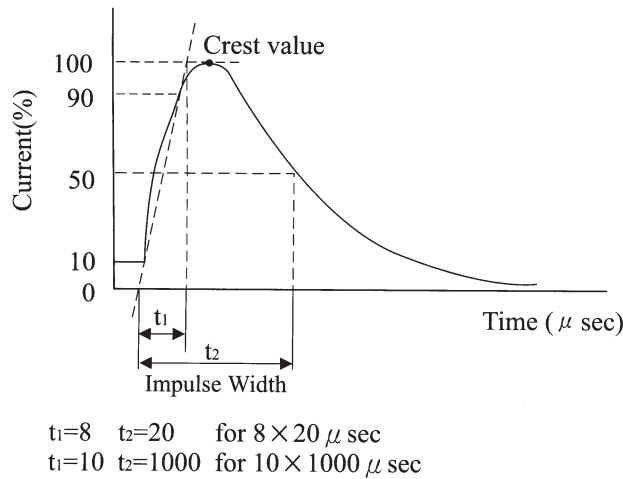
V_m :Max.clamping voltage at I_m .

I_m :Max.allowable single surge current of $10 \times 1000 \mu \text{ sec}$.

T :Duration of surge current($1000 \mu \text{ sec}$)

Withstanding surge current:

Withstanding surge current is the maximum peak current for the varistor with specified standard impulse current($8 \times 20 \mu \text{ sec}$)applied one time or two times and corresponding to a permissible variation of 10% in the varistor voltage change.



Rated wattage

The maximum power that can be applied within the specified ambient temperature.

Capacitance

The capacitance of varistor is the reference value measured between the varistor terminals at specified frequency.

Pulse lifetime rating

This is expressed as the maximum allowable number of impulse currents applied. $8 \times 20 \mu \text{ sec}$ impulse current(or $10 \times 1000 \mu \text{ sec}$)is applied at prescribed interval.This curve also provides for derating current as required with repetitive pulsing.

GENERAL CHARACTERISTICS

Storage temperature:-40°C ~ + 125°C

Max.response time:25 n sec.

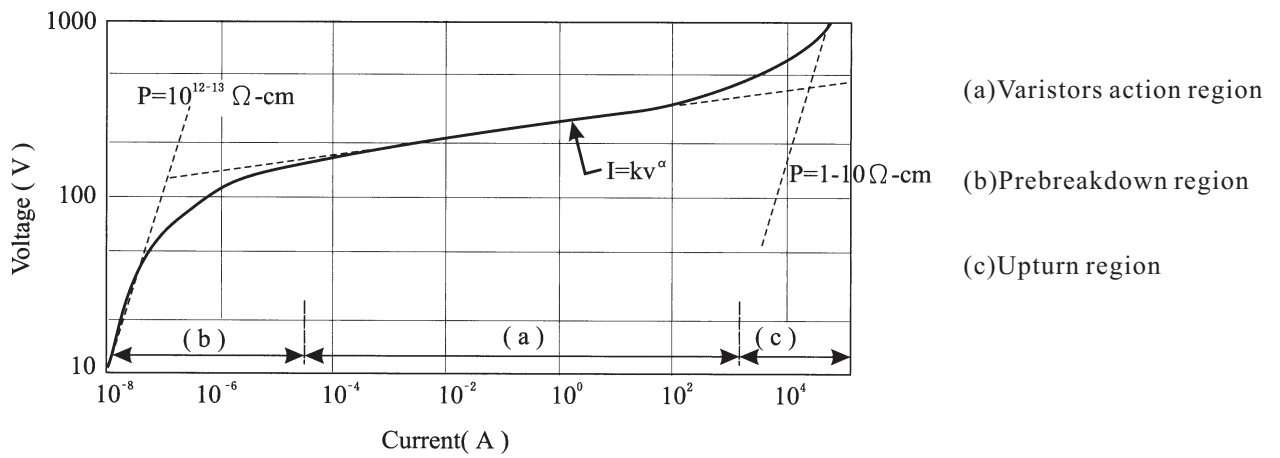
Max.operating temperature:-40°C ~ + 125°C

Temp.coefficient of voltage:0 ~ 0.05%/°C max.

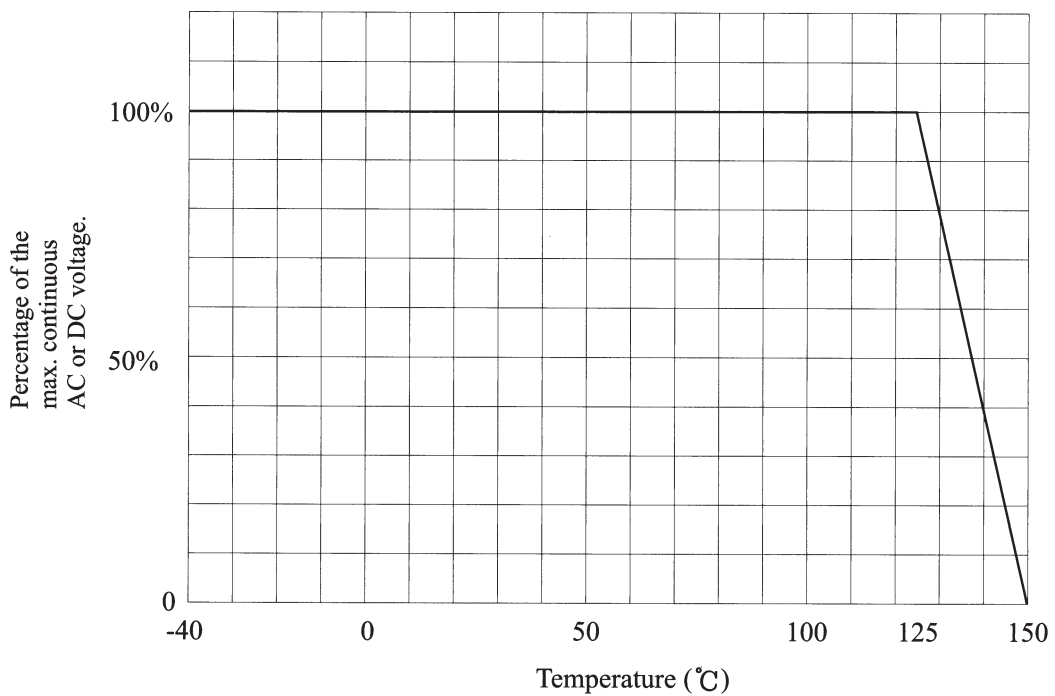
Max.working surface temperature.: + 115°C

Insulation resistance(at DC 500V):Over 1000MΩ

CURRENT-VOLTAGE CHARACTERISTICS



MAX. CONTINUOUS AC or DC VOLTAGE WITH TEMPERATURE

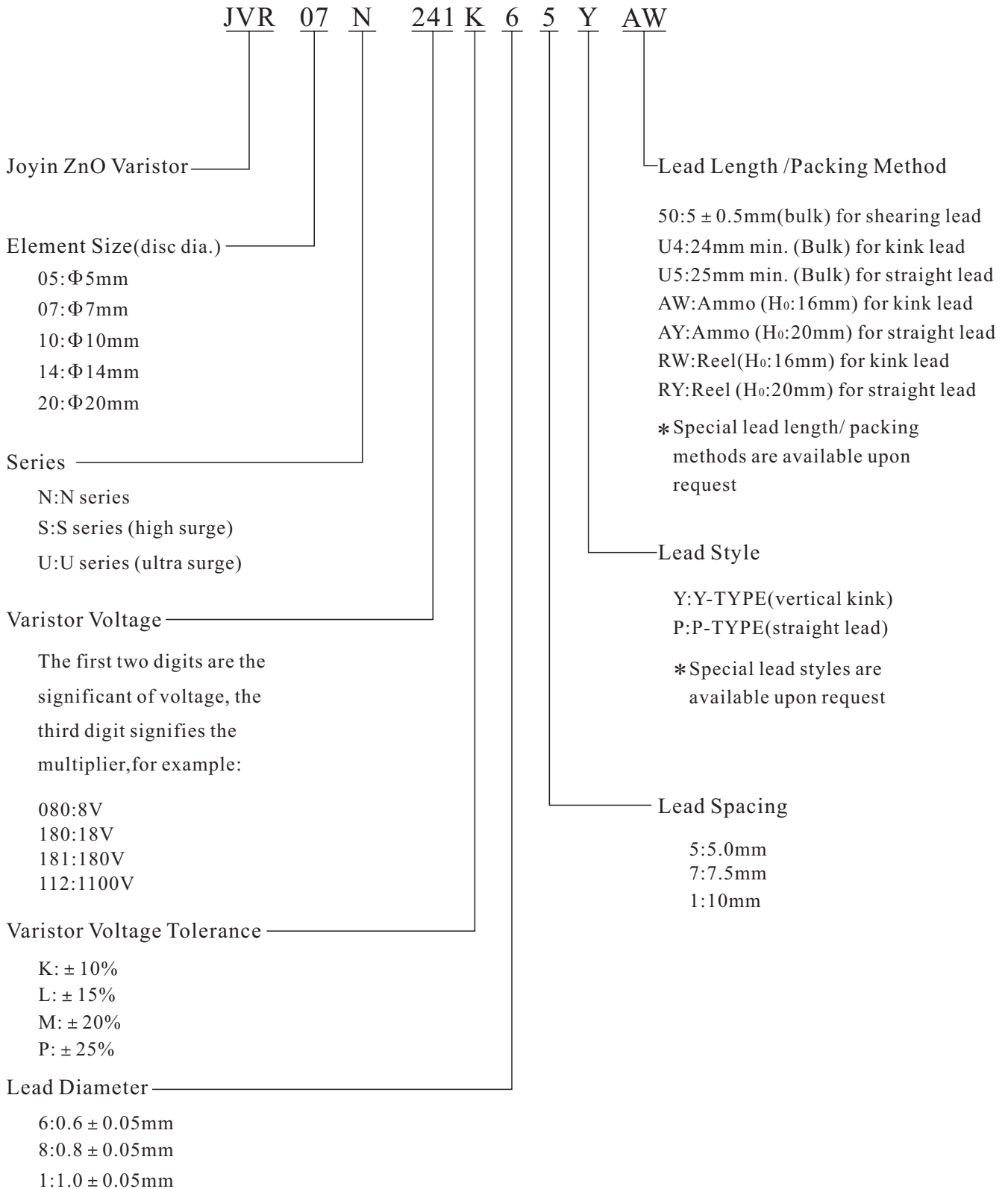


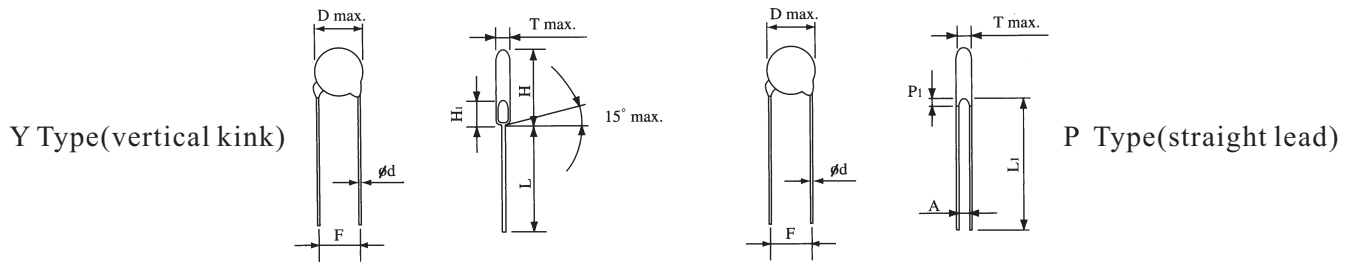
SOURCE OF SURGE VOLTAGE

- Direct lightning surges.
- Surge voltage by grounding fault.
- From magnetic induction.
- Induced lightning surges.
- Surge voltage by switching operation
- From electrostatic induction

HOW TO ORDER BY PART NUMBER

JVR 07 N 241 K 6 5 Y AW





Dimension Table

unit:mm

Diameter	5Φ	7Φ	10Φ	14Φ	20Φ
D max.	7.5	9.0	12.5	16.5	23
d ± 0.05	0.6	0.6	0.6/0.8	0.8/1.0	0.8/1.0
F ± 1.0	5.0	5.0	5.0/7.5	7.5/10.0	7.5/10.0
H max.	11.0	13	18	22	28
H1 max.	3.5	3.5	5	5	5
L1 min.	25.0	25.0	25.0	25.0	25.0
L min.	24.0	24.0	24.0	24.0	24.0


Table of T max., A & P₁ max

unit:mm

Diameter	5Φ			7Φ			10Φ			14Φ			20Φ		
	T max.	A ± 0.8	P ₁ max	T max.	A ± 0.8	P ₁ max	T max.	A ± 0.8	P ₁ max	T max.	A ± 0.8	P ₁ max	T max.	A ± 0.8	P ₁ max
180M	4.5	1.4	3.0	4.5	1.4	3.0	4.9	1.4	3.0	5.0	1.5	3.0	5.2	1.5	3.0
220L	4.5	1.5	3.0	4.5	1.5	3.0	4.9	1.5	3.0	5.0	1.6	3.0	5.3	1.6	3.0
270K	4.7	1.5	3.0	4.7	1.5	3.0	5.1	1.5	3.0	5.2	1.7	3.0	5.4	1.7	3.0
330K	4.7	1.6	3.0	4.7	1.6	3.0	5.1	1.6	3.0	5.2	1.8	3.0	5.4	1.8	3.0
390K	4.7	1.8	3.0	4.7	1.8	3.0	5.1	1.8	3.0	5.2	2.0	3.0	5.4	2.0	3.0
470K	5.0	1.8	3.0	5.0	1.8	3.0	5.5	1.8	3.0	5.6	2.0	3.0	5.6	2.0	3.0
560K	5.0	2.0	3.0	5.0	2.0	3.0	5.5	2.0	3.0	5.6	2.2	3.0	5.6	2.2	3.0
680K	5.5	2.3	3.0	5.5	2.3	3.0	6.0	2.3	3.0	6.1	2.5	3.0	6.1	2.5	3.0
820K	3.8	1.4	3.0	3.8	1.4	3.0	4.3	1.4	3.0	4.4	1.6	3.0	4.9	1.8	3.0
101K	3.9	1.4	3.0	3.9	1.4	3.0	4.4	1.4	3.0	4.5	1.6	3.0	5.1	1.8	3.0
121K	4.1	1.5	3.0	4.1	1.5	3.0	4.5	1.5	3.0	4.6	1.7	3.0	5.3	1.9	3.0
151K	4.5	1.8	3.0	4.5	1.8	3.0	4.9	1.8	3.0	5.1	2.0	3.0	5.6	2.2	3.0
181K	4.1	1.6	3.0	4.1	1.6	3.0	4.5	1.6	3.0	4.7	1.8	3.0	5.2	2.0	3.0
201K	4.2	1.6	3.0	4.2	1.6	3.0	4.6	1.6	3.0	4.8	1.8	3.0	5.3	2.0	3.0
221K	4.3	1.7	3.0	4.3	1.7	3.0	4.7	1.7	3.0	4.9	1.9	3.0	5.4	2.1	3.0
241K	4.4	1.7	3.0	4.4	1.9	3.0	4.8	1.9	3.0	5.0	2.1	3.0	5.5	2.3	3.0
271K	4.6	1.9	3.0	4.6	2.0	3.0	5.0	2.0	3.0	5.2	2.1	3.0	5.7	2.5	3.0
301K	4.8	1.9	3.0	4.8	2.1	3.0	5.2	2.2	3.0	5.4	2.3	3.0	5.9	2.7	3.0
331K	4.9	1.9	3.0	4.9	2.1	3.0	5.3	2.2	3.0	5.5	2.3	3.0	6.0	2.7	3.0
361K	5.1	2.4	3.0	5.1	2.5	3.0	5.5	2.5	3.0	5.7	2.7	3.0	6.2	2.9	3.0
391K	5.3	2.6	3.5	5.3	2.6	3.5	5.7	2.8	3.5	5.9	2.8	3.5	6.4	3.0	3.5
431K	6.1	2.7	3.5	6.1	2.9	3.5	6.5	3.1	3.5	6.7	3.1	3.5	7.2	3.3	3.5
471K	6.4	2.8	3.5	6.4	2.9	3.5	6.8	3.2	3.5	7.0	3.3	3.5	7.5	3.5	4.0
511K	6.6	3.1	4.0	6.6	3.1	4.0	7.0	3.7	4.0	7.2	3.7	4.0	7.7	3.9	4.0
561K	6.9	3.4	4.0	6.9	3.4	4.0	7.3	4.0	4.0	7.5	4.0	4.0	8.0	4.2	4.0
621K	7.2	3.7	4.0	7.2	3.7	4.0	7.6	4.6	4.0	7.8	4.4	4.0	8.3	4.7	4.0
681K	7.5	4.0	4.0	7.5	4.0	4.0	8.0	5.0	4.0	8.2	4.7	4.0	8.7	5.0	4.0
751K	7.9	4.3	4.0	7.9	4.3	4.0	8.4	5.0	4.0	8.6	4.9	4.0	9.1	5.1	4.0
781K				8.1	4.5	4.0	8.6	5.2	4.0	8.8	5.2	4.0	9.3	5.4	4.0
821K				8.3	4.7	4.0	8.8	5.2	4.0	9.0	5.2	4.0	9.5	5.4	4.0
911K							9.4	6.0	4.0	9.6	6.0	4.0	10.1	6.3	4.0
102K							9.9	6.0	4.0	10.1	6.2	4.0	10.7	6.4	4.0
112K							10.5	6.3	4.0	10.7	6.7	4.0	11.2	6.9	4.0
182K							12.6	9.8	6.0	12.8	10.2	6.0	13.5	10.4	6.0

RATING AND CHARACTERISTICS

Φ5mm

Part Number	Varistor Voltage V@0.1mA		Maximum Allowable Voltage		Maximum Clamping Voltage	Withstanding Surge Current (8/20 μ s)		Rated Wattage (W)	Energy (10/1000 μ s) (J)	Certification 
	DC (V)	Tolerance	ACrms (V)	DC (V)	V@5A (V)	1 Time (V)	2 Time (V)			
JVR05N180M65□△△	18	±20%	11	14	• ¹⁾ 40	100	50	0.01	0.6	☆ ☆
JVR05N220L65□△△	22	±15%	14	18	• 48				0.7	☆ ☆
JVR05N270K65□△△	27	±10%	17	22	• 60				0.9	☆ ☆
JVR05N330K65□△△	33		20	26	• 73				1.1	☆ ☆
JVR05N390K65□△△	39		25	31	• 86				1.2	☆ ☆
JVR05N470K65□△△	47		30	38	• 104				1.5	☆ ☆
JVR05N560K65□△△	56		35	45	• 123				1.8	☆ ☆
JVR05N680K65□△△	68		40	56	• 150				2.1	☆ ☆
JVR05N820K65□△△	82		50	65	145				2.8	☆ ☆
JVR05N101K65□△△	100		60	85	175	3.5	☆ ☆			
JVR05N121K65□△△	120		75	100	210	4.0	☆ ☆			
JVR05N151K65□△△	150	95	125	260	5.5	☆ ☆				
JVR05N181K65□△△	180	115	150	320	6.5	☆ ☆				
JVR05N201K65□△△	200	130	170	355	7.1	★ ☆ ★ ☆				
JVR05N221K65□△△	220	140	180	380	7.8	★ ☆ ★ ☆				
JVR05N241K65□△△	240	150	200	415	8.4	★ ☆ ★ ☆				
JVR05N271K65□△△	270	175	225	475	9.9	★ ☆ ★ ☆				
JVR05N301K65□△△	300	195	250	525	10.5	★ ☆ ★ ☆				
JVR05N331K65□△△	330	210	275	575	11.5	★ ☆ ★ ☆				
JVR05N361K65□△△	360	230	300	620	13.0	★ ☆ ★ ☆				
JVR05N391K65□△△	390	250	320	675	15.0	★ ☆ ★ ☆				
JVR05N431K65□△△	430	275	350	745	16.5	★ ☆ ★ ☆				
JVR05N471K65□△△	470	300	385	810	17.5	★ ☆ ★ ☆				
JVR05N511K65□△△	510	320	418	880	18.5	★ ☆ ★ ☆				
JVR05N561K65□△△	560	350	460	940	19.5	★ ☆ ★ ☆				
JVR05N621K65□△△	620	385	505	1050	20.5	★ ☆ ★ ☆				
JVR05N681K65□△△	680	420	560	1150	21.5	★ ☆ ★ ☆				
JVR05N751K65□△△	750	460	615	1290	22.5	★ ☆ ★ ☆				

1) The clamping voltage from 180M to 680K are tested with current 1A.

For application required ratings not shown, contact Joyin application engineering.

□ :Lead Style (please refer to page 126)

Y: vertical kink (standard)

P: straight leads

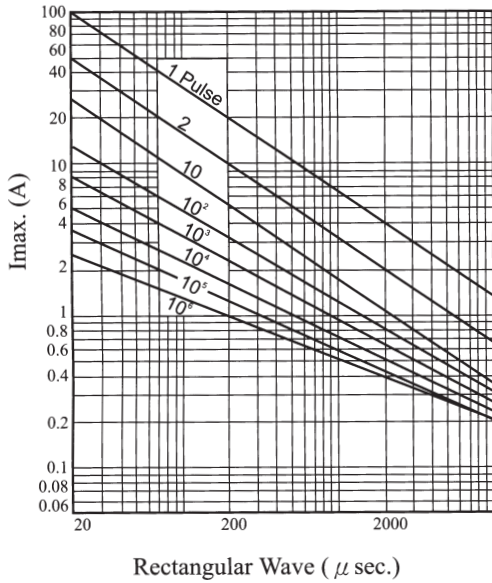
△△:Lead Length / Packing Method (Please refer to page 125 for the detail codes)

Application Notes for UL,CSA and VDE Recognized Components Related Standards

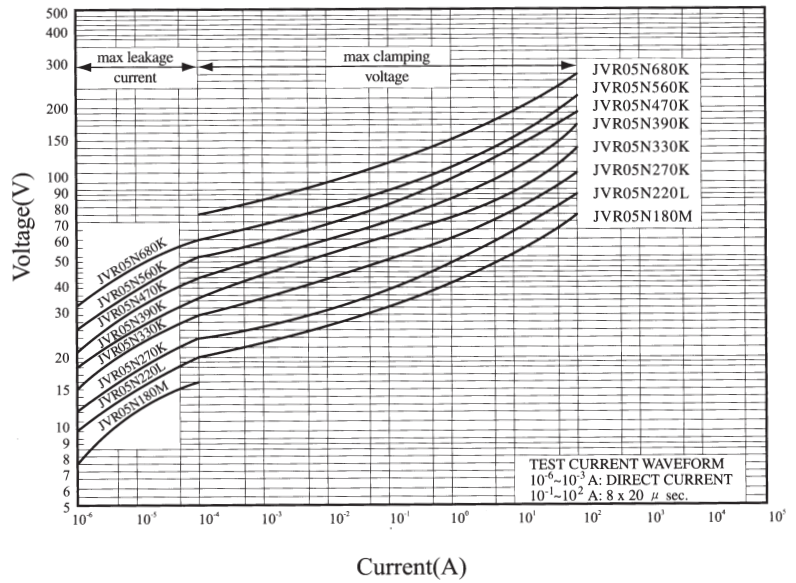
Standard No.	UL1414	UL1449(2nd Edition)	CSA	VDE
Title	Across-The-Line Components	Transient Voltage Surge Suppressors	Accessories and parts for electronic products	Varistors for use in electronic equipment
File No.	E154922	E153360	LR101867-1/-8/-15	19006-4790-0002
Symbols	★	☆	★	★

PULSE LIFETIME RATINGS-5Φ V-I CHARACTERISTIC CURVE-5Φ

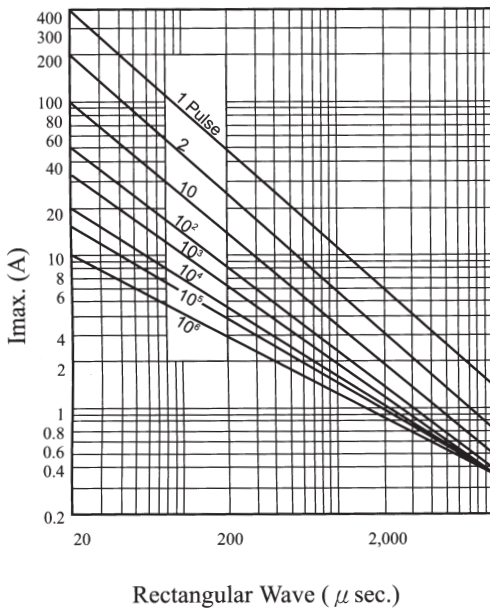
JVR05N180M~JVR05N680K



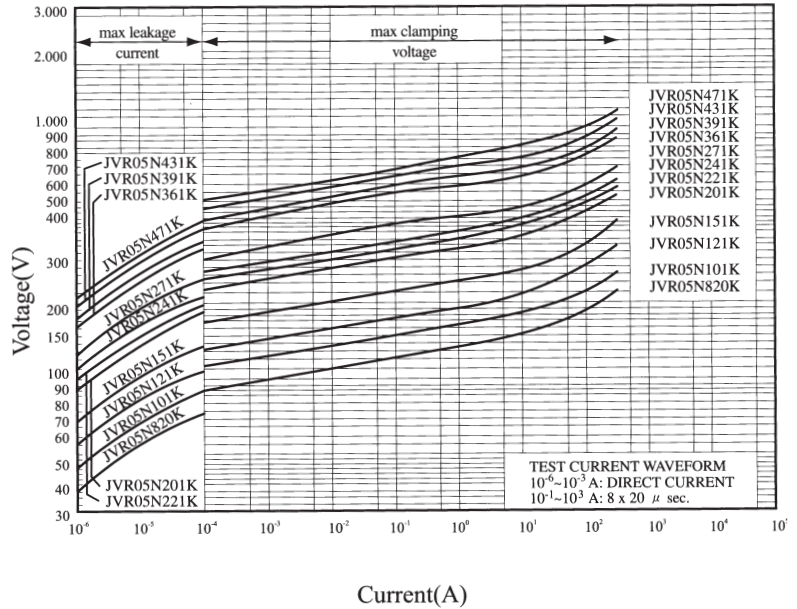
JVR05N180M~JVR05N680K



JVR05N820K~JVR05N751K



JVR05N820K~JVR05N471K



RATING AND CHARACTERISTICS

Φ7mm

Part Number	Varistor Voltage V@1mA		Maximum Allowable Voltage		Maximum Clamping Voltage	Withstanding Surge Current (8/20 μ s)		Rated Wattage (W)	Energy (10/1000 μ s) (J)	Certification (ref to page 127)
	DC (V)	Tolerance	ACrms (V)	DC (V)	V@10A (V)	1 Time (V)	2 Time (V)			
JVR07N180M65□△△	18	±20%	11	14	• ¹⁾ 36	250	125	0.02	1.2	☆ ☆
JVR07N220L65□△△	22	±15%	14	18	• 43				1.4	☆ ☆
JVR07N270K65□△△	27	±10%	17	22	• 53				1.7	☆ ☆
JVR07N330K65□△△	33		20	26	• 65				2.2	☆ ☆
JVR07N390K65□△△	39		25	31	• 77				2.4	☆ ☆
JVR07N470K65□△△	47		30	38	• 93				3.0	☆ ☆
JVR07N560K65□△△	56		35	45	• 110				3.5	☆ ☆
JVR07N680K65□△△	68		40	56	• 135				4.3	☆ ☆
JVR07N820K65□△△	82		50	65	135				5.5	☆ ☆
JVR07N101K65□△△	100		60	85	165	7.0	☆ ☆			
JVR07N121K65□△△	120		75	100	200	8.0	☆ ☆			
JVR07N151K65□△△	150	95	125	250	11.0	☆ ☆				
JVR07N181K65□△△	180	115	150	300	13.0	☆ ☆				
JVR07N201K65□△△	200	130	170	340	14.3	☆ ☆ ☆ ☆				
JVR07N221K65□△△	220	140	180	360	15.5	☆ ☆ ☆ ☆				
JVR07N241K65□△△	240	150	200	395	16.8	☆ ☆ ☆ ☆				
JVR07N271K65□△△	270	175	225	455	19.8	☆ ☆ ☆ ☆				
JVR07N301K65□△△	300	195	250	505	21.0	☆ ☆ ☆ ☆				
JVR07N331K65□△△	330	210	275	550	23.0	☆ ☆ ☆ ☆				
JVR07N361K65□△△	360	230	300	595	26.0	☆ ☆ ☆ ☆				
JVR07N391K65□△△	390	250	320	650	30.0	☆ ☆ ☆ ☆				
JVR07N431K65□△△	430	275	350	710	33.0	☆ ☆ ☆ ☆				
JVR07N471K65□△△	470	300	385	775	35.0	☆ ☆ ☆ ☆				
JVR07N511K65□△△	510	320	418	842	37.0	☆ ☆ ☆ ☆				
JVR07N561K65□△△	560	350	460	920	39.0	☆ ☆ ☆ ☆				
JVR07N621K65□△△	620	385	505	1025	41.0	☆ ☆ ☆ ☆				
JVR07N681K65□△△	680	420	560	1120	43.0	☆ ☆ ☆ ☆				
JVR07N751K65□△△	750	460	615	1240	45.0	☆ ☆ ☆ ☆				
JVR07N781K65□△△	780	485	640	1290	46.0	☆ ☆ ☆ ☆				
JVR07N821K65□△△	820	510	670	1355	47.0	☆ ☆ ☆ ☆				

1) The clamping voltage form 180M to 680K are tested with current 2.5A.
For application required ratings not shown, contact application engineering.

□ :Lead Style (please refer to page 126)

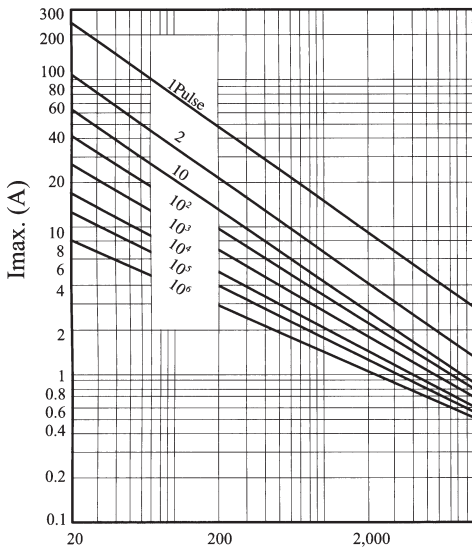
Y: vertical kink (standard)

P: straight leads

△△:Lead Length / Packing Method (Please refer to page 125 for the detail codes)

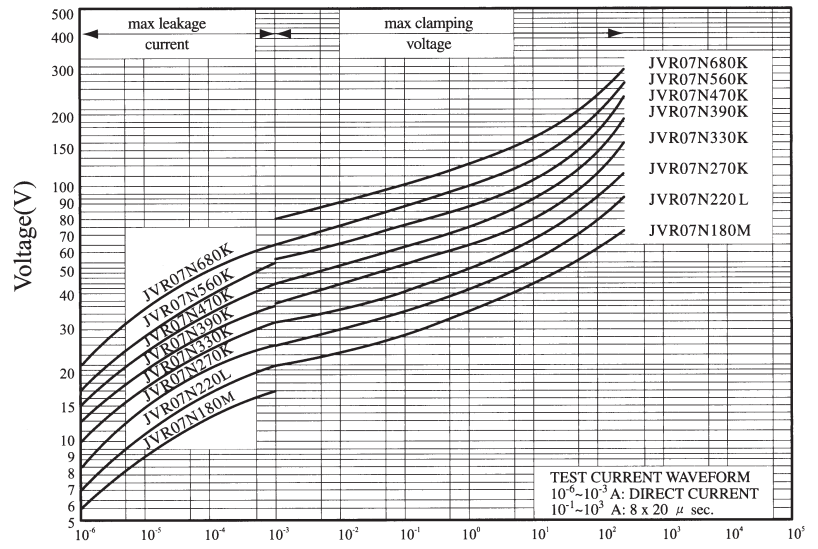
PULSE LIFETIME RATINGS-7Φ V-I CHARACTERISTIC CURVE-7Φ

JVR07N180M~JVR07N680K



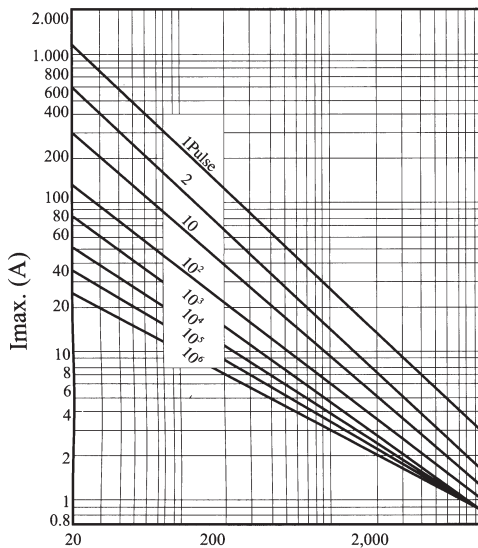
Rectangular Wave (μ sec.)

JVR07N180M~JVR07N680K



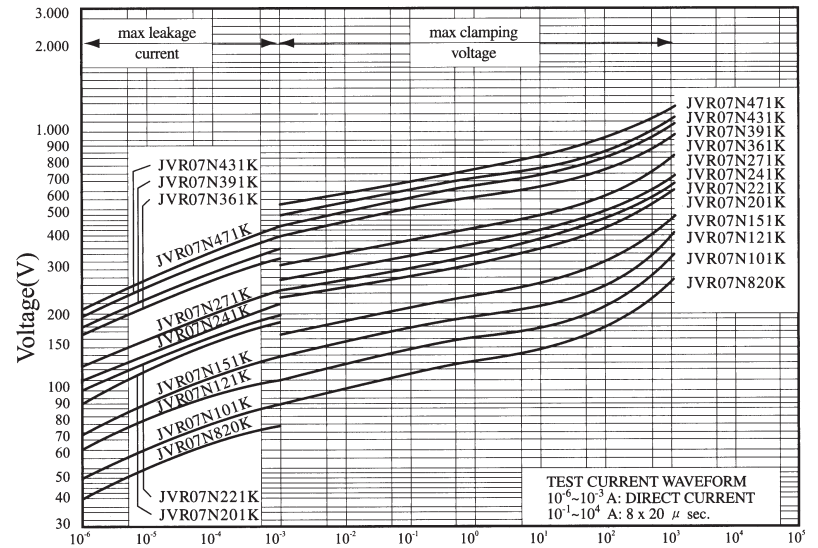
Current(A)

JVR07N820K~JVR07N821K



Rectangular Wave(μ sec.)

JVR07N820K~JVR07N471K



Current(A)

RATING AND CHARACTERISTICS

Φ10mm

Part Number	Varistor Voltage V@1mA		Maximum Allowable Voltage		Maximum Clamping Voltage	Withstanding Surge Current (8/20 μ s)		Rated Wattage (W)	Energy (10/1000 μ s) (J)	Certification (ref to page 127)
	DC (V)	Tolerance	ACrms (V)	DC (V)	V@25A (V)	1 Time (V)	2 Time (V)			
JVR10N180M87□△△	18	±20%	11	14	• ¹⁾ 36	500	250	0.05	2.4	☆ ☆
JVR10N220L87□△△	22	±15%	14	18	• 43				2.7	☆ ☆
JVR10N270K87□△△	27	±10%	17	22	• 53				3.5	☆ ☆
JVR10N330K87□△△	33		20	26	• 65				4.4	☆ ☆
JVR10N390K87□△△	39		25	31	• 77				4.7	☆ ☆
JVR10N470K87□△△	47		30	38	• 93				6.0	☆ ☆
JVR10N560K87□△△	56		35	45	• 110				7.0	☆ ☆
JVR10N680K87□△△	68		40	56	• 135				8.5	☆ ☆
JVR10N820K87□△△	82		50	65	135				11.0	☆ ☆
JVR10N101K87□△△	100		60	85	165	14.0	☆ ☆			
JVR10N121K87□△△	120		75	100	200	16.0	☆ ☆			
JVR10N151K87□△△	150	95	125	250	22.0	☆ ☆				
JVR10N181K87□△△	180	115	150	300	26.0	☆ ☆				
JVR10N201K87□△△	200	130	170	340	28.5	☆ ☆ ☆ ☆				
JVR10N221K87□△△	220	140	180	360	31.0	☆ ☆ ☆ ☆				
JVR10N241K87□△△	240	150	200	395	33.5	☆ ☆ ☆ ☆				
JVR10N271K87□△△	270	175	225	455	39.5	☆ ☆ ☆ ☆				
JVR10N301K87□△△	300	195	250	505	42.0	☆ ☆ ☆ ☆				
JVR10N331K87□△△	330	210	275	550	46.0	☆ ☆ ☆ ☆				
JVR10N361K87□△△	360	230	300	595	52.0	☆ ☆ ☆ ☆				
JVR10N391K87□△△	390	250	320	650	60.0	☆ ☆ ☆ ☆				
JVR10N431K87□△△	430	275	350	710	66.0	☆ ☆ ☆ ☆				
JVR10N471K87□△△	470	300	385	775	70.0	☆ ☆ ☆ ☆				
JVR10N511K87□△△	510	320	418	842	74.0	☆ ☆ ☆ ☆				
JVR10N561K87□△△	560	350	460	920	78.0	☆ ☆ ☆ ☆				
JVR10N621K87□△△	620	385	505	1025	82.0	☆ ☆ ☆ ☆				
JVR10N681K87□△△	680	420	560	1120	86.0	☆ ☆ ☆ ☆				
JVR10N751K87□△△	750	460	615	1240	90.0	☆ ☆ ☆ ☆				
JVR10N781K87□△△	780	485	640	1290	92.0	☆ ☆ ☆ ☆				
JVR10N821K87□△△	820	510	670	1355	94.0	☆ ☆ ☆ ☆				
JVR10N911K87□△△	910	550	745	1500	102.0	☆ ☆ ☆ ☆				
JVR10N102K87□△△	1000	625	825	1650	112.0	☆ ☆ ☆ ☆				
JVR10N112K87□△△	1100	680	895	1815	124.0	☆ ☆ ☆ ☆				
JVR10N182K87□△△	1800	1000	1465	2970	174.0					

1) The clamping voltage form 180M to 680K are tested with current 5A.

For application required ratings not shown, contact application engineering.

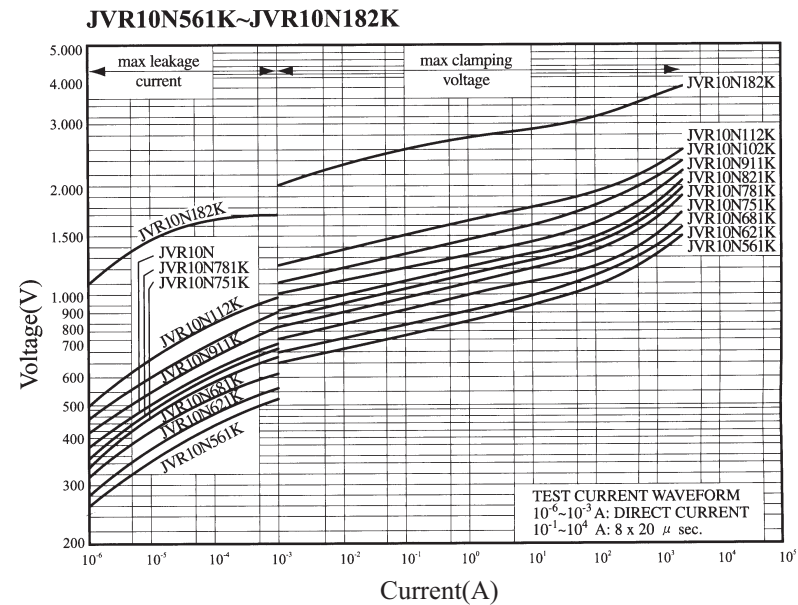
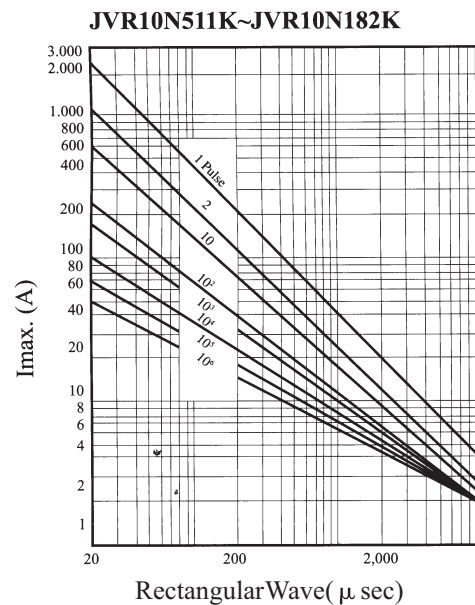
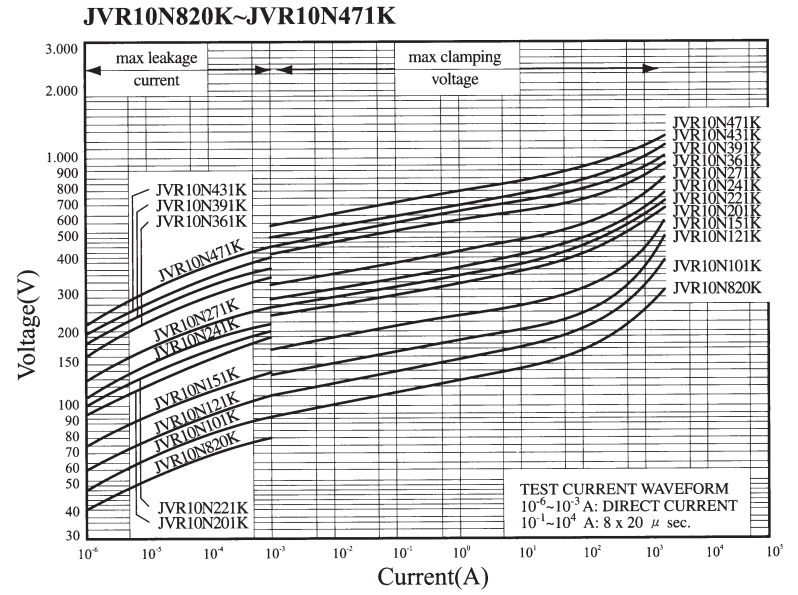
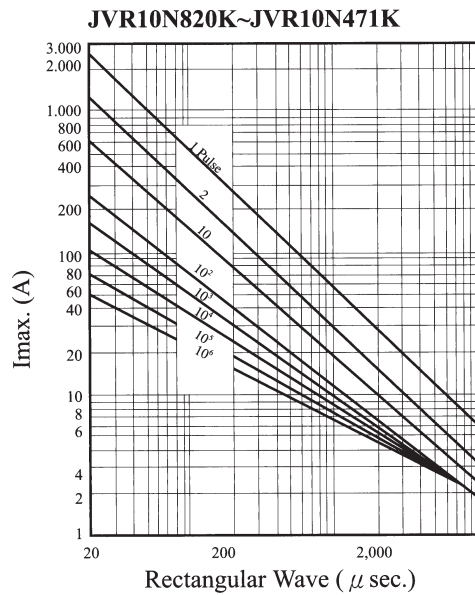
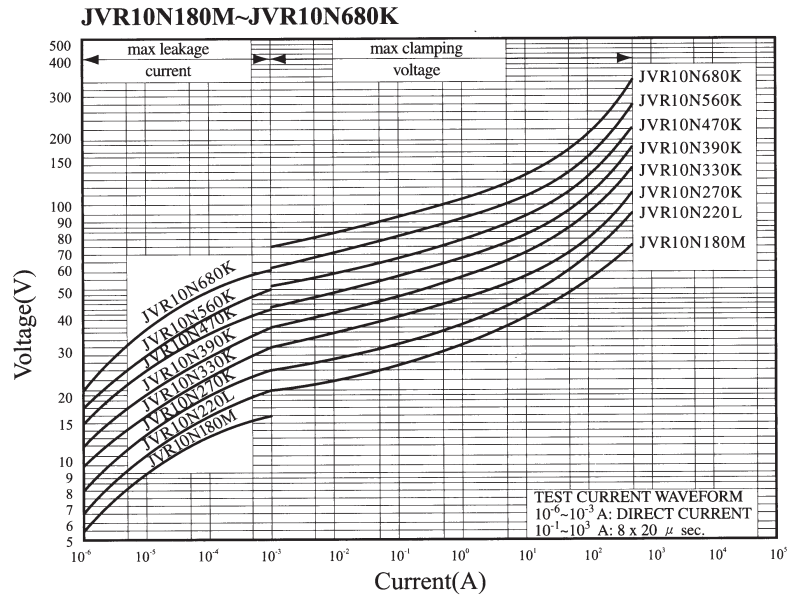
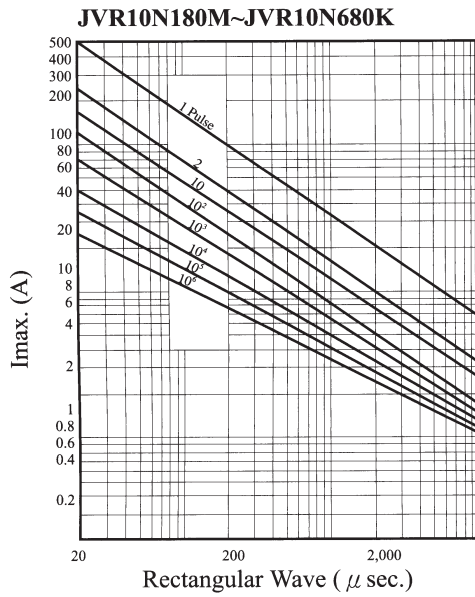
□ :Lead Style (please refer to page 126)

Y: vertical kink (standard)

P: straight leads

△△:Lead Length / Packing Method (Please refer to page 125 for the detail codes)

PULSE LIFETIME RATINGS-10Φ V-CHARACTERISTIC CURVE-10Φ



RATING AND CHARACTERISTICS

Φ14mm

Part Number	Varistor Voltage V@1mA		Maximum Allowable Voltage		Maximum Clamping Voltage	Withstanding Surge Current (8/20 μ s)		Rated Wattage (W)	Energy (10/1000 μ s) (J)	Certification (ref to page 127)
	DC (V)	Tolerance	ACrms (V)	DC (V)	V@50A (V)	1 Time (V)	2 Time (V)			
JVR14N180M87□△△	18	±20%	11	14	• ¹⁾ 36	1000	500	0.1	4.7	☆ ☆
JVR14N220L87□△△	22	±15%	14	18	• 43				5.4	☆ ☆
JVR14N270K87□△△	27	±10%	17	22	• 53				6.9	☆ ☆
JVR14N330K87□△△	33		20	26	• 65				8.8	☆ ☆
JVR14N390K87□△△	39		25	31	• 77				9.4	☆ ☆
JVR14N470K87□△△	47		30	38	• 93				12.0	☆ ☆
JVR14N560K87□△△	56		35	45	• 110				14.0	☆ ☆
JVR14N680K87□△△	68		40	56	• 135				17.0	☆ ☆
JVR14N820K87□△△	82		50	65	135				22.0	☆ ☆
JVR14N101K87□△△	100		60	85	165				28.0	☆ ☆
JVR14N121K87□△△	120		75	100	200				32.0	☆ ☆
JVR14N151K87□△△	150		95	125	250				44.0	☆ ☆
JVR14N181K87□△△	180		115	150	300				52.0	☆ ☆
JVR14N201K87□△△	200		130	170	340				57.0	☆ ☆ ☆ ☆
JVR14N221K87□△△	220		140	180	360	62.0	☆ ☆ ☆ ☆			
JVR14N241K87□△△	240		150	200	395	67.0	☆ ☆ ☆ ☆			
JVR14N271K87□△△	270	175	225	455	79.0	☆ ☆ ☆ ☆				
JVR14N301K87□△△	300	195	250	505	84.0	☆ ☆ ☆ ☆				
JVR14N331K87□△△	330	210	275	550	92.0	☆ ☆ ☆ ☆				
JVR14N361K87□△△	360	230	300	595	104.0	☆ ☆ ☆ ☆				
JVR14N391K87□△△	390	250	320	650	120.0	☆ ☆ ☆ ☆				
JVR14N431K87□△△	430	275	350	710	132.0	☆ ☆ ☆ ☆				
JVR14N471K87□△△	470	300	385	775	140.0	☆ ☆ ☆ ☆				
JVR14N511K87□△△	510	320	418	842	148.0	☆ ☆ ☆ ☆				
JVR14N561K87□△△	560	350	460	920	156.0	☆ ☆ ☆ ☆				
JVR14N621K87□△△	620	385	505	1025	164.0	☆ ☆ ☆ ☆				
JVR14N681K87□△△	680	420	560	1120	172.0	☆ ☆ ☆ ☆				
JVR14N751K87□△△	750	460	615	1240	180.0	☆ ☆ ☆ ☆				
JVR14N781K87□△△	780	485	640	1290	184.0	☆ ☆ ☆ ☆				
JVR14N821K87□△△	820	510	670	1355	188.0	☆ ☆ ☆ ☆				
JVR14N911K87□△△	910	550	745	1500	204.0	☆ ☆ ☆ ☆				
JVR14N102K87□△△	1000	625	825	1650	224.0	☆ ☆ ☆ ☆				
JVR14N112K87□△△	1100	680	895	1815	248.0	☆ ☆ ☆ ☆				
JVR14N182K87□△△	1800	1000	1465	2970	348.0					

1) The clamping voltage form 180M to 680K are tested with current 10A.

For application required ratings not shown, contact application engineering.

□ :Lead Style (please refer to page 126)

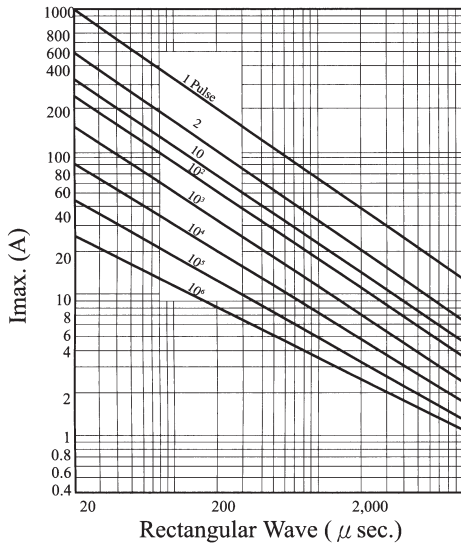
Y: vertical kink (standard)

P: straight leads

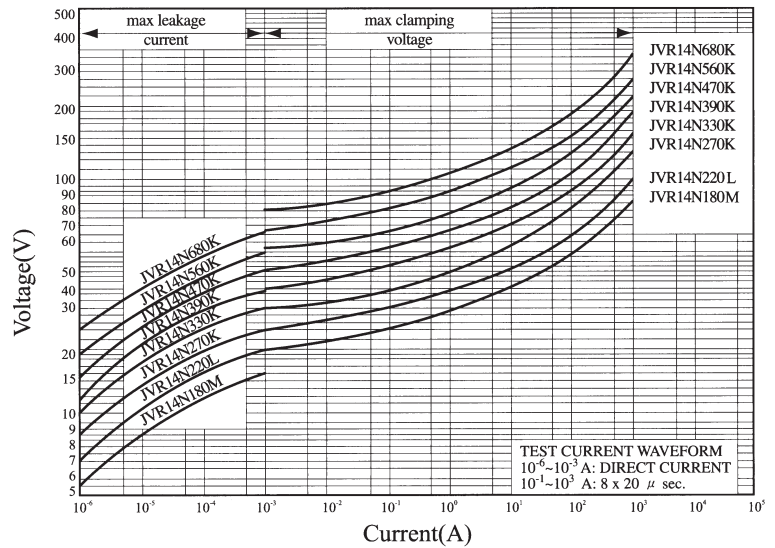
△△:Lead Length / Packing Method (Please refer to page 125 for the detail codes)

PULSE LIFETIME RATINGS-14Φ V-I CHARACTERISTIC CURVE-14Φ

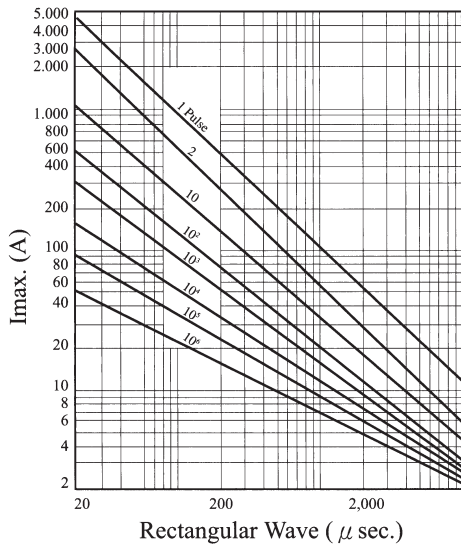
JVR14N180M~JVR14N680K



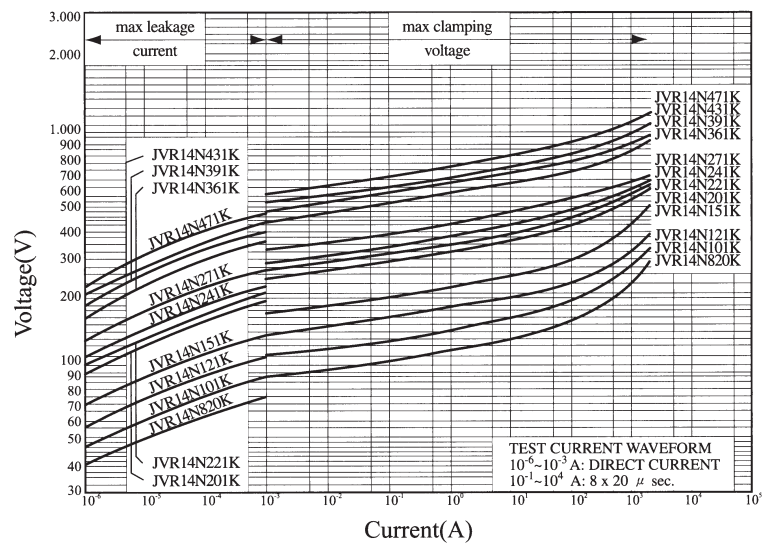
JVR14N180M~JVR14N680K



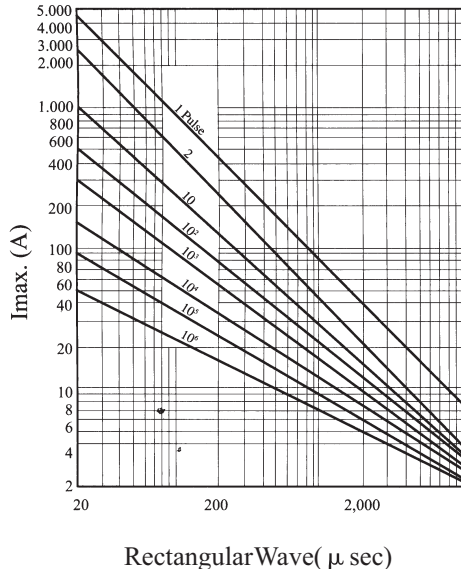
JVR14N820K~JVR14N471K



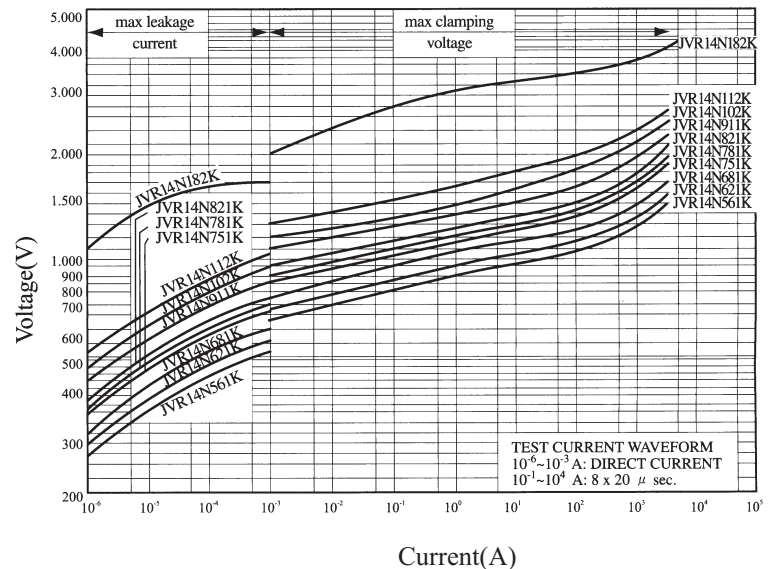
JVR14N820K~JVR14N471K



JVR14N511K~JVR14N182K



JVR14N561K~JVR14N182K



RATING AND CHARACTERISTICS

Φ20mm

Part Number	Varistor Voltage V@1mA		Maximum Allowable Voltage		Maximum Clamping Voltage	Withstanding Surge Current (8/20 μ s)		Rated Wattage (W)	Energy (10/1000 μ s) (J)	Certification (ref to page 127)
	DC (V)	Tolerance	ACrms (V)	DC (V)	V@100A (V)	1 Time (A)	2 Time (A)			
JVR20N180M11□△△	18	±20%	11	14	• ¹⁾ 36	2000	1000	0.2	7.0	☆ ☆
JVR20N220M11□△△	22		14	18	• 43				8.0	☆ ☆
JVR20N270M11□△△	27		17	22	• 53				10.0	☆ ☆
JVR20N330M11□△△	33		20	26	• 65				12.0	☆ ☆
JVR20N390L11□△△	39	±15%	25	31	• 77	2000	1000	0.2	14.0	☆ ☆
JVR20N470L11□△△	47		30	38	• 93				17.0	☆ ☆
JVR20N560L11□△△	56		35	45	• 110				20.0	☆ ☆
JVR20N680L11□△△	68		40	56	• 135				24.0	☆ ☆
JVR20N820K11□△△	82	±10%	50	65	135	6500	4000	1.0	44.0	☆ ☆
JVR20N101K11□△△	100		60	85	165				56.0	☆ ☆
JVR20N121K11□△△	120		75	100	200				64.0	☆ ☆
JVR20N151K11□△△	150		95	125	250				88.0	☆ ☆
JVR20N181K11□△△	180		115	150	300				104.0	☆ ☆
JVR20N201K11□△△	200		130	170	340				114.0	☆ ☆ ☆ ☆
JVR20N221K11□△△	220		140	180	360				124.0	☆ ☆ ☆ ☆
JVR20N241K11□△△	240		150	200	395				134.0	☆ ☆ ☆ ☆
JVR20N271K11□△△	270		175	225	455				158.0	☆ ☆ ☆ ☆
JVR20N301K11□△△	300		195	250	505				168.0	☆ ☆ ☆ ☆
JVR20N331K11□△△	330		210	275	550				184.0	☆ ☆ ☆ ☆
JVR20N361K11□△△	360		230	300	595				208.0	☆ ☆ ☆ ☆
JVR20N391K11□△△	390		250	320	650				240.0	☆ ☆ ☆ ☆
JVR20N431K11□△△	430		275	350	710				264.0	☆ ☆ ☆ ☆
JVR20N471K11□△△	470		300	385	775				280.0	☆ ☆ ☆ ☆
JVR20N511K11□△△	510		320	418	842				296.0	☆ ☆ ☆ ☆
JVR20N561K11□△△	560		350	460	920				312.0	☆ ☆ ☆ ☆
JVR20N621K11□△△	620		385	505	1025				328.0	☆ ☆ ☆ ☆
JVR20N681K11□△△	680		420	560	1120				344.0	☆ ☆ ☆ ☆
JVR20N751K11□△△	750		460	615	1240				360.0	☆ ☆ ☆ ☆
JVR20N781K11□△△	780		485	640	1290				368.0	☆ ☆ ☆ ☆
JVR20N821K11□△△	820		510	670	1355				376.0	☆ ☆ ☆ ☆
JVR20N911K11□△△	910		550	745	1500				408.0	☆ ☆ ☆ ☆
JVR20N102K11□△△	1000		625	825	1650				448.0	☆ ☆ ☆ ☆
JVR20N112K11□△△	1100	680	895	1815	496.0	☆ ☆ ☆ ☆				
JVR20N182K11□△△	1800	1000	1465	2970	695.0					

1) The clamping voltage form 180M to 680K are tested with current 20A.

For application required ratings not shown, contact application engineering.

□ :Lead Style (please refer to page 126)

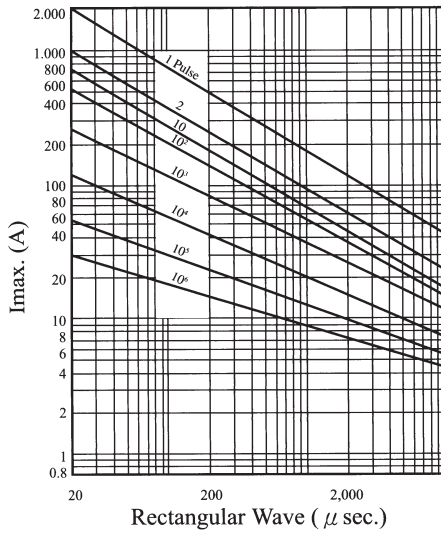
Y: vertical kink (standard)

P: straight leads

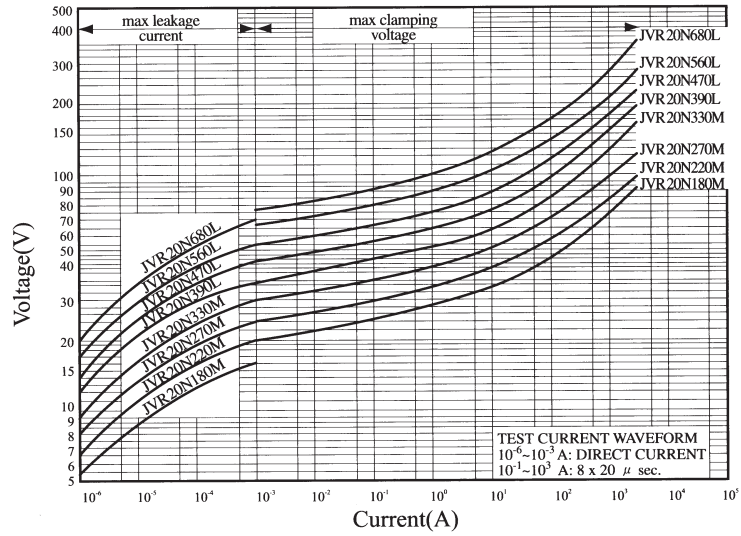
△△:Lead Length / Packing Method (Please refer to page 125 for the detail codes)

PULSE LIFETIME RATINGS-20Φ V-I CHARACTERISTIC CURVE-20Φ

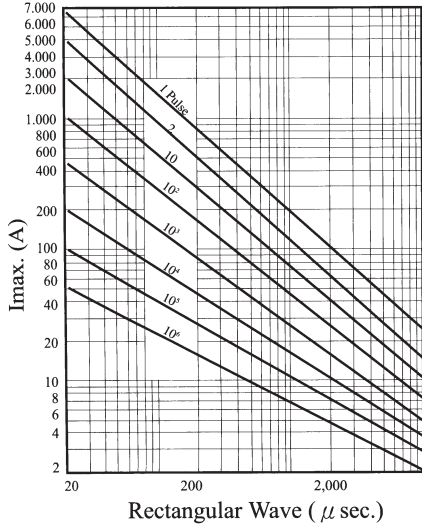
JVR20N180M ~ JVR20N680L



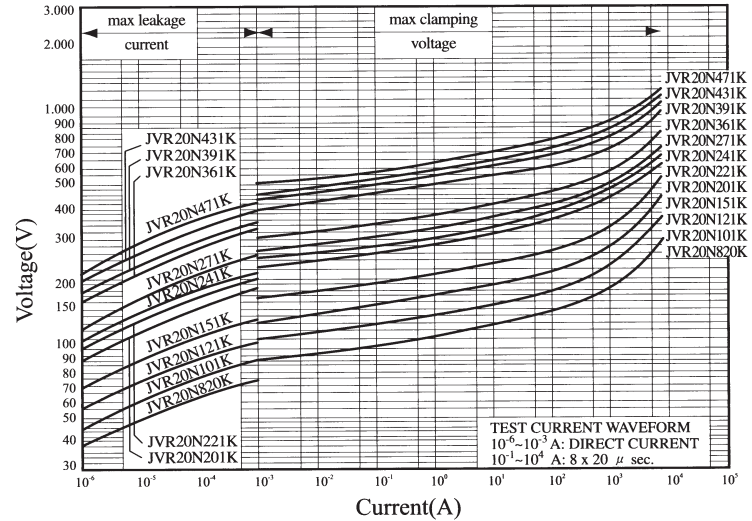
JVR20N180M~JVR20N680L



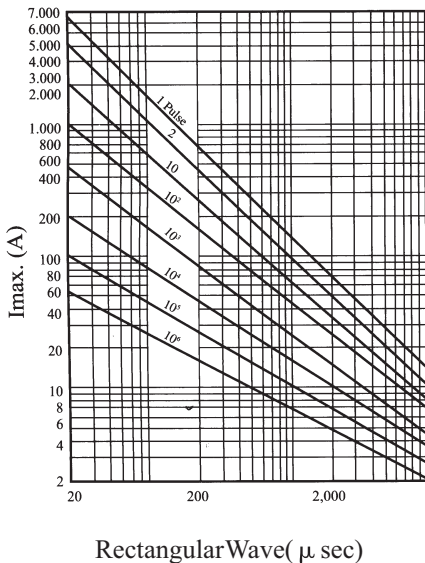
JVR20N820K~JVR20N471K



JVR20N820K~JVR20N471K



JVR20N511K~JVR20N182K



JVR20N561K~JVR20N182K

