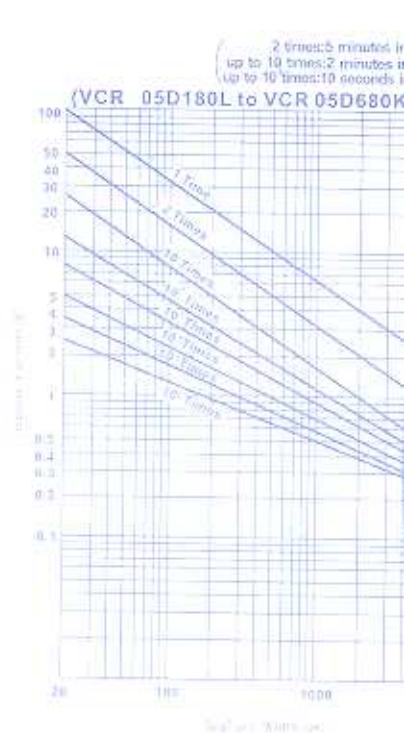
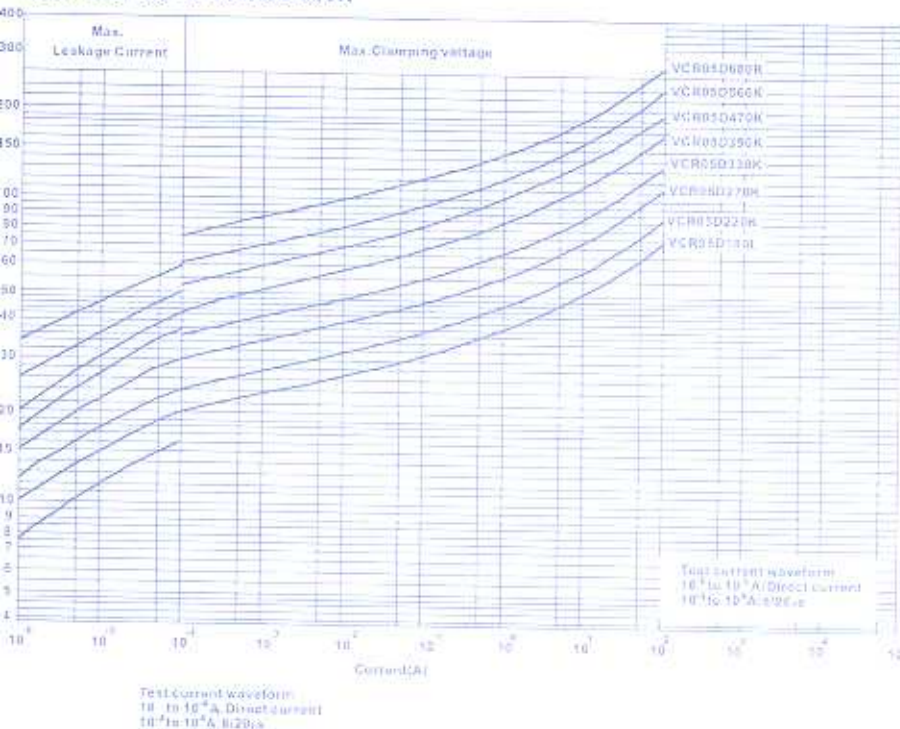
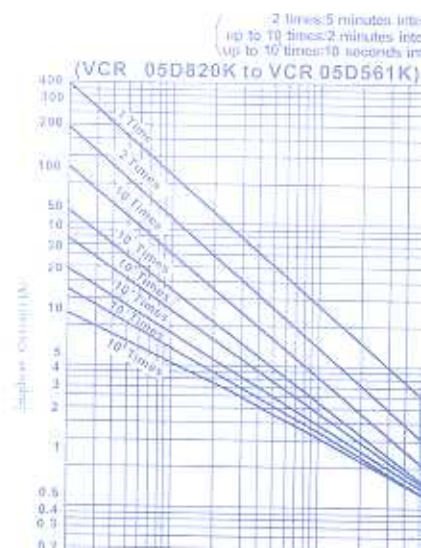
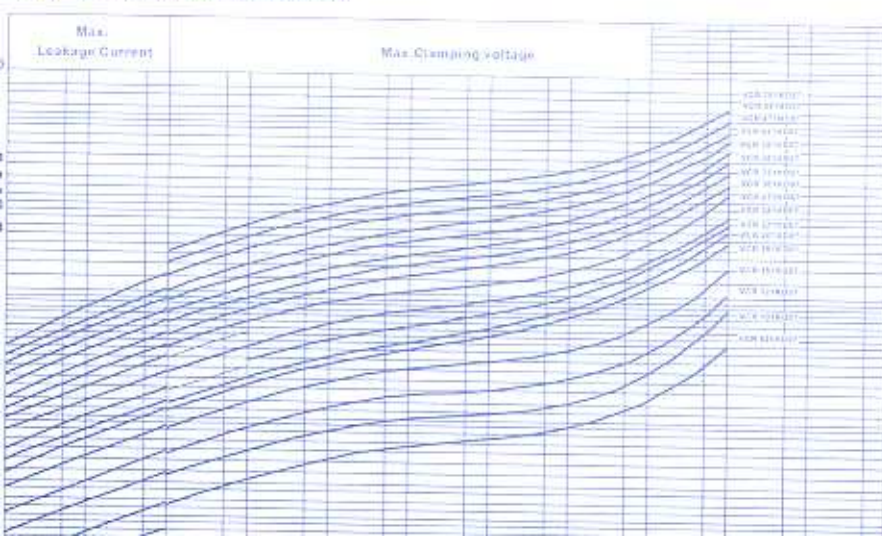


Part Number	Maximum Allowable Voltage		Varistor Voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)(A)		Maximum Energy (JOULE)		Rated Power	Typical Capacitance (Reference)	 	
	Acrms (V)	DC(V)	0.1mA	VC(V)	IP(A)	1 Time	2 Times	10/1000 μs	2ms	W	@ 1 KHz(pF)		
VCR-05D180L	10	14	18(14-21.6)	40	1	100	50	0.4	0.3	0.01	1400	*	
VCR-05D220K	14	18	22(20-24)	48	1	100	50	0.5	0.4	0.01	1150	*	
VCR-05D270K	17	22	27(24-30)	60	1	100	60	0.6	0.5	0.01	930	*	
VCR-05D330K	20	26	33(30-36)	73	1	100	50	0.8	0.6	0.01	760	*	
VCR-05D390K	25	31	39(35-43)	86	1	100	50	0.9	0.8	0.01	640	*	
VCR-05D470K	30	38	47(42-52)	104	1	100	50	1.1	1.0	0.01	530	*	
VCR-05D560K	35	45	56(50-62)	123	1	100	50	1.3	1.0	0.01	450	*	
VCR-05D680K	40	56	68(61-75)	150	1	100	50	1.6	1.2	0.01	370	*	
VCR-05D820K	50	65	82(74-90)	145	5	400	200	2.6	1.7	0.10	300	*	
VCR-05D101K	60	85	100(90-110)	175	5	400	200	3.0	2.0	0.10	250	*	
VCR-05D121K	75	100	120(108-132)	200	5	400	200	4.0	2.5	0.10	210	*	
VCR-05D151K	95	125	150(135-165)	260	5	400	200	4.8	3.0	0.10	165	*	
VCR-05D181K	115	150	180(162-198)	320	5	400	200	5.9	3.6	0.10	140	*	
VCR-05D201K	130	170	200(185-225)	355	5	400	200	6.5	4.0	0.10	125	*	*
VCR-05D221K	140	180	220(198-242)	380	5	400	200	7.0	4.3	0.10	110	*	*
VCR-05D241K	150	200	240(216-264)	415	5	400	200	8.0	5.0	0.10	100	*	*
VCR-05D271K	175	225	270(243-297)	475	5	400	200	8.5	6.0	0.10	95	*	*
VCR-05D301K	190	250	300(270-330)	520	5	400	200	9.0	6.5	0.10	85	*	*
VCR-05D331K	210	275	330(297-363)	570	5	400	200	9.5	7.0	0.10	75	*	*
VCR-05D361K	230	300	360(324-396)	620	5	400	200	10.0	7.5	0.10	70	*	*
VCR-05D391K	250	320	390(351-429)	675	5	400	200	12.0	8.0	0.10	65	*	*
VCR-05D431K	275	350	430(387-473)	745	5	400	200	13.0	9.0	0.10	60	*	*
VCR-05D471K	300	385	470(423-517)	810	5	400	200	15.0	10.0	0.10	55	*	*
VCR-05D511K	320	415	510(459-561)	845	5	400	200	16.0	11.0	0.10	50	*	*
VCR-05D561K	350	460	560(504-616)	920	5	400	200	16.0	11.0	0.10	45	*	*

VCR 05D180L to VCR 05D680K

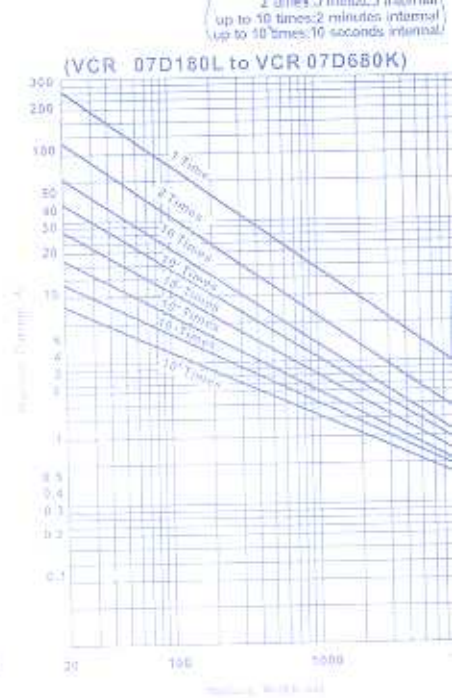
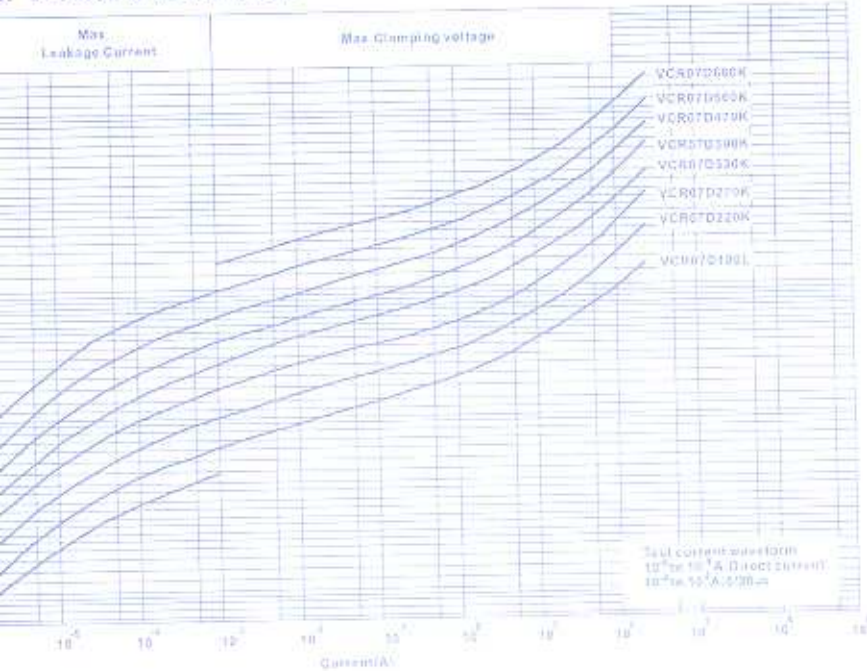


VCR 05D820K to VCR 05D561K

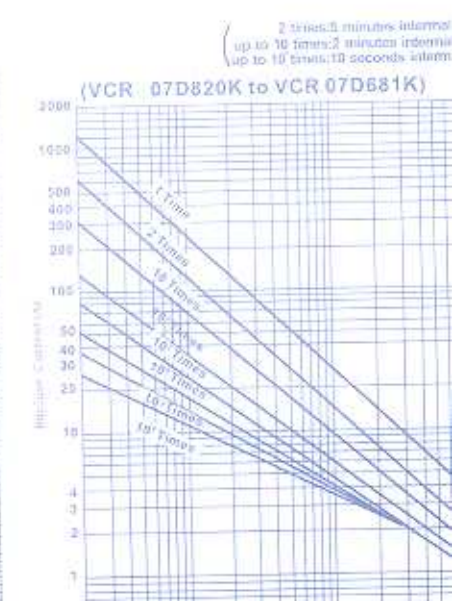
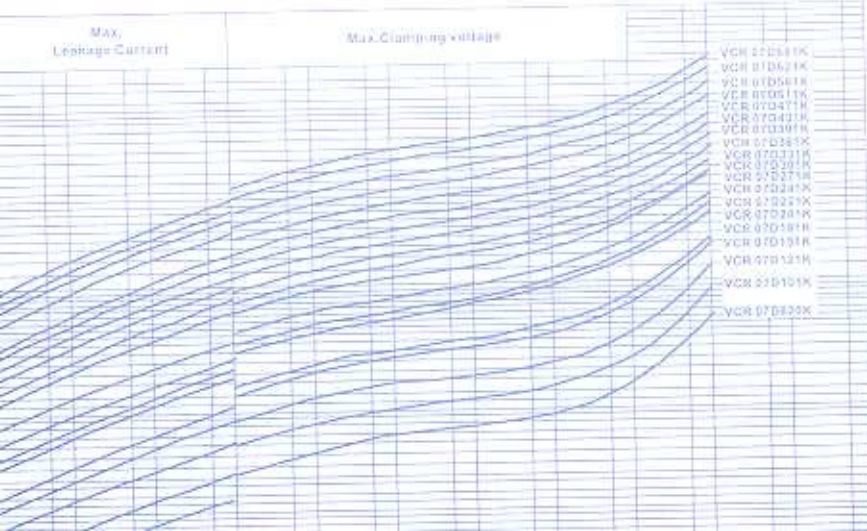


Part Number	Maximum Allowable Voltage		Varistor Voltage	Clamping voltage (Max.)		Maximum Peak Current (8/20μs)(A)		Maximum Energy (JOULE)		Rated Power	Typical Capacitance (Reference)		
	ACrms (V)	DC(V)	V _{1mA}	VC(V)	IP(A)	1 Time	2 Times	10/1000 μs	2ms	W	@ 1 KHz(pF)		
VCR-07D180L	10	14	18[14.4-21.6]	36	2.5	250	125	0.9	0.8	0.02	2800	*	
VCR-07D220K	14	18	22[20-24]	43	2.5	250	125	1.1	0.9	0.02	2300	*	
VCR-07D270K	17	22	27[24-30]	53	2.5	250	125	1.4	1.0	0.02	1800	*	
VCR-07D330K	20	26	33[30-36]	65	2.5	250	125	1.7	1.2	0.02	1500	*	
VCR-07D390K	25	31	39[35-43]	77	2.5	250	125	2.1	1.5	0.02	1300	*	
VCR-07D470K	30	38	47[42-52]	93	2.5	250	125	2.5	1.8	0.02	1100	*	
VCR-07D560K	35	45	56[50-62]	110	2.5	250	125	3.1	2.2	0.02	990	*	
VCR-07D680K	40	55	68[61-75]	135	2.5	250	125	3.6	2.5	0.02	740	*	
VCR-07D820K	50	65	82[74-90]	135	10	1200	600	5.5	3.5	0.25	600	*	
VCR-07D101K	60	85	100[90-110]	165	10	1200	600	6.5	4.0	0.25	500	*	
VCR-07D121K	75	100	120[108-132]	200	10	1200	600	7.8	5.0	0.25	420	*	
VCR-07D151K	95	125	150[135-165]	250	10	1200	600	9.7	6.0	0.25	330	*	
VCR-07D181K	115	150	180[162-198]	300	10	1200	600	11.7	8.5	0.25	280	*	
VCR-07D201K	130	170	200[185-225]	340	10	1200	600	13.0	10.0	0.25	250	*	*
VCR-07D221K	140	180	220[198-242]	360	10	1200	600	14.0	10.0	0.25	230	*	*
VCR-07D241K	150	200	240[216-264]	395	10	1200	600	15.0	10.0	0.25	210	*	*
VCR-07D271K	175	225	270[243-297]	455	10	1200	600	16.0	12.0	0.25	185	*	*
VCR-07D301K	190	250	300[270-330]	500	10	1200	600	20.0	13.0	0.25	165	*	*
VCR-07D331K	210	275	330[297-363]	550	10	1200	600	23.0	14.0	0.25	150	*	*
VCR-07D361K	230	300	360[324-396]	595	10	1200	600	25.0	15.0	0.25	140	*	*
VCR-07D391K	250	320	390[351-429]	650	10	1200	600	25.0	17.0	0.25	130	*	*
VCR-07D431K	275	350	430[387-473]	710	10	1200	600	28.0	20.0	0.25	115	*	*
VCR-07D471K	300	385	470[423-517]	775	10	1200	600	30.0	20.0	0.25	105	*	*
VCR-07D511K	320	415	510[459-561]	845	10	1200	600	30.0	20.0	0.25	100	*	*
VCR-07D561K	350	460	560[504-616]	920	10	1200	600	30.0	20.0	0.25	90	*	*

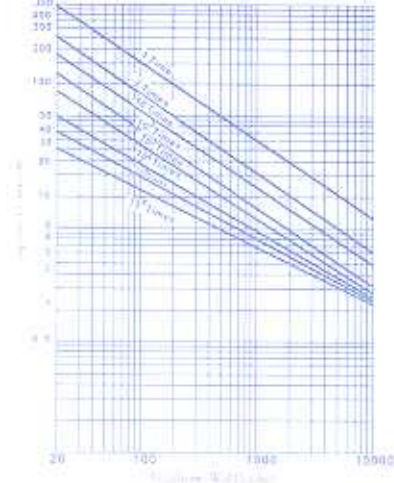
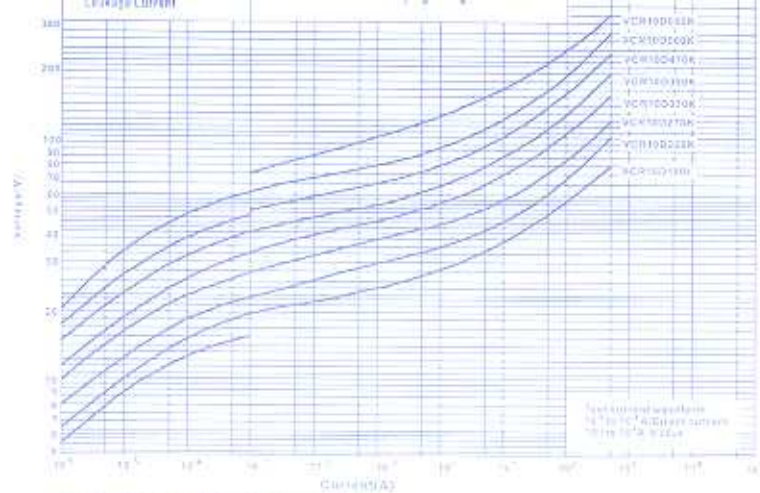
VCR 07D180L to VCR 07D680K



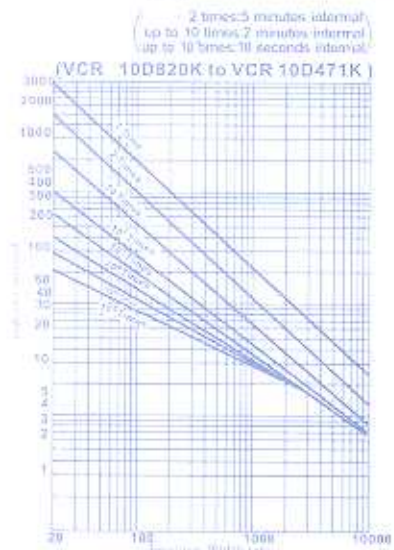
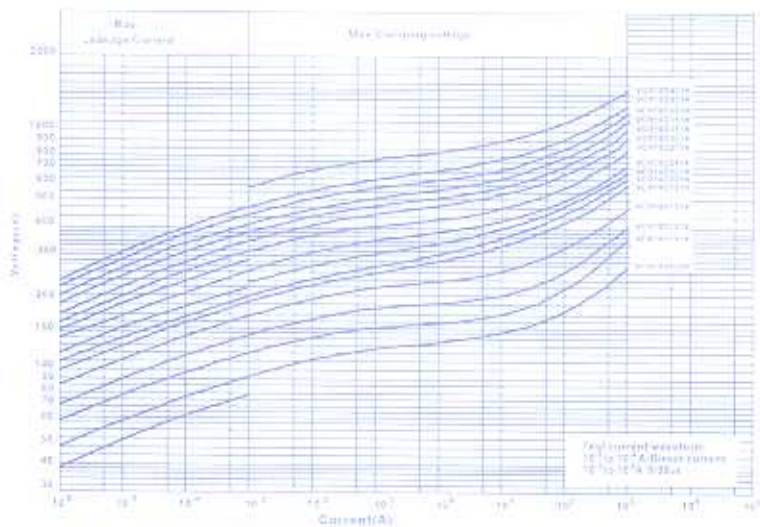
VCR 07D820K to VCR 07D681K



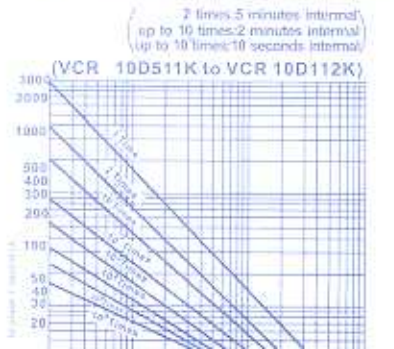
Part Number	Ripple Voltage		Voltage	Voltage (Max.)		Peak Current (8/20µs)(A)		Energy (JOULE)		Rated Power	Capacitance (Reference)	 		
	ACrms (V)	DC(V)	V _{rms}	VC(V)	IP(A)	1 Time	2 Times	10/1000 µs	2ms	W	@ 1 KHz(pF)			
VCR-10D180L	10	14	18[14-21.6]	36	5	500	250	2.1	1.5	0.05	5600	*		
VCR-10D220K	14	18	22[20-24]	43	5	500	250	2.5	2.0	0.05	4500	*		
VCR-10D270K	17	22	27[24-30]	53	5	500	250	3.0	2.3	0.05	3700	*		
VCR-10D330K	20	26	33[30-36]	65	5	500	250	4.0	3.0	0.05	3000	*		
VCR-10D390K	25	31	39[35-43]	77	5	500	250	4.6	3.5	0.05	2400	*		
VCR-10D470K	30	38	47[42-52]	93	5	500	250	5.6	4.5	0.05	2100	*		
VCR-10D560K	35	45	56[50-62]	110	5	500	250	7.0	5.5	0.05	1800	*		
VCR-10D680K	40	56	68[61-75]	135	5	500	250	8.2	6.5	0.05	1500	*		
VCR-10D820K	50	65	82[74-90]	135	25	2500	1250	12.0	8.0	0.4	1200	*		
VCR-10D101K	60	85	100[90-110]	165	25	2500	1250	15.0	10.0	0.4	1000	*		
VCR-10D121K	75	100	120[108-132]	200	25	2500	1250	18.0	12.0	0.4	830	*		
VCR-10D151K	95	125	150[135-165]	250	25	2500	1250	22.0	16.0	0.4	670	*		
VCR-10D181K	115	150	180[162-198]	300	25	2500	1250	27.0	18.5	0.4	560	*		
VCR-10D201K	130	170	200[185-225]	340	25	2500	1250	30.0	20.0	0.4	500	*	*	
VCR-10D221K	140	180	220[198-242]	360	25	2500	1250	32.0	23.0	0.4	450	*	*	
VCR-10D241K	150	200	240[216-264]	395	25	2500	1250	35.0	25.0	0.4	420	*		
VCR-10D271K	175	225	270[243-297]	455	25	2500	1250	40.0	30.0	0.4	370	*	*	
VCR-10D301K	190	250	300[270-330]	500	25	2500	1250	40.0	32.0	0.4	330	*	*	
VCR-10D331K	210	275	330[297-363]	550	25	2500	1250	43.0	34.0	0.4	300	*	*	
VCR-10D361K	230	300	360[324-396]	595	25	2500	1250	47.0	35.0	0.4	280	*	*	
VCR-10D391K	250	320	390[351-429]	650	25	2500	1250	60.0	40.0	0.4	260	*	*	
VCR-10D431K	275	350	430[387-473]	710	25	2500	1250	65.0	45.0	0.4	230	*	*	
VCR-10D471K	300	385	470[423-517]	775	25	2500	1250	70.0	45.0	0.4	210	*	*	
VCR-10D511K	320	415	510[459-561]	845	25	2500	1250	70.0	45.0	0.4	200	*	*	
VCR-10D561K	350	460	560[504-616]	925	25	2500	1250	70.0	45.0	0.4	180	*	*	
VCR-10D621K	385	505	620[558-682]	1025	25	2500	1250	70.0	45.0	0.4	160	*	*	
VCR-10D681K	420	560	680[612-748]	1120	25	2500	1250	70.0	45.0	0.4	150	*	*	
VCR-10D751K	460	615	750[675-825]	1240	25	2500	1250	75.0	50.0	0.4	130	*	*	
VCR-10D781K	485	640	780[702-858]	1290	25	2500	1250	80.0	50.0	0.4	130	*	*	
VCR-10D821K	510	670	820[738-902]	1355	25	2500	1250	85.0	55.0	0.4	120	*	*	
VCR-10D911K	550	745	910[819-1001]	1500	25	2500	1250	93.0	60.0	0.4	110	*	*	
VCR-10D102K	625	825	1000[900-1100]	1650	25	2500	1250	102.0	65.0	0.4	100	*	*	



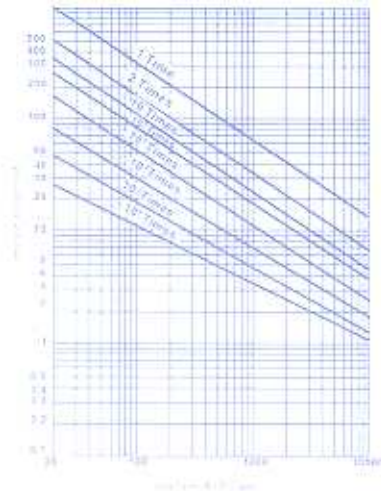
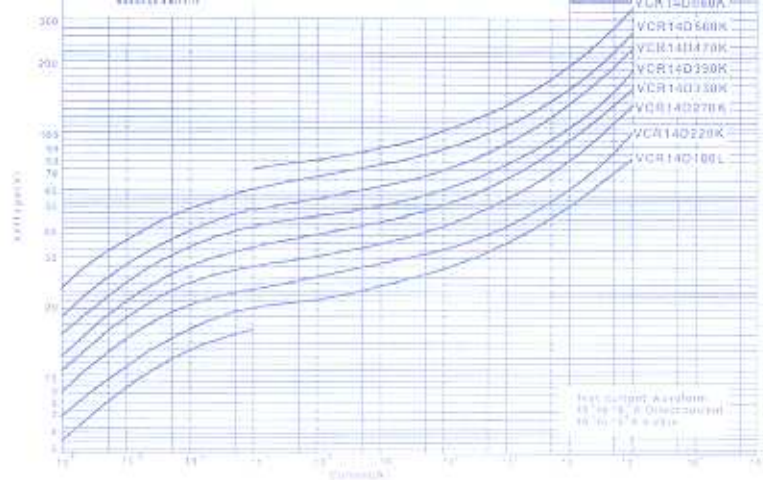
VCR 10D820K to VCR 10D471K



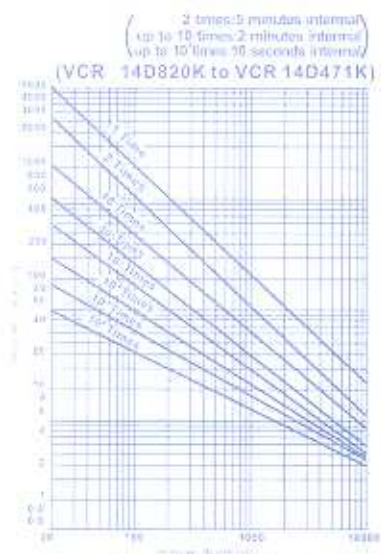
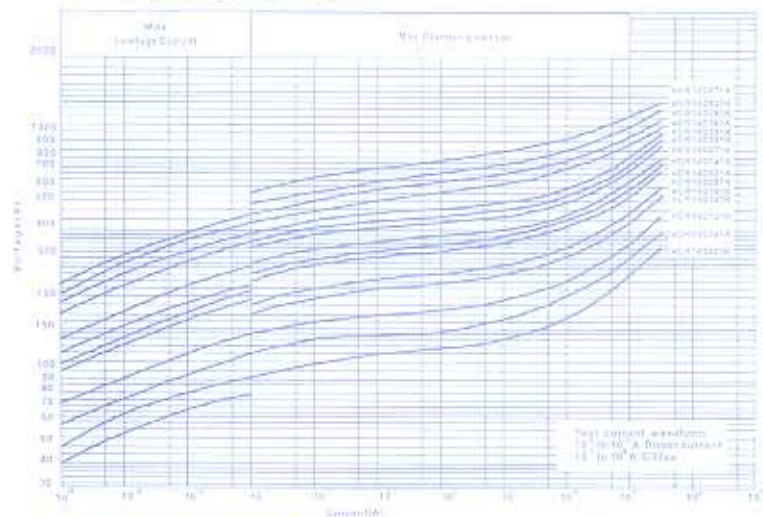
VCR 10D511K to VCR 10D112K



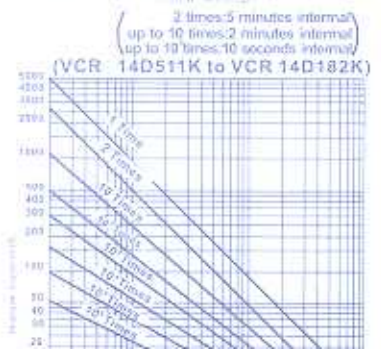
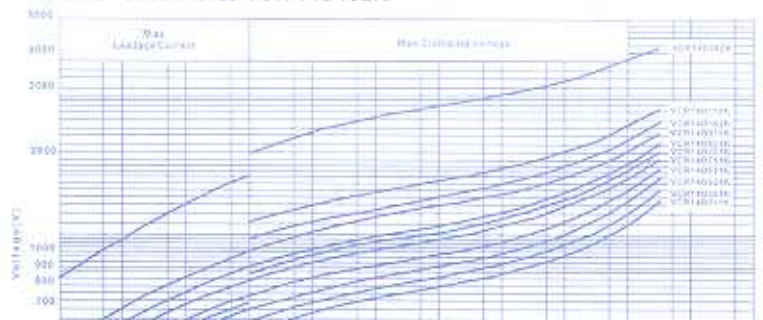
Part Number	Allowable Voltage		Voltage	Voltage (Max.)		Peak Current (8/20μs)(A)		Energy (JOULE)		Rated Power	Capacitance (Reference)	 		
	ACrms (V)	DC(V)	V _{1mA}	VC(V)	IP(A)	1 Time	2 Times	10/1000 μs	2ms	W	@ 1 KHz(pF)			
VCR-14D180K	10	14	18(14-21.6)	36	10	1000	500	4.0	3.5	0.10	1100	*		
VCR-14D220K	14	18	22(20-24)	43	10	1000	500	5.0	4.0	0.10	9100	*		
VCR-14D270K	17	22	27(24-30)	55	10	1000	500	6.0	5.0	0.10	7400	*		
VCR-14D330K	20	26	33(30-36)	66	10	1000	500	7.5	6.0	0.10	6100	*		
VCR-14D390K	25	31	39(35-43)	77	10	1000	500	8.6	7.0	0.10	5100	*		
VCR-14D470K	30	38	47(42-52)	93	10	1000	500	10.0	8.5	0.10	4300	*		
VCR-14D560K	35	45	56(50-62)	110	10	1000	500	11.0	10.0	0.10	3600	*		
VCR-14D680K	40	56	68(61-75)	135	10	1000	500	14.0	12.0	0.10	2900	*		
VCR-14D820K	50	65	82(74-90)	135	50	4500	2500	22.0	14.0	0.60	2400	*		
VCR-14D101K	60	85	100(90-110)	165	50	4500	2500	28.0	18.0	0.60	2000	*		
VCR-14D121K	75	100	120(108-132)	200	50	4500	2500	32.0	20.0	0.60	1700	*		
VCR-14D151K	95	125	150(135-165)	250	50	4500	2500	40.0	25.0	0.60	1300	*		
VCR-14D181K	115	150	180(162-198)	300	50	4500	2500	50.0	30.0	0.60	1100	*		
VCR-14D201K	130	170	200(185-225)	340	50	4500	2500	57.0	35.0	0.60	1000	*	*	
VCR-14D221K	140	180	220(198-243)	360	50	4500	2500	60.0	40.0	0.60	900	*	*	
VCR-14D241K	150	200	240(216-264)	395	50	4500	2500	63.0	40.0	0.60	830	*	*	
VCR-14D271K	175	225	270(243-297)	455	50	4500	2500	70.0	50.0	0.60	740	*	*	
VCR-14D301K	190	250	300(270-330)	500	50	4500	2500	77.0	52.0	0.60	670	*	*	
VCR-14D331K	210	275	330(297-363)	550	50	4500	2500	85.0	64.0	0.60	610	*	*	
VCR-14D361K	230	300	360(324-396)	595	50	4500	2500	93.0	65.0	0.60	560	*	*	
VCR-14D391K	250	320	390(351-429)	650	50	2500	2500	100.0	70.0	0.60	510	*	*	
VCR-14D431K	275	350	430(387-473)	710	50	4500	2500	115.0	75.0	0.60	460	*	*	
VCR-14D471K	300	385	470(423-517)	775	50	4500	2500	125.0	80.0	0.60	430	*	*	
VCR-14D511K	320	415	510(459-561)	845	50	4500	2500	125.0	80.0	0.60	390	*	*	
VCR-14D561K	350	460	560(504-616)	925	50	4500	2500	125.0	85.0	0.60	360	*	*	
VCR-14D621K	385	505	620(558-682)	1025	50	4500	2500	125.0	85.0	0.60	320	*	*	
VCR-14D681K	420	560	680(612-748)	1120	50	4500	2500	130.0	90.0	0.60	290	*	*	
VCR-14D751K	460	615	750(675-825)	1240	50	4500	2500	143.0	100.0	0.60	270	*	*	
VCR-14D781K	485	640	780(702-858)	1290	50	4500	2500	148.0	105.0	0.60	260	*	*	
VCR-14D821K	510	670	820(738-902)	1355	50	4500	2500	157.0	110.0	0.60	240	*	*	
VCR-14D911K	550	745	910(819-1000)	1480	50	4500	2500	175.0	120.0	0.60	220	*	*	
VCR-14D102K	625	825	1000(900-1100)	1650	50	4500	2500	190.0	130.0	0.60	200	*	*	



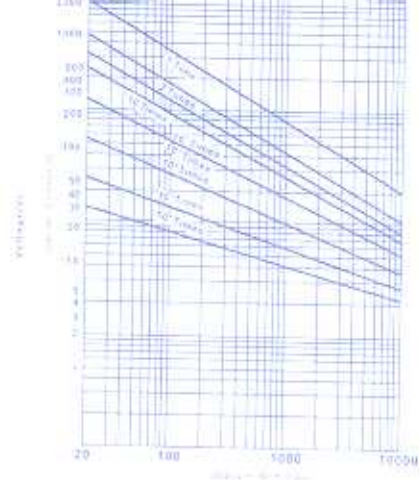
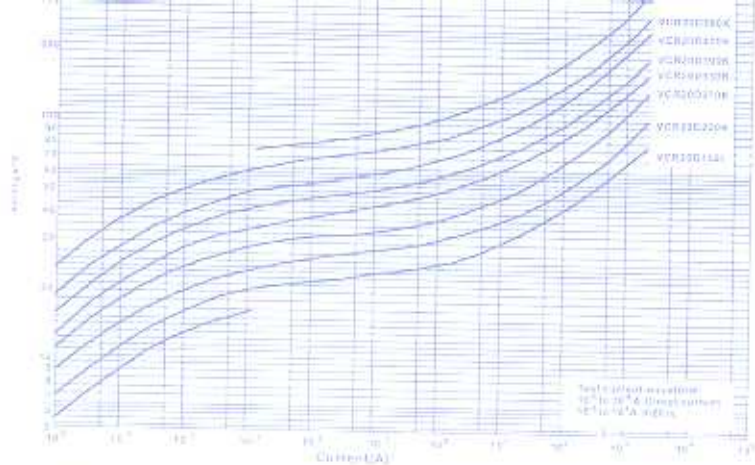
VCR 14D820K to VCR 14D471K



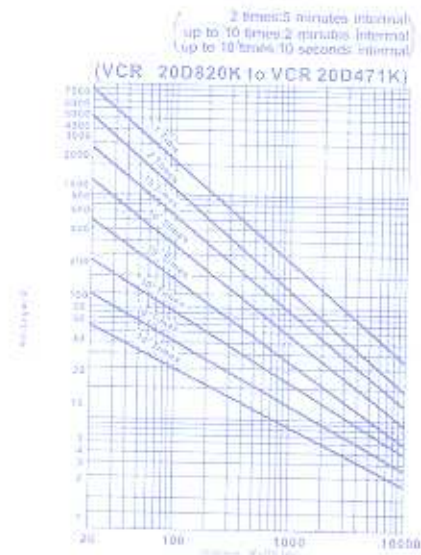
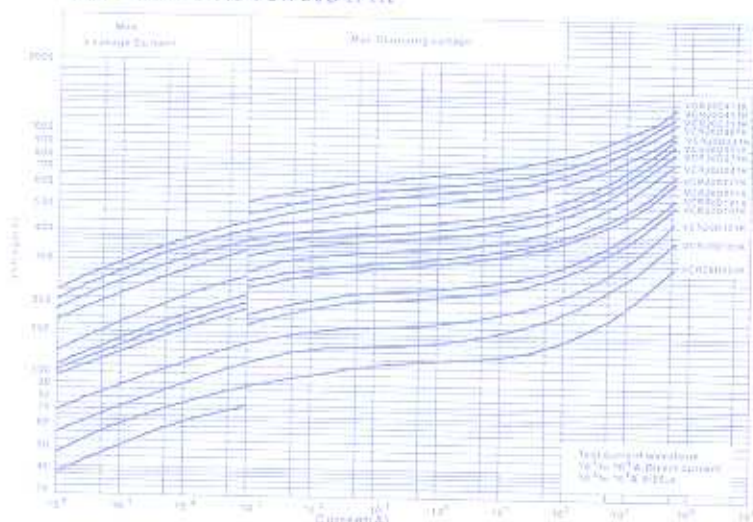
VCR 14D511K to VCR 14D182K



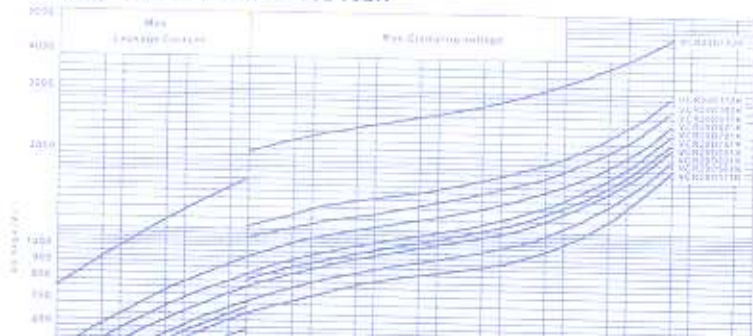
Part Number	Allowable Voltage		Voltage	Voltage (Max.)		Peak Current (8/20µs)(A)		Energy (Joule)		Rated Power	Capacitance (Reference)		
	ACrms (V)	DC(V)	V _{IMA}	VC(V)	IP(A)	1 Time	2 Times	10/1000 µs	2ms	W	@1 KHz(pF)		
VCR-20D180L	10	14	18[14-21.6]	36	20	2000	1000	11.0	10.0	0.20	28500	*	
VCR-20D220K	14	18	22[20-24]	43	20	2000	1000	14.0	13.0	0.20	18500	*	
VCR-20D270K	17	22	27[24-30]	53	20	2000	1000	18.0	15.0	0.20	13000	*	
VCR-20D330K	20	26	33[30-36]	65	20	2000	1000	23.0	20.0	0.20	11500	*	
VCR-20D390K	25	31	39[35-43]	77	20	2000	1000	28.0	24.0	0.20	8500	*	
VCR-20D470K	30	38	47[42-52]	93	20	2000	1000	33.0	30.0	0.20	7400	*	
VCR-20D560K	35	45	56[50-62]	110	20	2000	1000	41.0	35.0	0.20	6500	*	
VCR-20D680K	40	56	68[61-75]	135	20	2000	1000	46.0	40.0	0.20	5800	*	
VCR-20D820K	50	65	82[74-90]	165	100	6500	4500	58.0	27.0	1.00	4900	*	
VCR-20D101K	60	85	100[90-110]	165	100	6500	4500	45.0	30.0	1.00	4000	*	
VCR-20D121K	75	100	120[108-132]	200	100	6500	4500	55.0	40.0	1.00	3300	*	
VCR-20D161K	95	125	150[135-165]	250	100	6500	4500	70.0	50.0	1.00	2700	*	
VCR-20D181K	115	150	180[162-198]	300	100	6500	4500	85.0	60.5	1.00	2200	*	
VCR-20D201K	130	170	200[185-225]	340	100	6500	4500	95.0	70.0	1.00	2000	*	*
VCR-20D221K	140	180	220[198-242]	360	100	6500	4500	100.0	75.0	1.00	1800	*	*
VCR-20D241K	150	200	240[216-264]	395	100	6500	4500	105.0	80.0	1.00	1650	*	
VCR-20D271K	175	225	270[243-297]	455	100	6500	4500	127.0	90.0	1.00	1500	*	*
VCR-20D301K	190	250	300[270-330]	500	100	6500	4500	136.0	100.0	1.00	1300	*	*
VCR-20D331K	210	275	330[297-363]	550	100	6500	4500	150.0	110.0	1.00	1200	*	*
VCR-20D361K	230	300	360[324-396]	595	100	6500	4500	163.0	120.0	1.00	1100	*	*
VCR-20D391K	250	320	390[351-429]	650	100	6500	4500	180.0	130.0	1.00	1000	*	*
VCR-20D431K	275	350	430[387-473]	710	100	6500	4500	190.0	140.0	1.00	930	*	*
VCR-20D471K	300	385	470[423-517]	775	100	6500	4500	220.0	150.0	1.00	850	*	*
VCR-20D511K	320	415	510[459-561]	845	100	6500	4500	220.0	150.0	1.00	780	*	*
VCR-20D561K	350	460	560[504-616]	925	100	6500	4500	220.0	150.0	1.00	710	*	*
VCR-20D621K	385	505	620[558-682]	1025	100	6500	4500	220.0	150.0	1.00	650	*	*
VCR-20D681K	420	560	680[612-748]	1120	100	6500	4500	230.0	160.0	1.00	600	*	*
VCR-20D751K	460	615	750[675-825]	1240	100	6500	4500	255.0	175.0	1.00	530	*	*
VCR-20D781K	485	640	780[702-858]	1290	100	6500	4500	265.0	180.0	1.00	510	*	*
VCR-20D821K	510	670	820[738-902]	1355	100	6500	4500	282.0	190.0	1.00	500	*	*
VCR-20D911K	550	745	910[819-1001]	1500	100	6500	4500	310.0	215.0	1.00	440	*	*
VCR-20D102K	625	825	1000[900-1100]	1650	100	6500	4500	342.0	230.0	1.00	400	*	*

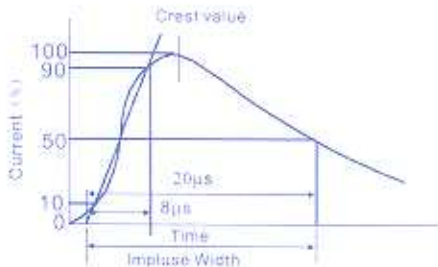


VCR 20D820K to VCR 20D471K



VCR 20D511K to VCR 20D182K



Characteristics		Test Methods/Description	Specifications
Standard Test Condition		Environmental conditions under which every measuring is done without doubt on the measuring results. Unless specially specified, Temperature, Relative humidity are 5 to 35°C 45 to 85% RH.	—
Maximum Allowable Voltage		The maximum sinusoidal RMS voltage or maximum DC voltage that can be applied continuously in the specified environmental temperature range.	
Varistor Voltage		The voltage between two terminals with the specified measuring current CmA DC applied is called Vc or VcMA, the measurement shall be made as fast as possible to avoid heat affection.	
Clamping Voltage		The maximum voltage between two terminals with the specified standard impulse current (8/20 μs) illustrated below applied. 	To meet the specified value
Maximum Peak Current (Withstanding Surge Current)	2 times	The maximum current within the varistor voltage change of ±10% with the standard impulse current(8/20 μs) applied two times with an interval of 5 minutes	
	1 time	The maximum current within the varistor voltage change of ±10% with the standard impulse current(8/20 μs) applied one time	
Maximum Energy		The maximum energy within the varistor voltage change of ±10% when one impulse of 2 ms or 10/1000 μs is applied.	
Rated Power		The power that can be applied in the specified ambient temperature.	
Capacitance		Capacitance shall be measured at 1kHz±10%, 1Vrms max.(1 Mhz below 100pF), 0V bias and 20±2°C	To meet the specified value
Dissipation Factor		Dissipation Factor shall be measured at 1KHz±10%, 1Vrms max.(1 Mhz+10% below 100pF), 0V bias and 20±2°C	
Temperature Coefficient of Varistor Voltage		$\frac{V_c \text{ at } 85^\circ\text{C} - V_c \text{ at } 25^\circ\text{C}}{V_c \text{ at } 25^\circ\text{C}} \times \frac{1}{60} \times 100(\% / ^\circ\text{C})$	-0.05%/°C max