RATING AND CHARACTERISTICS

Standard Varistors - 5mm

Ordering Code	Varistor Voltage at 0.1mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇05N180M65□△△	18	±20%	11	14	40	1	100	0.1	0.01	0.6	☆ ★ ★
JV◇05N220L65□△△	22	±15%	14	18	48					0.7	☆ ★ ★
JV◇05N270K65□△△	27	±10%	17	22	60					0.9	☆ ★ ★
JV◇05N330K65□△△	33		20	26	73					1.1	☆ ★ ★
JV◇05N390K65□△△	39		25	31	86					1.2	☆ ★ ★
JV◇05N470K65□△△	47		30	38	104					1.5	☆ ★ ★
JV◇05N560K65□△△	56		35	45	123					1.8	☆ ★ ★
JV◇05N680K65□△△	68		40	56	150					2.1	☆ ★ ★
JV◇05N820K65□△△	82		50	65	145	5	400	0.1	0.1	2.8	☆ ★ ★
JV◇05N101K65□△△	100		60	85	175					3.5	☆ ★ ★
JV◇05N121K65□△△	120		75	100	210					4	☆ ★ ★
JV◇05N151K65□△△	150		95	125	260					5.5	☆ ★ ★
JV◇05N181K65□△△	180		115	150	320					6.5	☆ ★ ★
JV◇05N201K65□△△	200		130	170	355					7.1	☆ ★ ★
JV◇05N221K65□△△	220		140	180	380					7.8	☆ ★ ★
JV◇05N241K65□△△	240		150	200	415					8.4	☆ ★ ★
JV◇05N271K65□△△	270		175	225	475					9.9	☆ ★ ★
JV◇ 05N301K65□△△	300		195	250	525					10.5	☆ ★ ★
JV◇05N331K65□△△	330		210	275	575					11.5	☆ ★ ★
JV◇05N361K65□△△	360		230	300	620					13	☆ ★ ★
JV◇05N391K65□△△	390		250	320	675					15	☆ ★ ★
JV◇05N431K65□△△	430		275	350	745					16.5	☆ ★ ★
JV◇05N471K65□△△	470		300	385	810					17.5	☆ ★ ★
JV◇05N511K65□△△	510		320	418	880					18.5	☆ ★ ★
JV◇05N561K65□△△	560		350	460	940					19.5	☆ ★ ★
JV◇05N621K65□△△	620		385	505	1050					20.5	☆ ★ ★
JV◇05N681K65□△△	680		420	560	1150					21.5	☆ ★ ★
JV◇05N751K65□△△	750		460	615	1290					22.5	☆ ★ ★

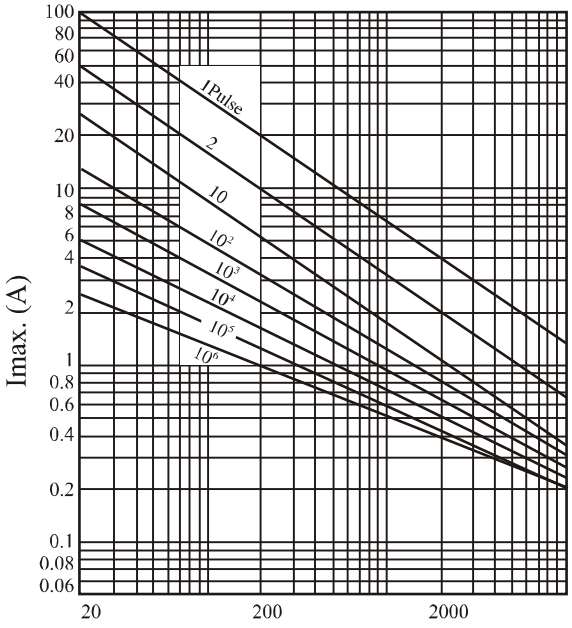
◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

Application notes for UL,CUL,VDE and CQC reconized related standards

Standard N0.	UL	CUL	VDE	CQC	
	UL 1449 4TH Edition	CSA 22.2 N0. 8-13	IEC61051-1 IEC61051-2 IEC61051-2-2	GB/T1093-1997 GB/T10194-1997	GB4943.1-2011 GB/T1093-1997 GB/T10194-1997 GB8898-2011
Title	Transient Voltage Surge Suppressors	Transient Voltage Surge Suppressors	Varistors for use in electronic equipment	Engaged in Voluntary Product Certification	
File No.	VZCA2.E325508	VZCA8.E325508	1900600-4790-0002/209089	CQC07001019159/9161/9162/9163/9164	
Symbols	☆		★	✯	✪

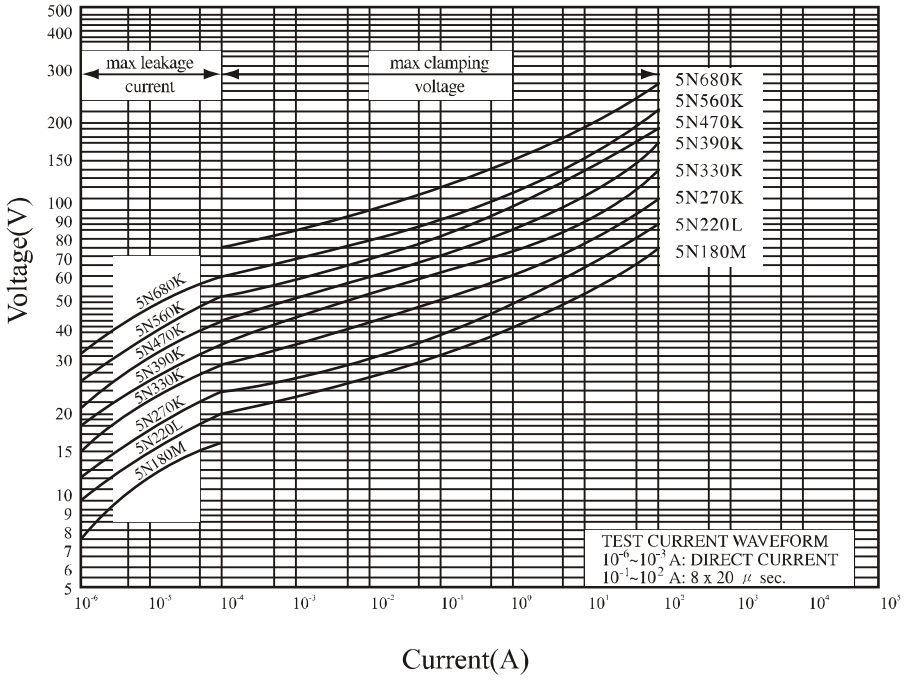
PULSE LIFETIME RATINGS - 5mm

5N180M~680K

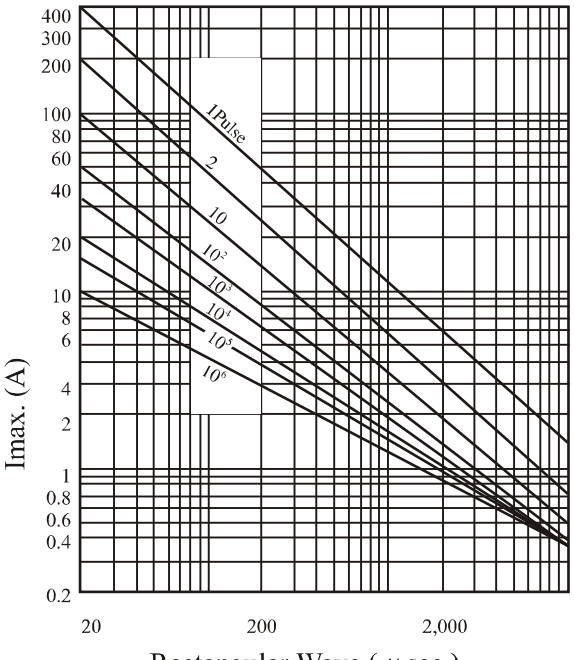


V-I CHARACTERISTIC CURVE - 5mm

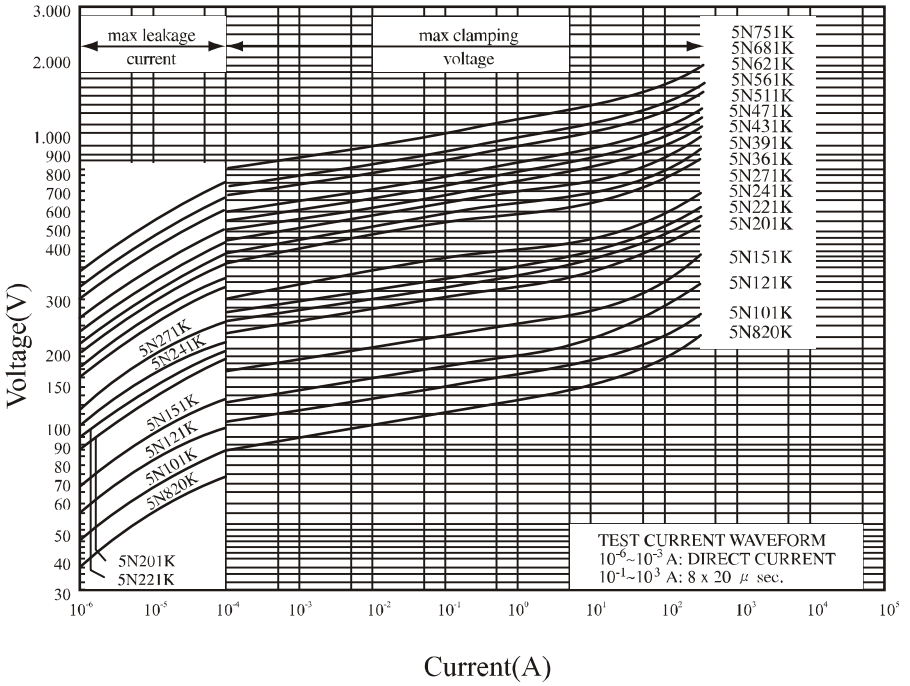
5N180M~680K



5N820K~751K



5N820K~751K



RATING AND CHARATERISTICS

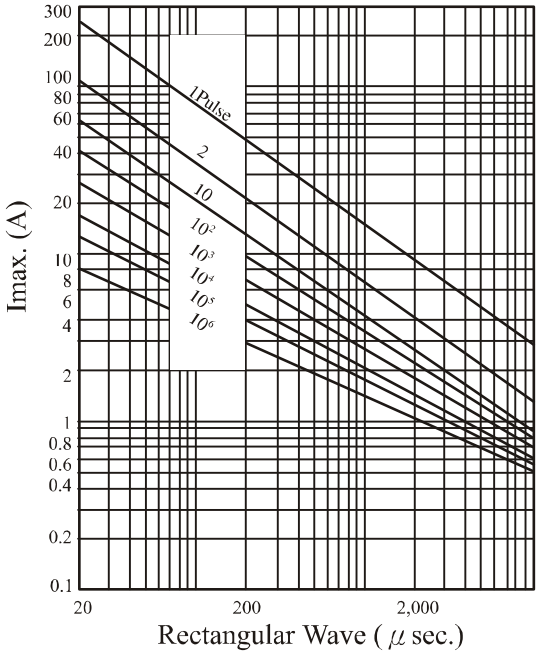
Standard Varistors - 7mm

Ordering Code	Varistor Voltage at 1 mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇07N180M65□△△	18	±20%	11	14	36	2.5	250	0.2	0.02	1.2	☆★★
JV◇07N220L65□△△	22	±15%	14	18	43					1.4	☆★★
JV◇07N270K65□△△	27	±10%	17	22	53					1.7	☆★★
JV◇07N330K65□△△	33		20	26	65					2.2	☆★★
JV◇07N390K65□△△	39		25	31	77					2.4	☆★★
JV◇07N470K65□△△	47		30	38	93					3.0	☆★★
JV◇07N560K65□△△	56		35	45	110					3.5	☆★★
JV◇07N680K65□△△	68		40	56	135					4.3	☆★★
JV◇07N820K65□△△	82		50	65	135	10	1200	0.5	0.25	5.5	☆★★
JV◇07N101K65□△△	100		60	85	165					7.0	☆★★
JV◇07N121K65□△△	120		75	100	200					8.0	☆★★
JV◇07N151K65□△△	150		95	125	250					11.0	☆★★
JV◇07N181K65□△△	180		115	150	300					13.0	☆★★
JV◇07N201K65□△△	200		130	170	340					14.3	☆★★
JV◇07N221K65□△△	220		140	180	360					15.5	☆★★
JV◇07N241K65□△△	240		150	200	395					16.8	☆★★
JV◇07N271K65□△△	270		175	225	455					19.8	☆★★
JV◇07N301K65□△△	300		195	250	505					21.0	☆★★
JV◇07N331K65□△△	330		210	275	550					23.0	☆★★
JV◇07N361K65□△△	360		230	300	595					26.0	☆★★
JV◇07N391K65□△△	390		250	320	650					30.0	☆★★
JV◇07N431K65□△△	430		275	350	710					33.0	☆★★
JV◇07N471K65□△△	470		300	385	775					35.0	☆★★
JV◇07N511K65□△△	510		320	418	842					37.0	☆★★
JV◇07N561K65□△△	560		350	460	920					39.0	☆★★
JV◇07N621K65□△△	620		385	505	1025					41.0	☆★★
JV◇07N681K65□△△	680		420	560	1120					43.0	☆★★
JV◇07N751K65□△△	750		460	615	1240					45.0	☆★★
JV◇07N781k65□△△	780		485	640	1290					46.0	☆★★
JV◇07N821k65□△△	820		510	670	1355					47.0	☆★★

◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

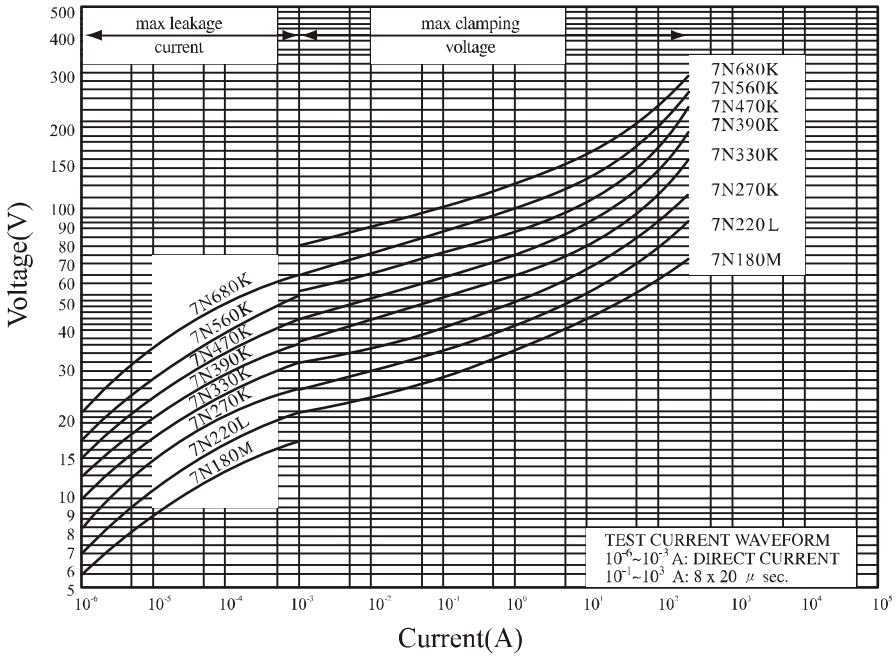
PULSE LIFETIME RATINGS -7mm

7N180M~680K

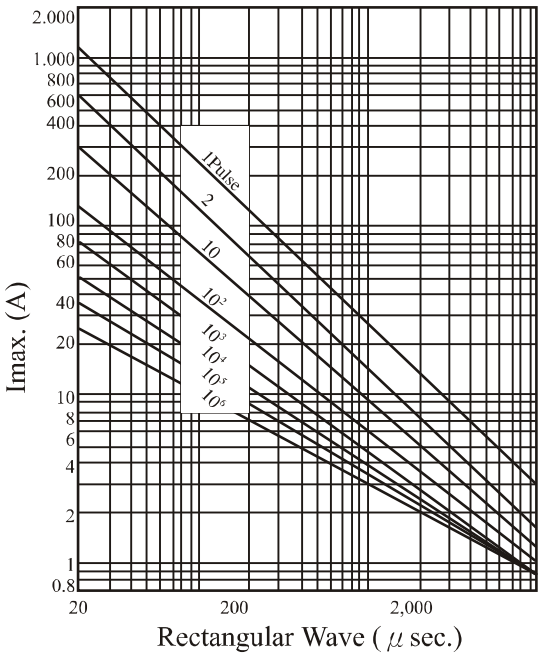


V-I CHARACTERISTIC CURVE -7mm

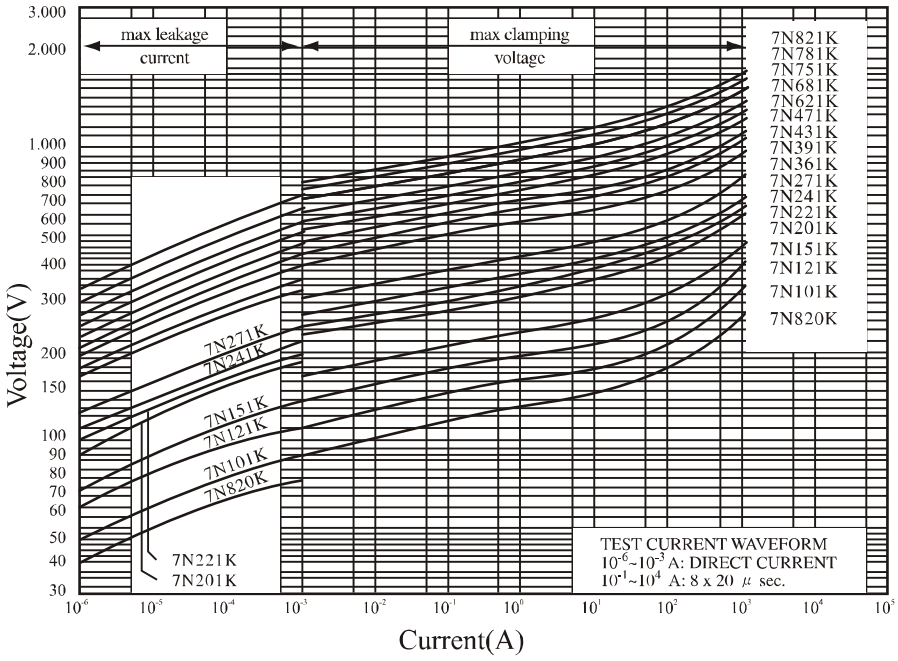
7N180M~680K



7N820K~821K



7N820K~821K



RATING AND CHARATERISTICS

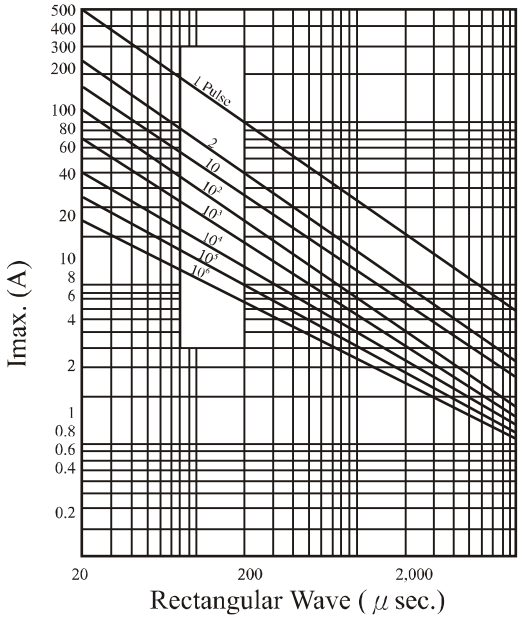
Standard Varistors - 10mm

Ordering Code	Varistor Voltage at 1 mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇10N180M87□△△	18	±20%	11	14	36	5	500	0.3	0.05	2.4	☆★★
JV◇10N220L87□△△	22	±15%	14	18	43					2.7	☆★★
JV◇10N270K87□△△	27	±10%	17	22	53					3.5	☆★★
JV◇10N330K87□△△	33		20	26	65					4.4	☆★★
JV◇10N390K87□△△	39		25	31	77					4.7	☆★★
JV◇10N470K87□△△	47		30	38	93					6.0	☆★★
JV◇10N560K87□△△	56		35	45	110					7.0	☆★★
JV◇10N680K87□△△	68		40	56	135					8.5	☆★★
JV◇10N820K87□△△	82		50	65	135	25	2500	1.5	0.4	11.0	☆★★
JV◇10N101K87□△△	100		60	85	165					14.0	☆★★
JV◇10N121K87□△△	120		75	100	200					16.0	☆★★
JV◇10N151K87□△△	150		95	125	250					22.0	☆★★
JV◇10N181K87□△△	180		115	150	300					26.0	☆★★
JV◇10N201K87□△△	200		130	170	340					28.5	☆★✪
JV◇10N221K87□△△	220		140	180	360					31.0	☆★✪
JV◇10N241K87□△△	240		150	200	395					33.5	☆★✪
JV◇10N271K87□△△	270		175	225	455					39.5	☆★✪
JV◇10N301K87□△△	300		195	250	505					42.0	☆★✪
JV◇10N331K87□△△	330		210	275	550					46.0	☆★✪
JV◇10N361K87□△△	360		230	300	595					52.0	☆★✪
JV◇10N391K87□△△	390		250	320	650					60.0	☆★✪
JV◇10N431K87□△△	430		275	350	710					66.0	☆★✪
JV◇10N471K87□△△	470		300	385	775					70.0	☆★✪
JV◇10N511K87□△△	510		320	418	842					74.0	☆★✪
JV◇10N561K87□△△	560		350	460	920					78.0	☆★✪
JV◇10N621K87□△△	620		385	505	1025					82.0	☆★✪
JV◇10N681K87□△△	680		420	560	1120					86.0	☆★✪
JV◇10N751K87□△△	750		460	615	1240					90.0	☆★✪
JV◇10N781K87□△△	780		485	640	1290					92.0	☆★✪
JV◇10N821K87□△△	820		510	670	1355					94.0	☆★✪
JV◇10N911K87□△△	910		550	745	1500					102.0	☆★✪
JV◇10N102K87□△△	1000		625	825	1650					112.0	☆★✪
JV◇10N112K87□△△	1100		680	895	1815					124.0	☆★✪
JV◇10N122K87□△△	1200		720	975	1980					134.0	☆★✪
JV◇10N142K87□△△	1400		825	1135	2310					148.0	☆★✪
JV◇10N162K87□△△	1600		920	1300	2640					162.0	☆★✪
JV◇10N182K87□△△	1800		1000	1465	2970					174.0	☆★✪

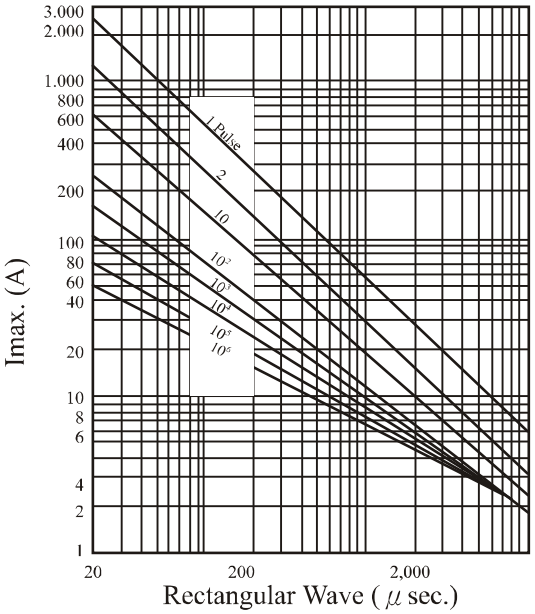
◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

PULSE LIFETIME RATINGS - 10mm

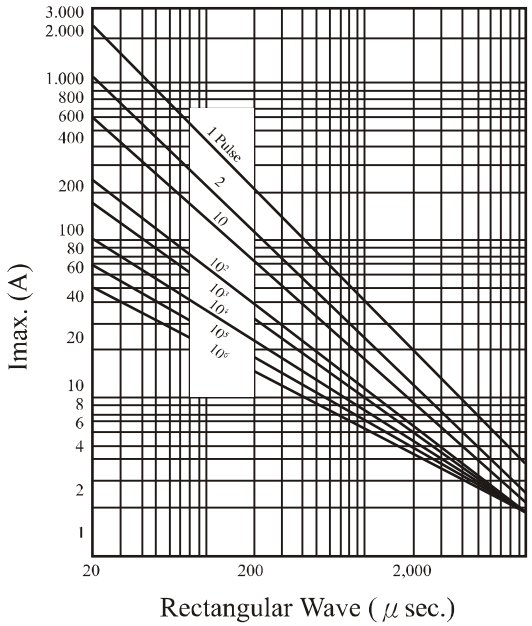
10N180M~680K



10N820K~471K

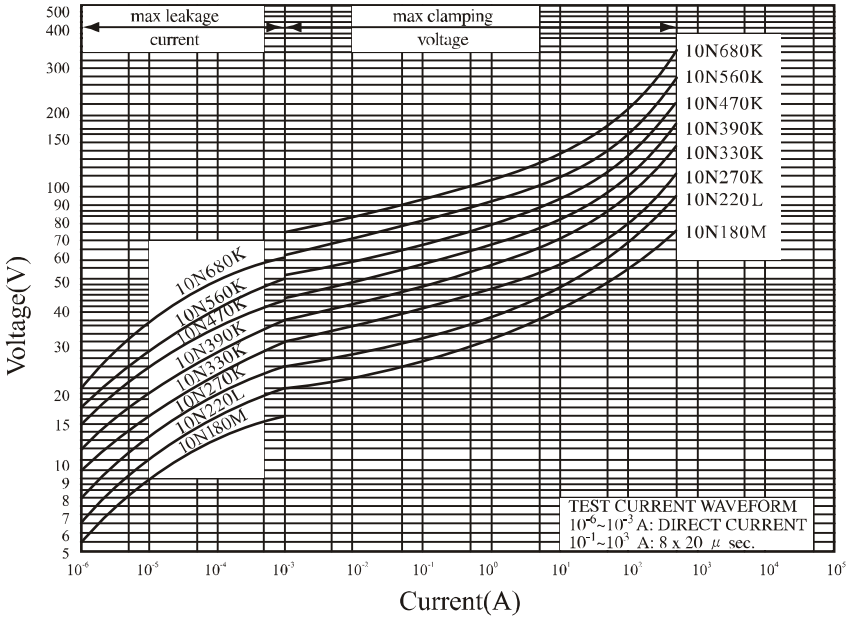


10N511K~182K

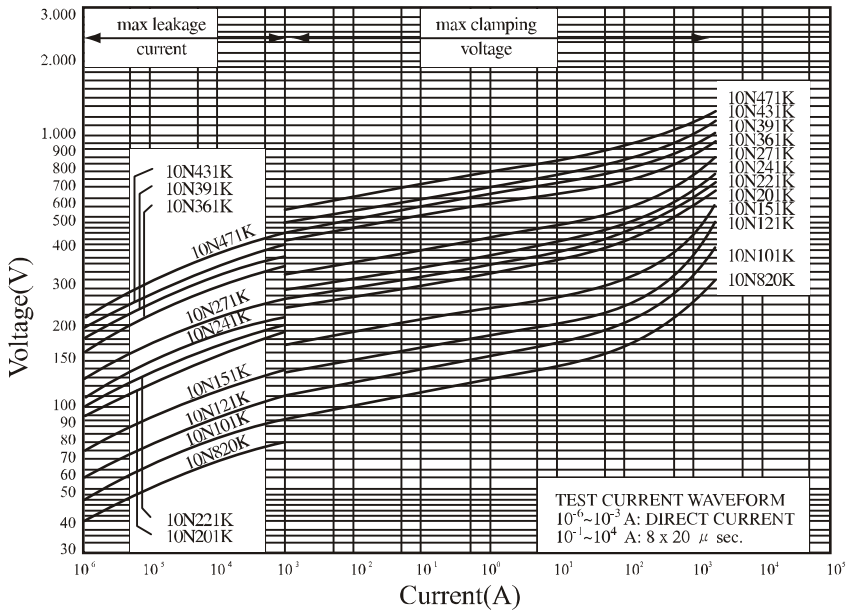


V-I CHARACTERISTIC CURVE - 10mm

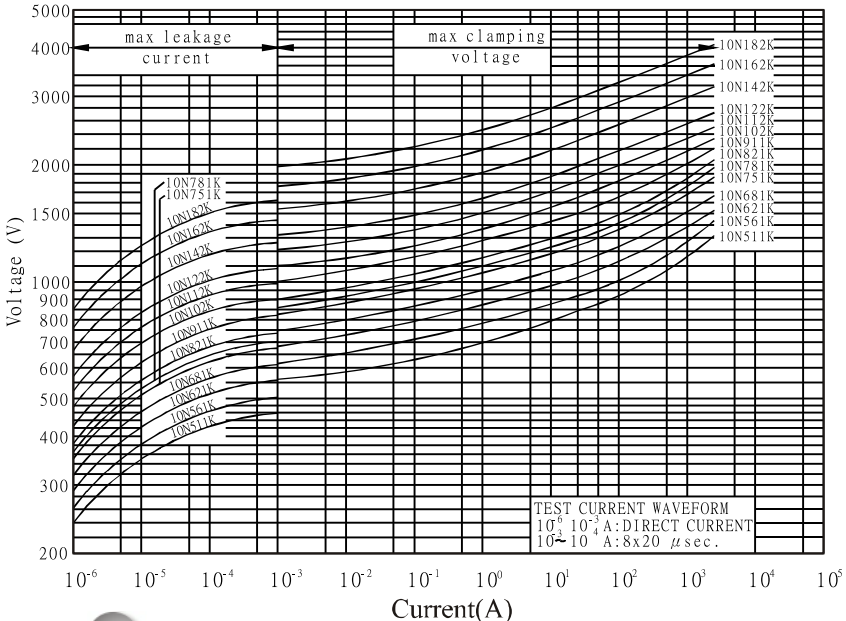
10N180M~680K



10N820K~471K



10N511K~182K



RATING AND CHARATERISTICS

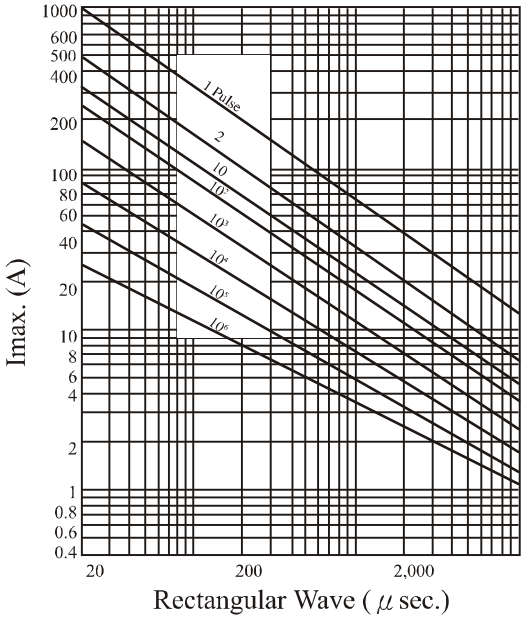
Standard Varistors - 14mm

Ordering Code	Varistor Voltage at 1 mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇14N180M87□△△	18	±20%	11	14	36	10	1000	1	0.1	4.7	☆★★
JV◇14N220L87□△△	22	±15%	14	18	43					5.4	☆★★
JV◇14N270K87□△△	27	±10%	17	22	53					6.9	☆★★
JV◇14N330K87□△△	33		20	26	65					8.8	☆★★
JV◇14N390K87□△△	39		25	31	77					9.4	☆★★
JV◇14N470K87□△△	47		30	38	93					12.0	☆★★
JV◇14N560K87□△△	56		35	45	110					14.0	☆★★
JV◇14N680K87□△△	68		40	56	135					17.0	☆★★
JV◇14N820K87□△△	82		50	65	135	50	4500	3	0.6	22.0	☆★★
JV◇14N101K87□△△	100		60	85	165					28.0	☆★★
JV◇14N121K87□△△	120		75	100	200					32.0	☆★★
JV◇14N151K87□△△	150		95	125	250					44.0	☆★★
JV◇14N181K87□△△	180		115	150	300					52.0	☆★★
JV◇14N201K87□△△	200		130	170	340					57.0	☆★✪
JV◇14N221K87□△△	220		140	180	360					62.0	☆★✪
JV◇14N241K87□△△	240		150	200	395					67.0	☆★✪
JV◇14N271K87□△△	270		175	225	455					79.0	☆★✪
JV◇14N301K87□△△	300		195	250	505					84.0	☆★✪
JV◇14N331K87□△△	330		210	275	550					92.0	☆★✪
JV◇14N361K87□△△	360		230	300	595					104.0	☆★✪
JV◇14N391K87□△△	390		250	320	650					120.0	☆★✪
JV◇14N431K87□△△	430		275	350	710					132.0	☆★✪
JV◇14N471K87□△△	470		300	385	775					140.0	☆★✪
JV◇14N511K87□△△	510		320	418	842					148.0	☆★✪
JV◇14N561K87□△△	560		350	460	920					156.0	☆★✪
JV◇14N621K87□△△	620		385	505	1025					164.0	☆★✪
JV◇14N681K87□△△	680		420	560	1120					172.0	☆★✪
JV◇14N751K87□△△	750		460	615	1240					180.0	☆★✪
JV◇14N781K87□△△	780		485	640	1290					184.0	☆★✪
JV◇14N821K87□△△	820		510	670	1355					188.0	☆★✪
JV◇14N911K87□△△	910		550	745	1500					204.0	☆★✪
JV◇14N102K87□△△	1000		625	825	1650					224.0	☆★✪
JV◇14N112K87□△△	1100		680	895	1815					248.0	☆★✪
JV◇14N122K87□△△	1200		720	975	1980	50	4500	2	0.6	268.0	☆★✪
JV◇14N142K87□△△	1400		825	1135	2310					300.0	☆★✪
JV◇14N162K87□△△	1600		920	1300	2640					328.0	☆★✪
JV◇14N182K87□△△	1800		1000	1465	2970					348.0	☆★✪

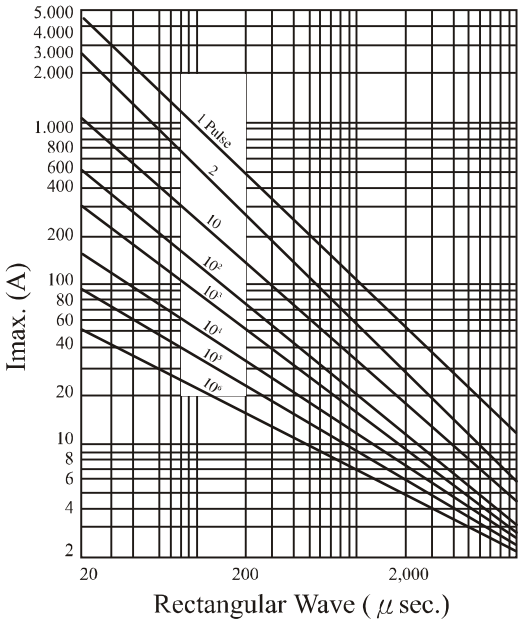
◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

PULSE LIFETIME RATINGS - 14mm

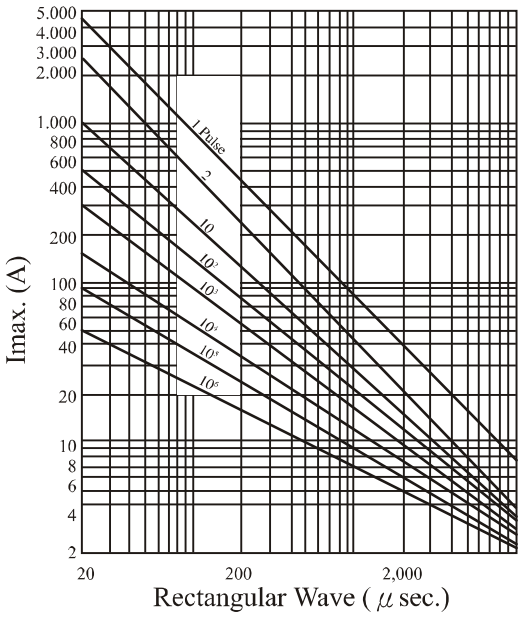
14N180M~680K



14N820K~471K

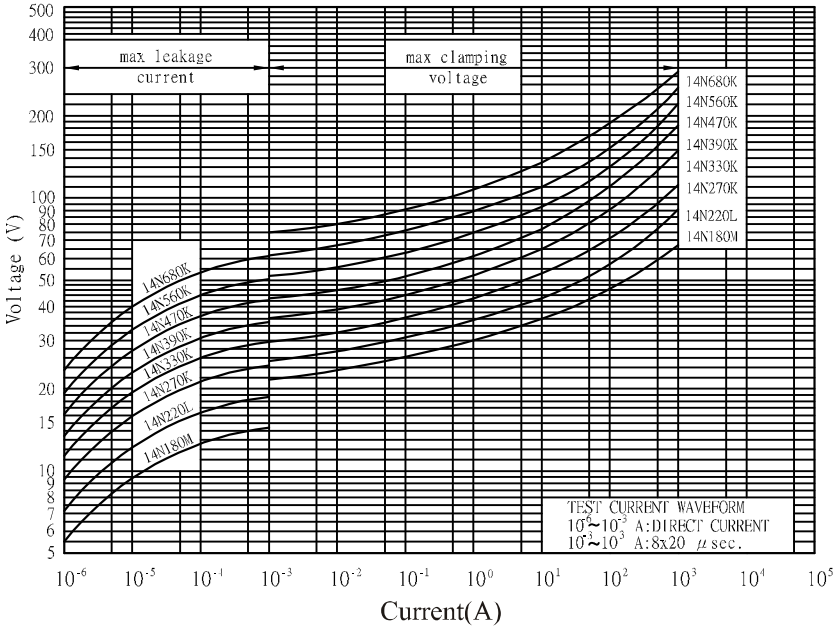


14N511K~182K

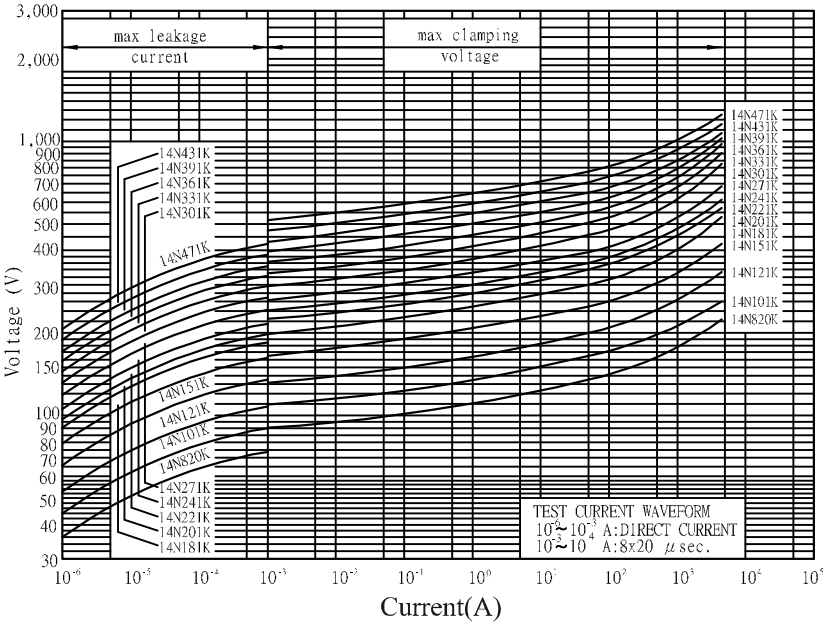


V-I CHARACTERISTIC CURVE - 14mm

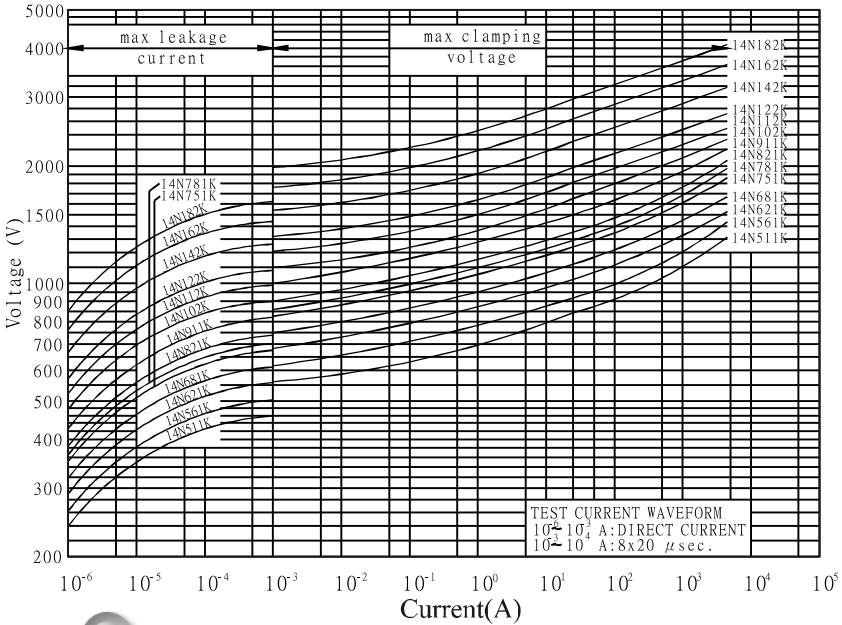
14N180M-680K



14N820K-471K



14N511K~182K



RATING AND CHARATERISTICS

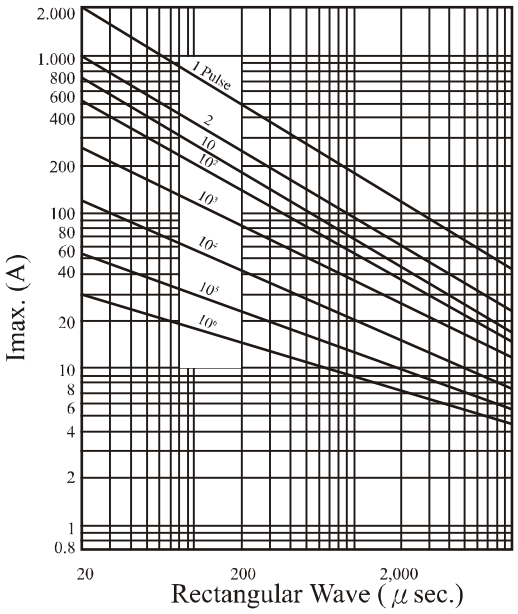
Standard Varistors - 20mm

Ordering Code	Varistor Voltage at 1 mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇20N220M11□△△	22	±20%	14	18	43	20	2000	2	0.2	8.0	
JV◇20N270M11□△△	27		17	22	53					10.0	
JV◇20N330M11□△△	33		20	26	65					12.0	
JV◇20N390L11□△△	39	±15%	25	31	77					14.0	
JV◇20N470L11□△△	47		30	38	93					17.0	
JV◇20N560L11□△△	56		35	45	110					20.0	
JV◇20N680L11□△△	68		40	56	135					24.0	
JV◇20N820L11□△△	82		50	65	135	100	6500	4	1.0	44.0	
JV◇20N101K11□△△	100	±10%	60	85	165					56.0	
JV◇20N121K11□△△	120		75	100	200					64.0	
JV◇20N151K11□△△	150		95	125	250					88.0	
JV◇20N181K11□△△	180		115	150	300					104.0	
JV◇20N201K11□△△	200		130	170	340					114.0	
JV◇20N221K11□△△	220		140	180	360					124.0	
JV◇20N241K11□△△	240		150	200	395					134.0	
JV◇20N271K11□△△	270		175	225	455					158.0	
JV◇20N301K11□△△	300		195	250	505					168.0	
JV◇20N331K11□△△	330		210	275	550					184.0	
JV◇20N361K11□△△	360		230	300	595					208.0	
JV◇20N391K11□△△	390		250	320	650					240.0	
JV◇20N431K11□△△	430		275	350	710					264.0	
JV◇20N471K11□△△	470		300	385	775					280.0	
JV◇20N511K11□△△	510		320	418	842					296.0	
JV◇20N561K11□△△	560		350	460	920					312.0	
JV◇20N621K11□△△	620		385	505	1025					328.0	
JV◇20N681K11□△△	680		420	560	1120					344.0	
JV◇20N751K11□△△	750		460	615	1240					360.0	
JV◇20N781K11□△△	780		485	640	1290					368.0	
JV◇20N821K11□△△	820		510	670	1355					376.0	
JV◇20N911K11□△△	910		550	745	1500					408.0	
JV◇20N102K11□△△	1000		625	825	1650					448.0	
JV◇20N112K11□△△	1100		680	895	1815					496.0	
JV◇20N122K11□△△	1200		720	975	1980	100	6500	3	1.0	528.0	
JV◇20N142K11□△△	1400		825	1135	2310					596.0	
JV◇20N162K11□△△	1600		920	1300	2640					656.0	
JV◇20N182K11□△△	1800		1000	1465	2970					695.0	

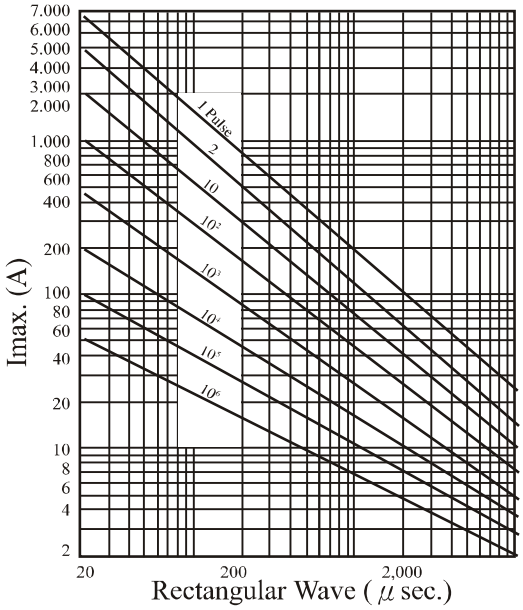
◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

PULSE LIFETIME RATINGS - 20mm

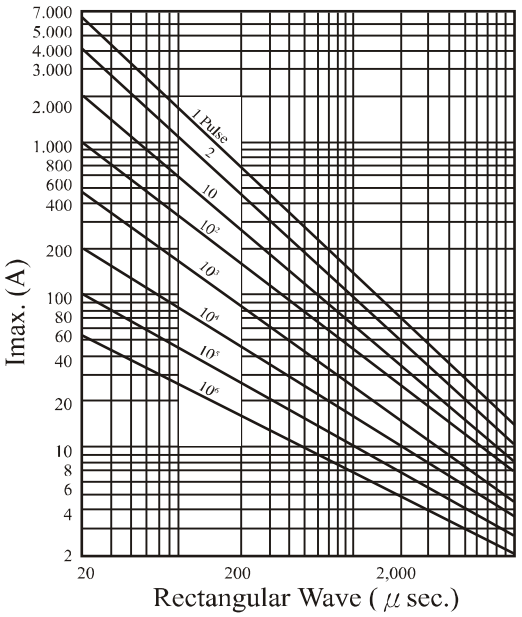
20N220M ~ 680L



20N101K ~ 471K

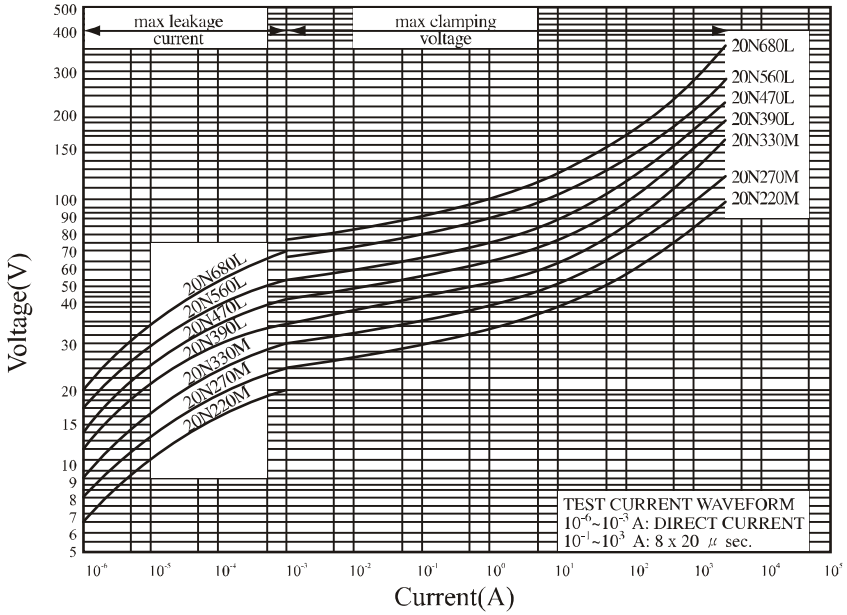


20N511K~182K

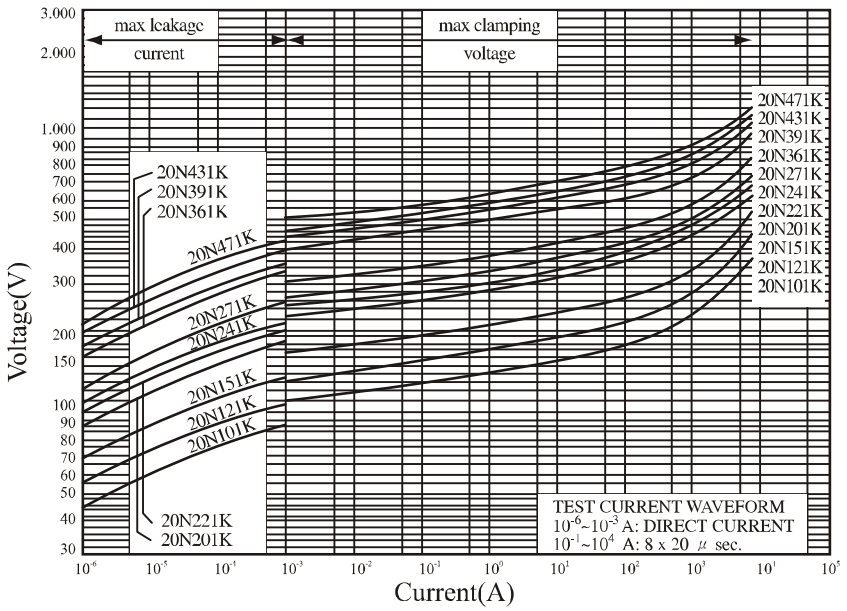


V-I CHARACTERISTIC CURVE - 20mm

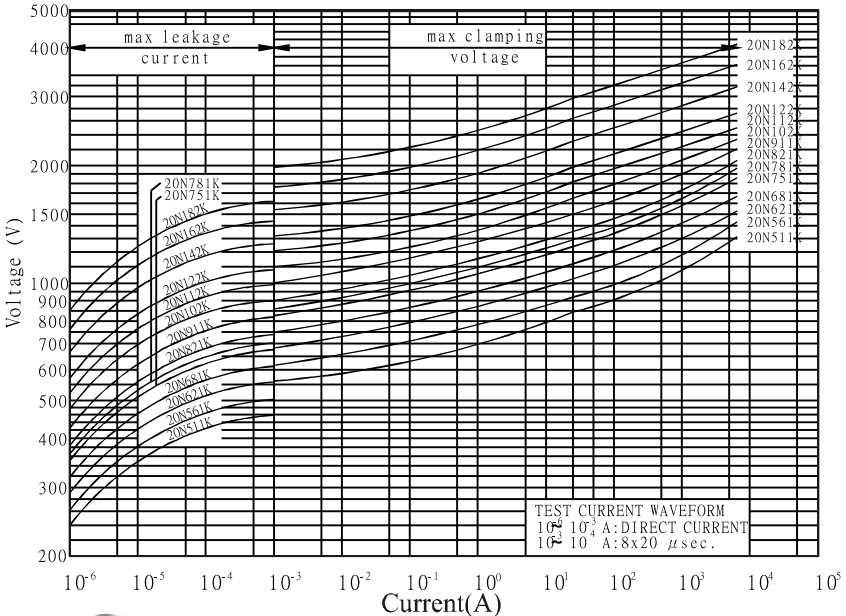
20N220M ~ 680L



20N101K ~ 471K



20N511K~182K



RATING AND CHARATERISTICS

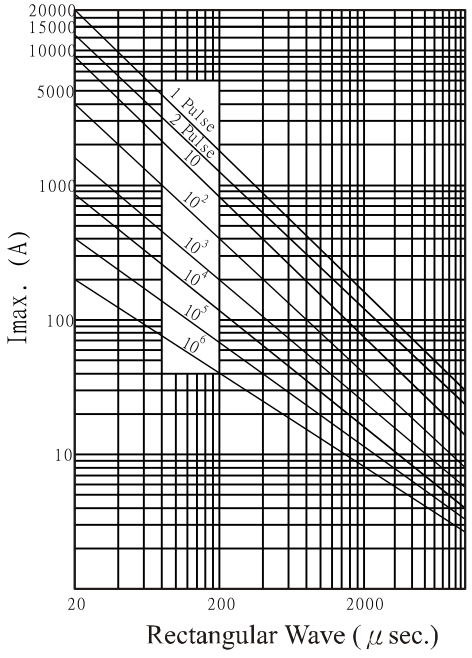
Standard Varistors - 25mm

Ordering Code	Varistor Voltage at 1 mA		Maximum Allowable Voltage		Maximum Clamping Voltage		Withstanding Surge Current (8/20us)	Nominal Discharge Current (8/20us)	Rated Wattage	Energy (10/1000us)	Certification (ref to p.20)
	DC (V)	Tolerance	AC rms (V)	DC (V)	V@ ic (V)	ic (A)	1 Time (A)	In (kA)	(W)	(J)	
JV◇25N201K11□△△	200	±10%	130	170	355	150	18000	5	1.2	190	☆ ★
JV◇25N221K11□△△	220		140	180	380				1.2	205	☆ ★
JV◇25N241K11□△△	240		150	200	415				1.2	225	☆ ★
JV◇25N271K11□△△	270		175	225	445				1.2	255	☆ ★
JV◇25N301K11□△△	300		195	250	495				1.2	280	☆ ★
JV◇25N331K11□△△	330		210	275	545				1.2	305	☆ ★
JV◇25N361K11□△△	360		230	300	595				1.2	330	☆ ★
JV◇25N391K11□△△	390		250	320	645				1.2	360	☆ ★
JV◇25N431K11□△△	430		275	350	710				1.2	380	☆ ★
JV◇25N471K11□△△	470		300	385	775				1.2	400	☆ ★
JV◇25N511K11□△△	510		320	418	840				1.2	420	☆ ★
JV◇25N561K11□△△	560		350	460	925				1.2	440	☆ ★
JV◇25N621K11□△△	620		385	505	1025				1.2	460	☆ ★
JV◇25N681K11□△△	680		420	560	1125				1.2	480	☆ ★
JV◇25N751K11□△△	750		460	615	1240				1.2	520	☆ ★
JV◇25N781K11□△△	780		485	640	1290				1.2	540	☆ ★
JV◇25N821K11□△△	820		510	670	1360				1.2	570	☆ ★
JV◇25N911K11□△△	910		550	745	1500				1.2	620	☆ ★

◇: R / H = EPOXY Coating & Operating Temperature 85°C
□: Lead Style (Y = Vertical Kink , P = Straight)
△△: Lead Length & Packing

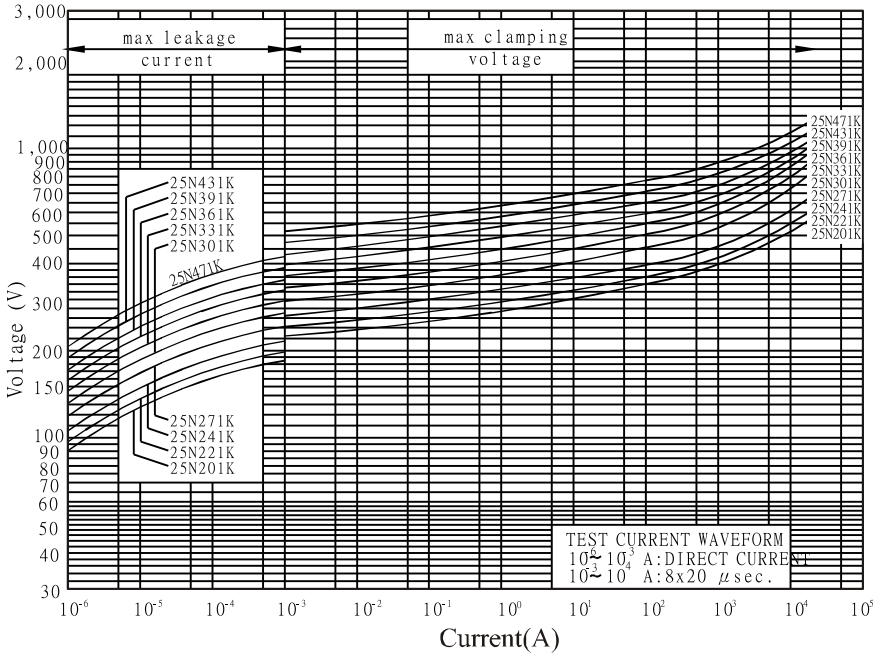
PULSE LIFETIME RATINGS-25mm

25N201K~471K

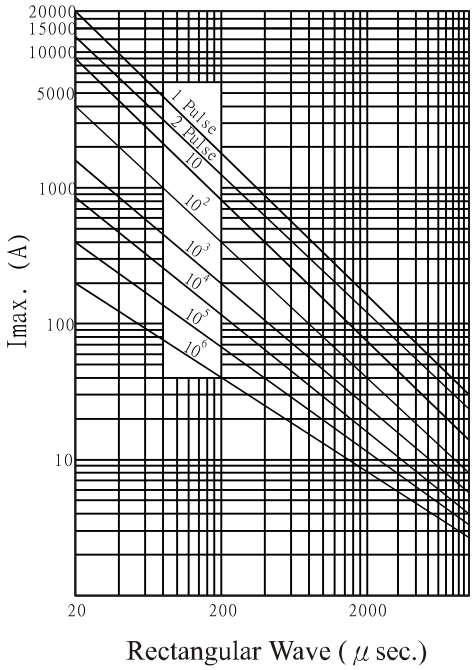


V-I CHARACTERISTIC CURVE -25mm

25N201K-471K



25N511K~911K



25N511K~911K