

CNR 20D 突波吸收器

Device Ratings and Characteristics

元件的額定值與特性

Part No. 型號	Maximum Allowable Voltage 最大容許電壓		Varistor Voltage 突波吸收器動作電壓 (@1mA)			Maximum Clamping Voltage 抑制電壓 @ Test Current (8/20µs)		Maximum Energy 最大吸收能量 (J)	Maximum Peak Current 最大電流耐量 (8/20µs)	Rated Power 消耗功率 (W)	Typical Capacitance 參考電容值 (@1KHz)	Standards 安規
	ACrms(V)	DC(V)	Min.	Vb(Vdc)	Max.	Vc (V)	Ip (A)	10/1000µs	(A)	(W)	(pF)	
CNR-20D180K	11	14	14.4	18	21.6	39	20	11.0	2000	0.2	40000	☆
CNR-20D220K	14	18	18.7	22	26.0	43	20	14.0	2000	0.2	30000	☆
CNR-20D270K	17	22	23.0	27	31.1	53	20	18.0	2000	0.2	24500	☆
CNR-20D330K	20	26	29.5	33	36.5	65	20	23.0	2000	0.2	20000	☆
CNR-20D390K	25	31	35	39	43	77	20	26.0	2000	0.2	13800	☆
CNR-20D470K	30	38	42	47	52	93	20	33.0	2000	0.2	13500	☆
CNR-20D560K	35	45	50	56	62	110	20	41.0	2000	0.2	12200	☆
CNR-20D680K	40	56	61	68	75	135	20	46.0	2000	0.2	11500	☆ □
CNR-20D820K	50	65	74	82	90	135	100	38.0	6500	1.0	8200	☆ ◎ □
CNR-20D101K	60	85	90	100	110	165	100	45.0	6500	1.0	8000	☆ ◎ □
CNR-20D121K	75	100	108	120	132	200	100	55.0	6500	1.0	5500	☆ ◎ □
CNR-20D151K	95	125	135	150	165	250	100	70.0	6500	1.0	4200	☆ ◎ □
CNR-20D181K	115	150	162	180	198	300	100	85.0	6500	1.0	2500	☆ ◎ □
CNR-20D201K	130	170	185	200	225	340	100	95.0	6500	1.0	2300	☆ △ ※ ◎ □
CNR-20D221K	140	180	198	220	242	360	100	100.0	6500	1.0	2200	☆ △ ※ ◎ □
CNR-20D241K	150	200	216	240	264	395	100	108.0	6500	1.0	2200	☆ △ ※ ◎ □
CNR-20D271K	175	225	247	270	303	455	100	127.0	6500	1.0	2100	☆ △ ※ ◎ □
CNR-20D301K	195	250	270	300	330	500	100	150.0	6500	1.0	1800	☆ △ ※ ◎ □
CNR-20D331K	210	275	297	330	363	550	100	163.0	6500	1.0	1750	☆ △ ※ ◎ □
CNR-20D361K	230	300	324	360	396	595	100	163.0	6500	1.0	1700	☆ △ ※ ◎ □
CNR-20D391K	250	320	351	390	429	650	100	180.0	6500	1.0	1400	☆ △ ※ ◎ □
CNR-20D431K	275	350	387	430	473	710	100	190.0	6500	1.0	1350	☆ △ ※ ◎ □
CNR-20D471K	300	385	423	470	517	775	100	220.0	6500	1.0	1200	☆ △ ※ ◎ □
CNR-20D511K	320	410	459	510	561	845	100	220.0	6500	1.0	1050	☆ △ ※ ◎ □
CNR-20D561K	350	460	504	560	616	915	100	220.0	6500	1.0	850	☆ △ ※ ◎ □
CNR-20D621K	385	505	558	620	682	1025	100	220.0	6500	1.0	570	☆ △ ※ ◎ □
CNR-20D681K	420	560	612	680	748	1120	100	230.0	6500	1.0	550	☆ △ ※ ◎ □
CNR-20D751K	460	615	675	750	825	1240	100	255.0	6500	1.0	530	☆ △ ※ ◎ □
CNR-20D781K	485	640	702	780	858	1290	100	265.0	6500	1.0	500	☆ △ ※ ◎ □
CNR-20D821K	510	670	738	820	902	1355	100	282.0	6500	1.0	500	☆ △ ※ ◎ □
CNR-20D911K	550	745	819	910	1001	1500	100	310.0	6500	1.0	480	☆ △ ※ ◎ □
CNR-20D102K	625	825	900	1000	1100	1650	100	342.0	6500	1.0	460	☆ △ ※ ◎ □
CNR-20D112K	680	895	990	1100	1210	1815	100	383.0	6500	1.0	400	☆ ※ ◎ □

Related Standards

安規說明

Standard No. 安規號碼	UL 1414	UL 1449 (3rd Edition)	CSA	VDE	CQC
Title 名稱	Across-The-Line Components	Surge Protective Device	Accessories and Parts for Electronic Products	Varistors for use in Electronic equipment	GB/T10193 GB/T10194 GB8898 GB4943.1
File No. 檔案號碼	E165143	E316325	LR109736-1	21557-4790-001	CQC02001002471 CQC08001023767 CQC08001023768 CQC08001023769
Symbols 符號	△	☆	※	◎	□

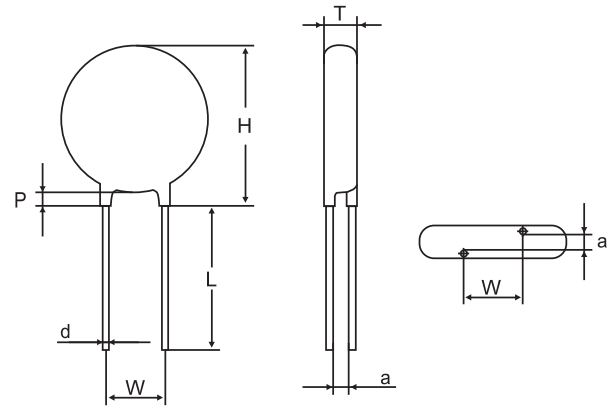
RoHS

Dimension of Component for Standard Product 標準品之尺寸規格

Dimension Table

Unit: mm

Model Symbol	05D	07D	10D	14D	18D	20D
D(max.)	7.5	9.0	14.0	17.5	23.0	25.0
H(max.)	10.0	12.0	17.0	20.5	26.0	28.0
W(±1.0)	5.0	5.0	7.5	7.5	7.5	7.5/10.0
P(max.)	3.0					
L(min)	25.0					
d(±0.05)	0.6	0.6	0.8	0.8	0.8	0.8/1.0
	Cuorcp	Cuorcp	Cuorcp	Cuorcp 182 Konly Cu	Cuorcp	Cuorcp 1.0 Konly Cu



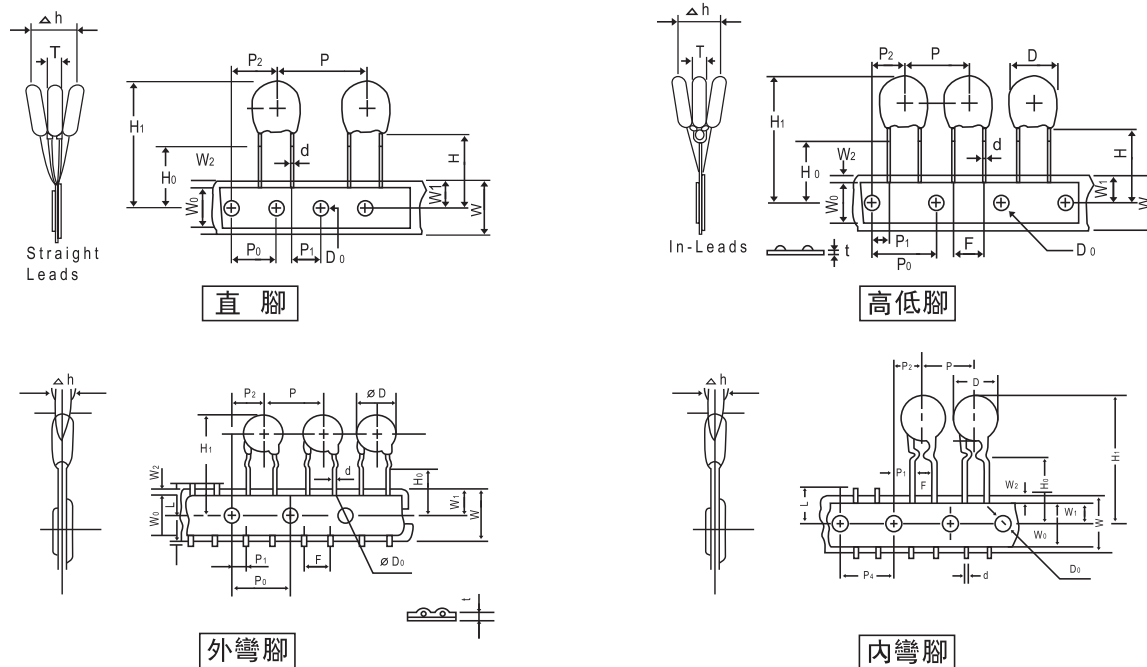
T max. Table

Unit: mm

Part No.	05D	07D	10D	14D	18D	20D	a (±0.4)
180K	3.3	3.5	3.9	4.0	4.2	4.3	1.0
220K	3.6	3.8	4.2	4.3	4.5	4.6	1.1
270K	3.8	4.0	4.4	4.5	4.7	4.8	1.2
330K	3.3	3.5	3.9	4.0	4.2	4.3	1.1
390K	3.5	3.7	4.1	4.2	4.4	4.5	1.3
470K	3.7	3.9	4.3	4.4	4.6	4.7	1.4
560K	4.0	4.2	4.6	4.7	4.9	5.0	1.5
680K	4.3	4.5	4.9	5.0	5.2	5.3	1.7
820K	3.3	3.5	3.9	4.0	4.2	4.3	1.0
101K	3.6	3.8	4.2	4.3	4.5	4.6	1.0
121K	3.8	4.0	4.4	4.5	4.7	4.8	1.1
151K	4.1	4.3	4.7	4.8	5.0	5.1	1.3
181K	3.2	3.4	3.8	3.9	4.1	4.2	1.0
201K	3.3	3.5	3.9	4.0	4.2	4.3	1.0
221K	3.4	3.6	4.0	4.1	4.3	4.4	1.1
241K	3.5	3.7	4.1	4.2	4.4	4.5	1.2
271K	3.7	3.9	4.2	4.3	4.5	4.6	1.3

Part No.	05D	07D	10D	14D	18D	20D	a (±0.4)
301K	3.9	4.1	4.3	4.4	4.6	4.7	1.4
331K	4.0	4.2	4.5	4.6	4.8	4.9	1.5
361K	4.1	4.3	4.7	4.8	5.0	5.1	1.2
391K	4.2	4.4	4.8	4.9	5.1	5.2	1.3
431K	4.4	4.6	5.0	5.1	5.3	5.4	1.4
471K	4.6	4.8	5.2	5.3	5.5	5.6	1.5
511K	4.8	5.0	5.3	5.4	5.6	5.7	1.7
561K	5.0	5.2	5.5	5.6	5.8	5.9	1.8
621K	5.3	5.5	5.7	5.8	6.0	6.1	2
681K	5.4	5.6	5.8	5.9	6.1	6.2	2.2
751K	5.6	5.8	6.0	6.1	6.3	6.4	2.4
781K	5.8	6.0	6.3	6.4	6.6	6.7	2.5
821K	-	6.3	6.5	6.6	6.8	6.9	2.6
911K	-	-	6.6	6.7	6.9	7.0	3
102K	-	-	7.0	7.1	7.3	7.4	3.3
112K	-	-	7.4	7.5	7.7	7.9	3.6
182K	-	-	-	11.5	11.7	11.9	5.5

Tape and Reel Specifications 捲帶裝尺寸規格



Symbol	PARAMETER	Model Size					
		□ 05D series	□ 07D series	□ 10D series	□ 10D series	□ 14D series	□ 14D series
P	Pitch of Component	12.7±1.0	12.7±1.0	12.7±1.0	15.0±1.0	25.4±1.0	30.0±1.0
P₀	Feed Hole Pitch	12.7±0.2	12.7±0.2	12.7±0.2	15.0±0.2	25.4±0.2	30.0±0.2
P₁	Feed Hole Center Lead	3.85±0.7	3.85±0.7	3.85±0.7	3.75±0.7	8.95±0.7	3.75±0.7
P₂	Hole Center to Component Center	6.35±0.7	6.35±0.7		7.5±1.3	12.7±0.7	7.5±0.7
F	Lead to Lead Distance	5.0±0.8	5.0±0.8	7.5±0.8	5.0±0.8	7.5±0.8	7.5±0.8
Δh	Component Alignment	2.0 Max	2.0 Max	2.0 Max	2.0 Max	2.0 Max	2.0 Max
W	Tape Width	18.0+1.0 18.0-0.5	18.0+1.0 18.0-0.5	18.0+1.0 18.0-0.5	18.0+1.0 18.0-0.5	18.0+1.0 18.0-0.5	18.0+1.0 18.0-0.5
W₀	Hold Down Tape Width	5.0 MIN.	5.0 MIN.	5.0 MIN.	5.0 MIN.	5.0 MIN.	5.0 MIN.
W₁	Hole Position	9.0+0.75 9.0-0.50	9.0+0.75 9.0-0.50	9.0+0.75 9.0-0.50	9.0+0.75 9.0-0.50	9.0+0.75 9.0-0.50	9.0+0.75 9.0-0.50
W₂	Hold Down Tape Position	3.0 Max	3.0 Max	3.0 Max	3.0 Max	3.0 Max	3.0 Max
H	Height from Tape Center to Component Base	18.0+2.0 18.0-0.0	18.0+2.0 18.0-0.0	18.0+2.0 18.0-0.0	18.0+2.0 18.0-0.0	18.0+2.0 18.0-0.0	18.0+2.0 18.0-0.0
H₀	Seating Plane Height	16.0±0.5	16.0±0.5	16.0±0.5	16.0±0.5	16.0±0.5	16.0±0.5
H₁	Component Height	29.0 Max	32.0 Max	36.0 Max	36.0 Max	40.0 Max	40.0 Max
D₀	Feed Hole Diameter	4.0±0.2	4.0±0.2	4.0±0.2	4.0±0.2	4.0±0.2	4.0±0.2
t	Total Tape Thickness	0.7±0.2	0.7±0.2	0.7±0.2	0.7±0.2	0.7±0.2	0.7±0.2
L	Length of Clipped Lead	11.0 Max	11.0 Max	11.0 Max	11.0 Max	11.0 Max	11.0 Max

Unit : mm

Order Information of Taped Reel

Standard Products	Tape Reel Straight Lead	Tape Reel Crimped Lead	Min. Q'ty	Q'ty/Inner Box
CNR-05DXXXK	CNR-05DXXXK-TRS	CNR-05DXXXK-TRK	2000/1500	4000/3000
CNR-07DXXXK	CNR-07DXXXK-TRS	CNR-07DXXXK-TRK	2000/1500	4000/3000
CNR-10DXXXK	CNR-10DXXXK-TRS	CNR-10DXXXK-TRK	1500/1000	3000/2000
CNR-14DXXXK	CNR-14DXXXK-TRS	CNR-14DXXXK-TRK	1000/800	2000/1600

Note :

1."2000/1500" Packing in CNR-XXD180K to CNR-XXD271K are 2000 pcs, CNR-XXD301K to CNR-XXD471K with 1500 pcs.

2.Packing unit in pcs.

Packaging Specifications

Flat box				Reel				
Symbol	5D	7D	10D	Symbol	5D	7D	10D	14D
A	55 Max.			W	Approx. 45			55
B	330 Max.			D	360 Max.			
C	340 Max.			A	Approx. ϕ 30			
				B	Approx. ϕ 90			

Unit : mm

Order Information of Flat Box

Standard Products	Tape Box Straight Lead	Tape Box Crimped Lead	Max. Q'ty	Q'ty/Box
CNR-05DXXXK	CNR-05DXXXK-BTS	CNR-05DXXXK-BTK	2000/1500	4000/3000
CNR-07DXXXK	CNR-07DXXXK-BTS	CNR-07DXXXK-BTK	2000/1500	4000/3000
CNR-10DXXXK	CNR-10DXXXK-BTS	CNR-10DXXXK-BTK	1500/1000	3000/2000

Note :

1."2000/1500" Packing in CNR-XXD180K to CNR-XXD271K are 2000 pcs, CNR-XXD301K to CNR-XXD471K with 1500 pcs.

3.Packing unit in pcs.

Series			05D	07D	10D	14D
Symbol						
A max.	Varistor Voltage V1mA(V)	18 to 270	13.0	15.0	19.5	22.5
		360 to 470	13.0	15.0	20.5	23.5
D max.			7.5	9.0	14.0	17.5
K			1.2±0.4	1.2±0.4	1.4±0.4	1.4±0.4
W			5.0±1.0	5.0±1.0	7.5±1.0	7.5±1.0
ψ d			0.6	0.6	0.8	0.8

The technical drawing illustrates the physical dimensions of the varistor. The top view shows an oval-shaped component with a diameter labeled 'D'. The side view shows the component's profile with a height labeled 'A'. The mounting pads are dimensioned with 'K' for the pad width, 'CL' for the center-to-center distance between pads, and 'W' for the pad thickness. The thickness of the component is labeled 'T'.

T max. See standard product specification table.

Order Information of Crimp Leads

Standard Products	Tape Reel Straight Lead	Tape Reel Crimped Lead	Min. Q'ty	Q'ty/Inner Box
CNR-05DXXXK	CNR-05DXXXK-TRS	CNR-05DXXXK-TRK	2000/1500	4000/3000
CNR-07DXXXK	CNR-07DXXXK-TRS	CNR-07DXXXK-TRK	2000/1500	4000/3000
CNR-10DXXXK	CNR-10DXXXK-TRS	CNR-10DXXXK-TRK	1500/1000	3000/2000
CNR-14DXXXK	CNR-14DXXXK-TRS	CNR-14DXXXK-TRK	1000/800	2000/1600

Note :

1.Packing unit in pcs.

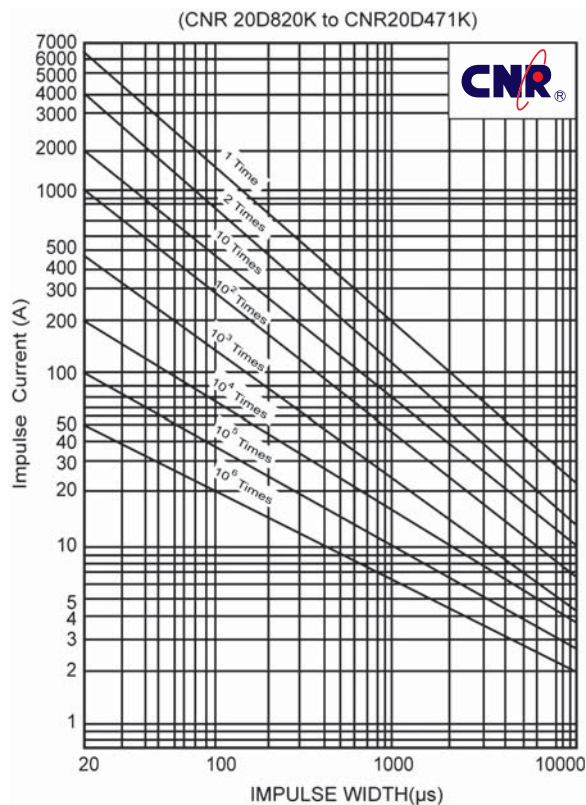
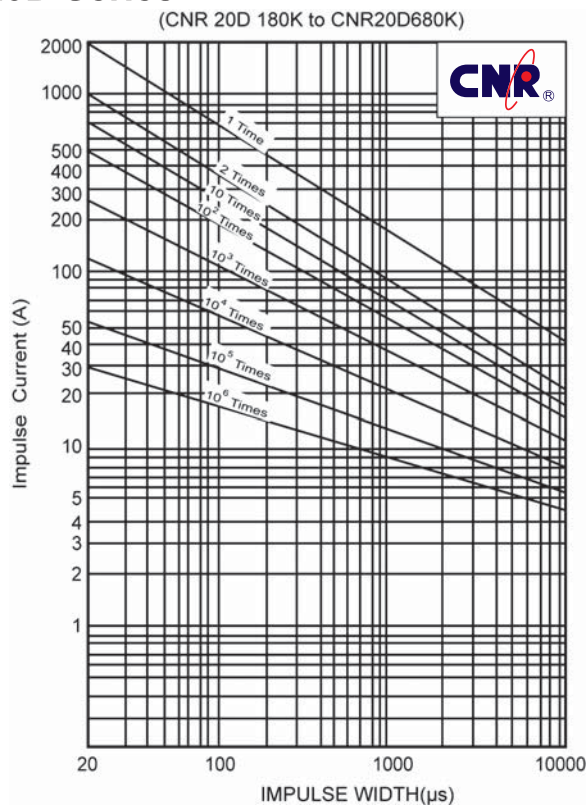
Impulse Life Time Rating Curves 額定脈衝壽命次數曲線

2 times: 5 minutes interval

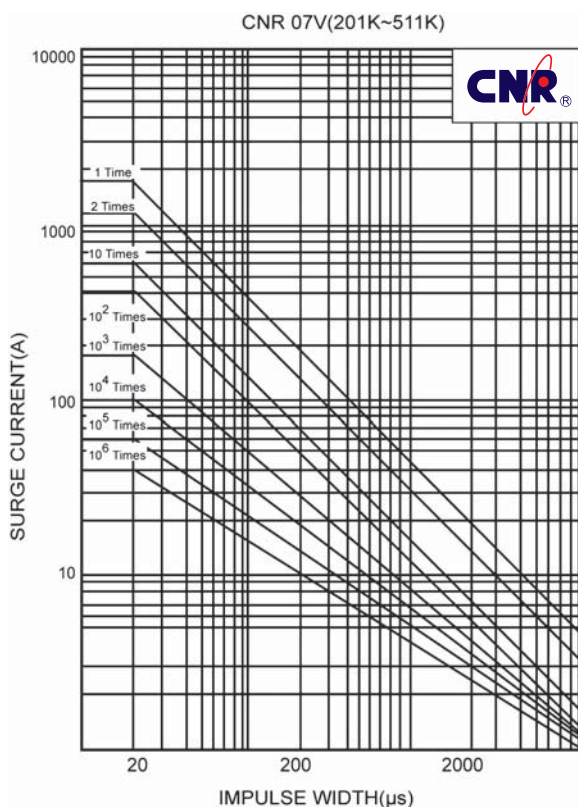
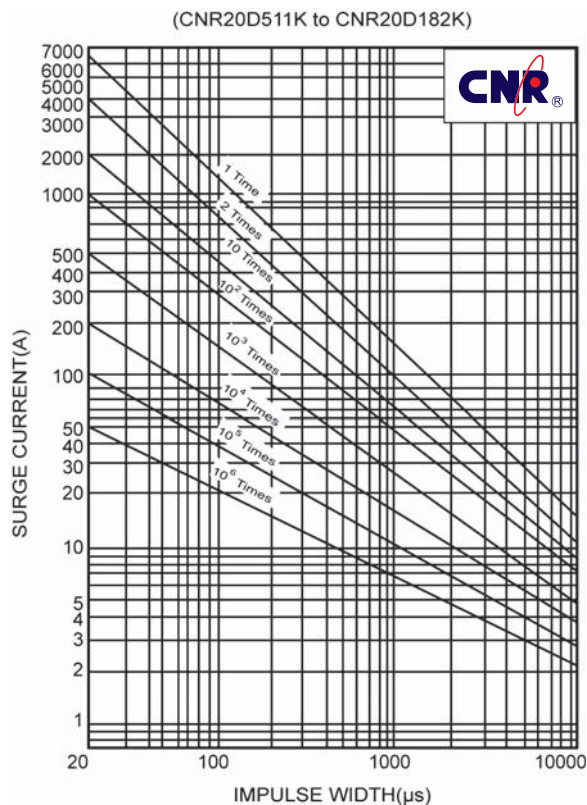
up to 10 times: 2 minutes interval

up to 10^6 times 10 seconds interval

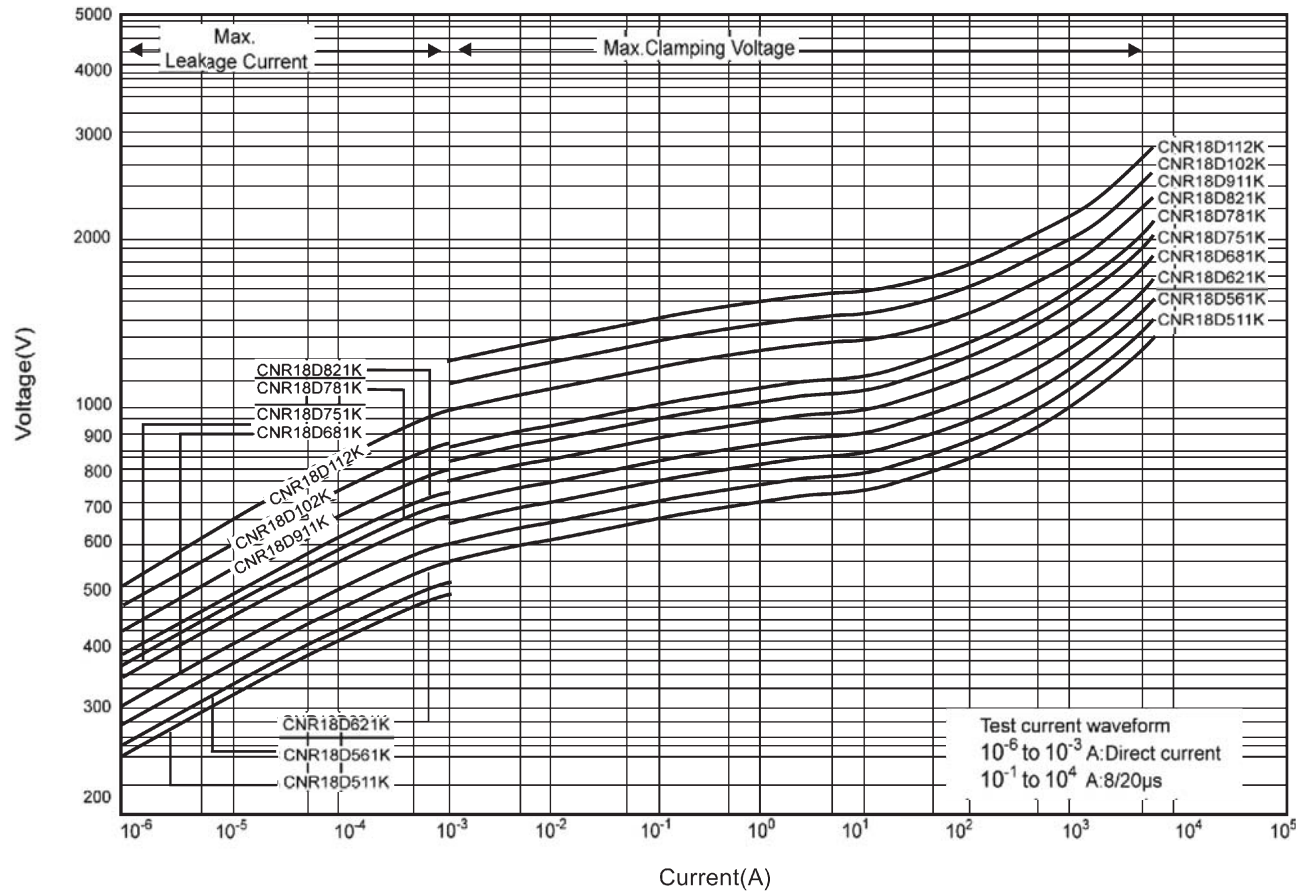
20D Series



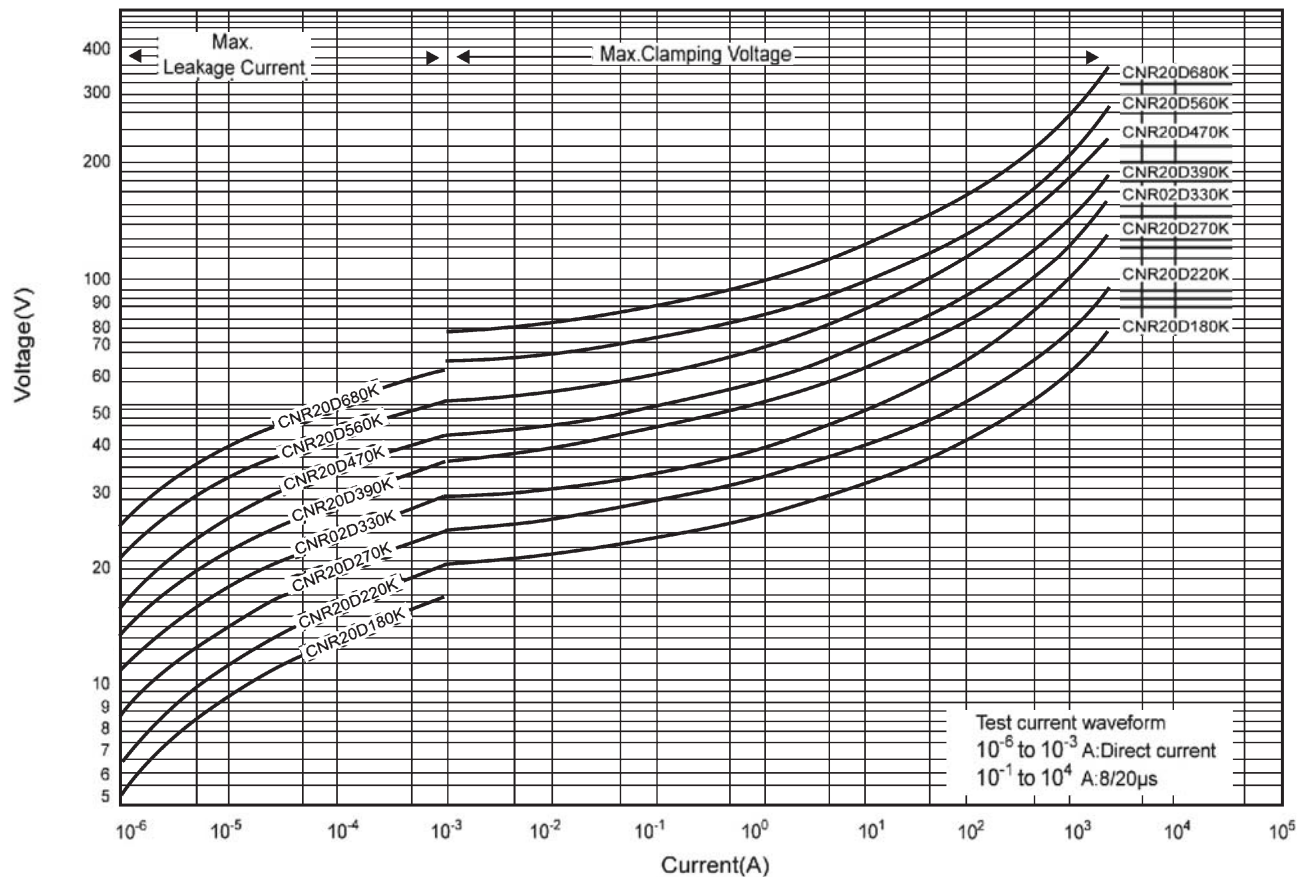
07V Series



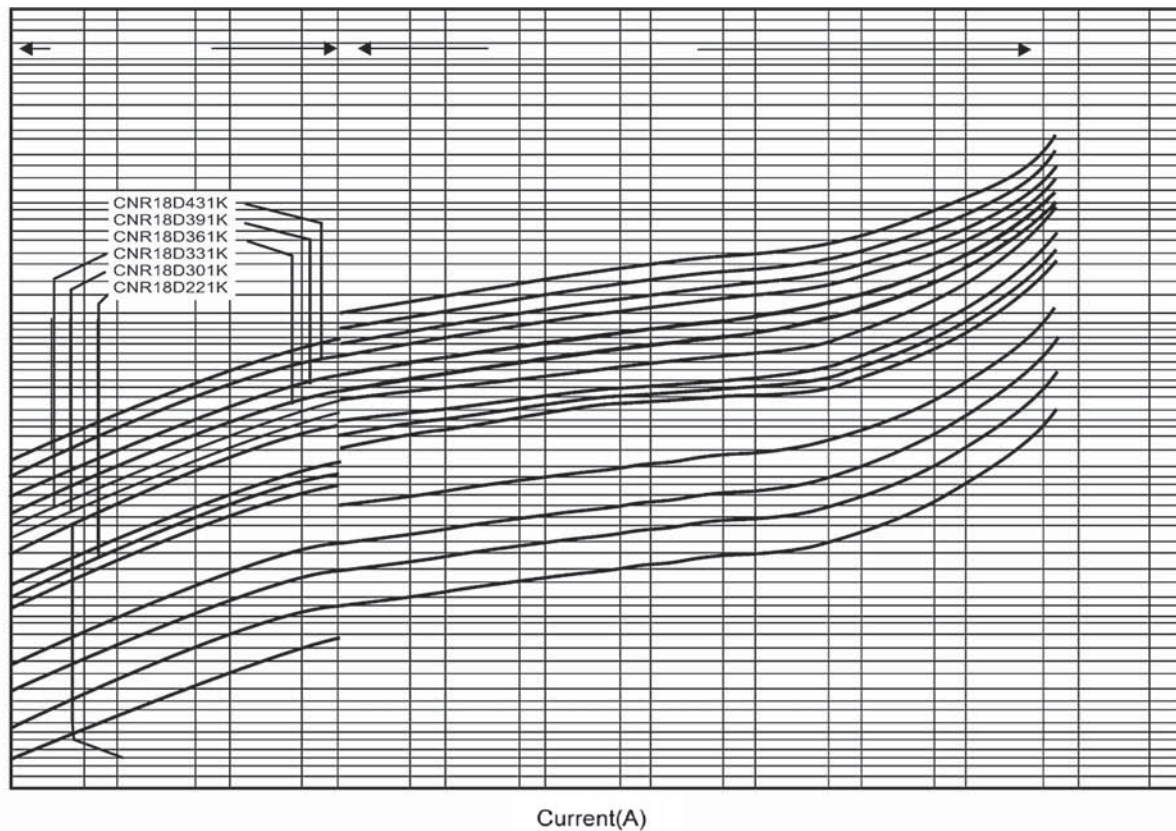
V-I Curve CNR18D511K to CNR18D112K電壓-電流特性曲線



V-I Curve CNR20D180K to CNR20D680K電壓-電流特性曲線



V-I Curve CNR20D820K to CNR20D471K 電壓-電流特性曲線



V-I Curve CNR20D511K to CNR20D112K 電壓-電流特性曲線

