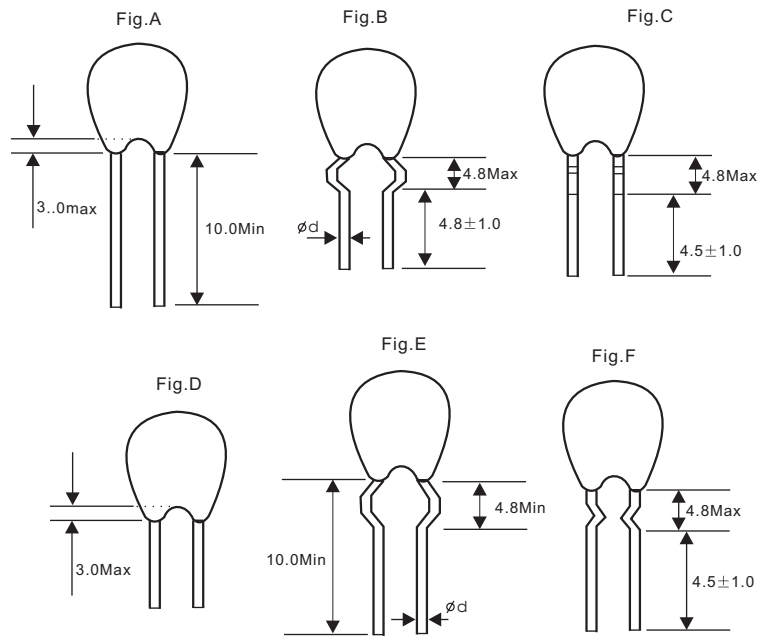




# 壓敏電阻器 ZINC OXIDE VARISTOR

## • 引綫類型 LEAD STYLE

代碼 Code	結構 Configuration
A	長直脚 straight long
B	外彎短脚 Outside Crimped short
C	垂直彎脚 Vertical Crimped
D	直短脚 straight short
E	外彎長脚 Outside Crimped Long
F	內彎短脚 Inside Crimped short

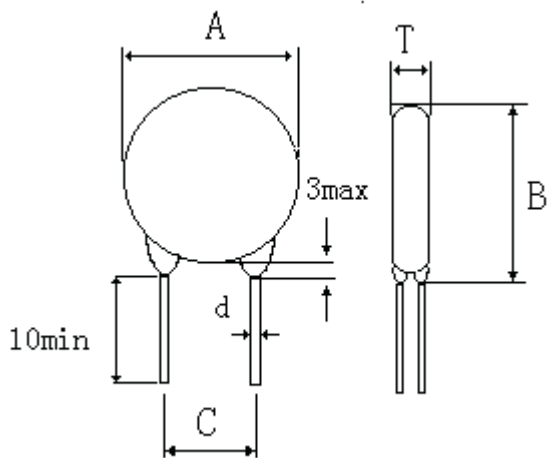


## • 包裝方式及數量 QUANTITY & MEASURE

規格 Code	數量 Quantity/塑料袋 Plastic bag		
	散裝 Bluk		編帶 Tape
	A.E	B.F.E	
05K	500	1000PCS	2500PCS
07K	500	1000PCS	1500PCS
10K	300	500PCS	1000PCS
14K	150	500PCS	1000PCS
20K	100	300PCS	500PCS
25K	50	200PCS	
32K	50		
40K	25		

• 結構尺寸 DIMENSION

T厚度 Thickness (max) (單位Unit:mm)



單位 (Unit) : mm

規格 Part Code	A	B	d	C
	MAX	MAX		
05K	7.5	10	0.6±0.05	5±1
07K	9.5	14	0.6±0.05	5±1
10K	14	19	0.8±0.05	7.5±1
14K	17.5	20/22	0.8±0.05	7.5±1
20K	24	28/30	1.0±0.05	10±1
25K	30	33	1.5±0.05	15±1
32K	38	43	1.5±0.05	18±1
40K	48	52	1.5±0.05	18±1

規格 Part Code	05k	07k	10k	14k	20k	25k	32k	40k
180	4.5	4.5	4.6	4.6	4.6			
220	4.6	4.6	4.7	4.7	4.9			
270	4.7	4.7	4.8	4.8	5.0			
330	4.9	4.9	5.0	5.0	5.2			
390	4.8	4.8	5.3	5.3	5.5			
470	4.9	4.9	5.4	5.4	5.6			
560	5.0	5.0	5.5	5.5	5.7			
680	5.2	5.2	5.6	5.6	5.8			
820	4.1	4.1	4.7	4.7	4.9			
101	4.3	4.3	4.9	4.9	5.1			
121	4.5	4.5	5.1	5.1	5.3			
151	4.8	4.8	5.4	5.4	5.6			
181	4.3	4.3	5.0	5.0	5.2			
201	4.4	4.4	5.0	5.0	5.2	5.4	5.6	5.6
221	4.5	4.5	5.0	5.0	5.3	5.5	5.7	5.7
241	4.6	4.6	5.2	5.2	5.4	5.6	5.8	5.8
271	4.9	4.9	5.4	5.4	5.6	5.8	6.0	6.0
301	5.0	5.0	5.5	5.5	5.7	5.9	6.1	6.1
331	5.1	5.1	5.8	5.8	6.0	6.1	6.3	6.3
361	5.2	5.2	6.0	6.0	6.2	6.4	6.6	6.6
391	5.4	5.4	6.2	6.2	6.4	6.6	6.8	6.8
431	5.7	5.7	6.5	6.5	6.7	6.9	7.1	7.1
471	6.0	6.0	6.8	6.8	7.0	7.2	7.4	7.4
511	6.0	6.0	6.8	6.8	7.0	7.2	7.4	7.4
561	6.0	6.0	6.8	6.8	7.0	7.2	7.9	7.9
621		7.1	7.3	7.3	7.8	8.0	8.2	8.2
681		7.3	7.6	7.6	7.8	8.0	8.2	8.2
751			8.0	8.0	8.2	8.4	8.6	8.6
781			8.1	8.1	8.3	8.5	8.7	8.7
821			8.3	8.3	8.5	8.7	8.9	8.9
911			8.8	8.8	9.0	9.2	9.4	9.4
102			9.3	9.3	9.5	9.7	9.9	9.9
112			9.9	9.9	10.1	10.3	10.5	10.5



**• 5K系列電性能 SERIES SPECIFICATION**

型號規格 Part Number	最大允許 使用電壓 Maximum operating Voltage		壓敏電壓 Varistor Voltage	最大限制電壓 Maximum clamping Voltage		最大通流容量 Maximum Withstanding Surge Current (8/20 $\mu$ S)	最大能量耐量 Maximum Energy (2ms)	最大靜態 功率 Rated Wattage	靜態電容量 (參考值) (1K Hz) Capacitance (Reference)
	AC (V)	DC (V)		V <sub>0.1mA</sub> (V)	V <sub>c</sub> (V)				
FNR-05K180	11	14	18 (16.2~19.8)	40	1	100	0.4	0.01	1600
FNR-05K220	14	18	22 (19.8~24.2)	48	1	100	0.5	0.01	1300
FNR-05K270	17	22	27 (24.3~29.7)	60	1	100	0.6	0.01	1050
FNR-05K330	20	26	33 (29.7~36.3)	73	1	100	0.8	0.01	900
FNR-05K390	25	31	39 (35.1~42.9)	86	1	100	0.9	0.01	500
FNR-05K470	30	38	47 (42.3~51.7)	104	1	100	1.1	0.01	450
FNR-05K560	35	45	56 (50.4~61.6)	123	1	100	1.3	0.01	400
FNR-05K680	40	56	68 (61.2~74.8)	150	1	100	1.6	0.01	350
FNR-05K820	50	65	82 (73.8~90.2)	155	5	400	1.8	0.1	250
FNR-05K101	60	85	100 (90~110)	175	5	400	2.2	0.1	200
FNR-05K121	75	100	120 (108~132)	210	5	400	2.5	0.1	170
FNR-05K151	95	125	150 (135~165)	260	5	400	4.0	0.1	140
FNR-05K181	115	150	180 (162~198)	315	5	400	4.5	0.1	110
FNR-05K201	130	170	200 (180~220)	355	5	400	5.0	0.1	80
FNR-05K221	140	180	220 (198~242)	380	5	400	6.0	0.1	70
FNR-05K241	150	200	240 (216~264)	415	5	400	6.5	0.1	70
FNR-05K271	175	225	270 (243~297)	475	5	400	8.0	0.1	65
FNR-05K301	200	250	300 (270~330)	525	5	400	8.0	0.1	55
FNR-05K331	210	275	330 (297~363)	580	5	400	8.5	0.1	60
FNR-05K361	230	300	360 (324~396)	620	5	400	10.0	0.1	50
FNR-05K391	250	320	390 (351~429)	675	5	400	10.0	0.1	50
FNR-05K431	275	350	430 (387~473)	745	5	400	12.0	0.1	45
FNR-05K471	300	385	470 (423~517)	810	5	400	13.0	0.1	40
FNR-05K511	320	415	510 (459~561)	845	5	400	14.0	0.1	39
FNR-05K561	350	460	560 (504~616)	920	5	400	14.0	0.1	39







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- 10K系列 Series

V-I Curve

Impluse Lifetime Ratings

FNR-10K180 to FNR-10K680



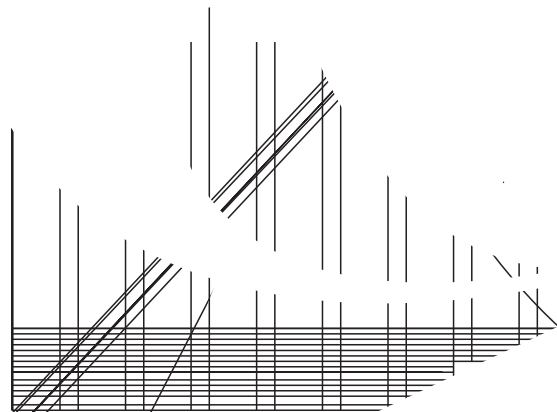
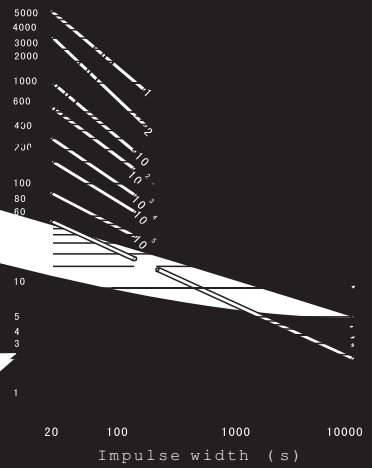


FNR-14K820 to FNR-

Max.  
Leakage Current

FNR14K820 to FNR-14K471

FNR-14K471  
FNR-14K431  
FNR-14K391  
FNR-14K361  
FNR-14K331  
FNR-14K301  
FNR-14K271  
FNR-14K241  
FNR-14K221  
FNR-14K201  
FNR-14K181  
FNR-14K151



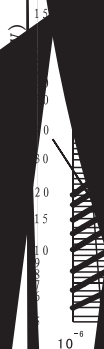
20 100 1000 10000  
Impulse width (us)

● 20K系列電性能 SERIES SPECIFICATION

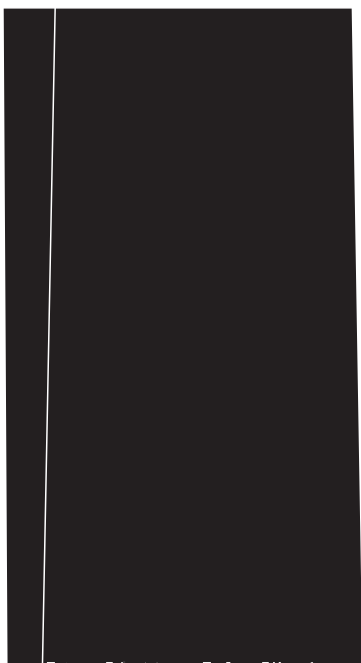
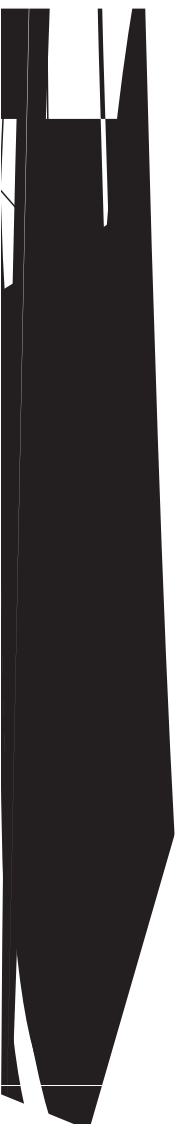
型號規格 Part Number	最大允許 使用電壓 Maximum operating Voltage		壓敏電壓 Varistor Voltage  V0.1mA (V)	最大限制電壓 Maximum clamping Voltage		最大通流容量 Maximum Withstanding Surge Current (8/20 $\mu$ S)	最大能量耐量 Maximum Energy ( 2ms) (J)	最大靜態 功率 Rated Wattage (W)	靜態電容量 (參考值) (1K Hz) Capacitance (Reference) (PF)
	AC (V)	DC (V)		Vc (V)	IP (A)				
FNR-20K180	11	14	18(16.2~19.8)	36	20	2000	11.0	0.2	18000
FNR-20K220	14	18	22(19.8~24.2)	43	20	2000	13.0	0.2	30000
FNR-20K270	17	22	27(24.3~29.7)	53	20	2000	15.0	0.2	20000
FNR-20K330	20	26	33(29.7~36.3)	65	20	2000	20.0	0.2	17000
FNR-20K390	25	31	39(35.1~42.9)	77	20	2000	24.0	0.2	15000
FNR-20K470	30	38	47(42.3~51.7)	93	20	2000	30.0	0.2	13000
FNR-20K560	35	45	56(50.4~61.6)	110	20	2000	35.0	0.2	11000
FNR-20K680	40	56	68(61.2~74.8)	135	20	2000	40.0	0.2	7000
FNR-20K820	50	65	82(73.8~90.2)	135	100	6500	27.0	1.0	5500
FNR-20K101	60	85	100(90~110)	165	100	6500	33.0	1.0	4800
FNR-20K121	75	100	120(108~220)	200	100	6500	52.0	1.0	3800
FNR-20K151	95	125	150(135~165)	250	100	6500	65.0	1.0	3000
FNR-20K181	115	150	180(162~198)	300	100	6500	78.0	1.0	2500
FNR-20K201	130	170	200(180~220)	340	100	6500	91.0	1.0	2000
FNR-20K221	140	180	220(198~242)	360	100	6500	97.0	1.0	2000
FNR-20K241	150	200	240(216~264)	395	100	6500	100.0	1.0	1800
FNR-20K271	175	225	270(243~297)	455	100	6500	117.0	1.0	1600
FNR-20K301	200	250	300(270~330)	500	100	6500	136.0	1.0	1400
FNR-20K331	210	275	330(297~363)	550	100	6500	136.0	1.0	1400
FNR-20K361	230	300	360(324~396)	595	100	6500	156.0	1.0	1200
FNR-20K391	250	320	390(351~429)	650	100	6500	169.0	1.0	1000
FNR-20K431	275	350	430(387~473)	710	100	6500	182.0	1.0	900
FNR-20K471	300	385	470(423~517)	775	100	6500	195.0	1.0	900
FNR-20K511	318	415	510(459~561)	840	100	6500	195.0	1.0	800
FNR-20K561	350	455	560(504~616)	925	100	6500	195.0	1.0	700
FNR-20K621	385	505	620(585~682)	1025	100	6500	195.0	1.0	500
FNR-20K681	420	560	680(612~748)	1120	100	6500	208.0	1.0	460
FNR-20K751	460	615	750(675~825)	1240	100	6500	227.0	1.0	420
FNR-20K781	485	640	780(702~858)	1290	100	6500	234.0	1.0	420
FNR-20K821	510	670	820(738~903)	1355	100	6500	247.0	1.0	400
FNR-20K911	550	745	910(819~1001)	1500	100	6500	280.0	1.0	350
FNR-20K102	625	825	1000(900~1100)	1650	100	6500	299.0	1.0	320
FNR-20K112	680	895	1100(990~1210)	1815	100	6500	325.0	1.0	300
FNR-20K182	1000	1465	1800(1620~1980)	2970	100	6500	400.0	1.0	200

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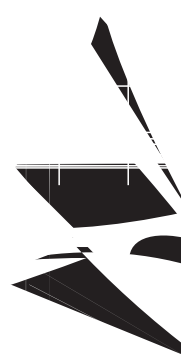
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				1300			
				140	1.0	1400	
			10000	156	1.0	1400	
		200	10000	195	1.0	1200	
		200	10000	234	1.0	1100	
		75	200	10000	286	1.0	1000
		840	200	10000	290	1.0	900
	~516)	925	200	10000	300	1.0	850
	~682)	1025	200	10000	338	1.0	800
	~748)	1120	200	10000	390	1.0	1200
	~825)	1240	200	10000	455	1.0	1100
	~858)	1290	200	10000	481	1.0	1050
	~1001)	1500	200	10000	546	1.0	900
	~1100)	1650	200	10000	585	1.0	800
	~1210)	1815	200	10000	650	1.0	700
	~1980)	2970	200	10000	700	1.0	600



FINANCIAL STATEMENTS





**• 32K系列電性能 SERIES SPECIFICATION**

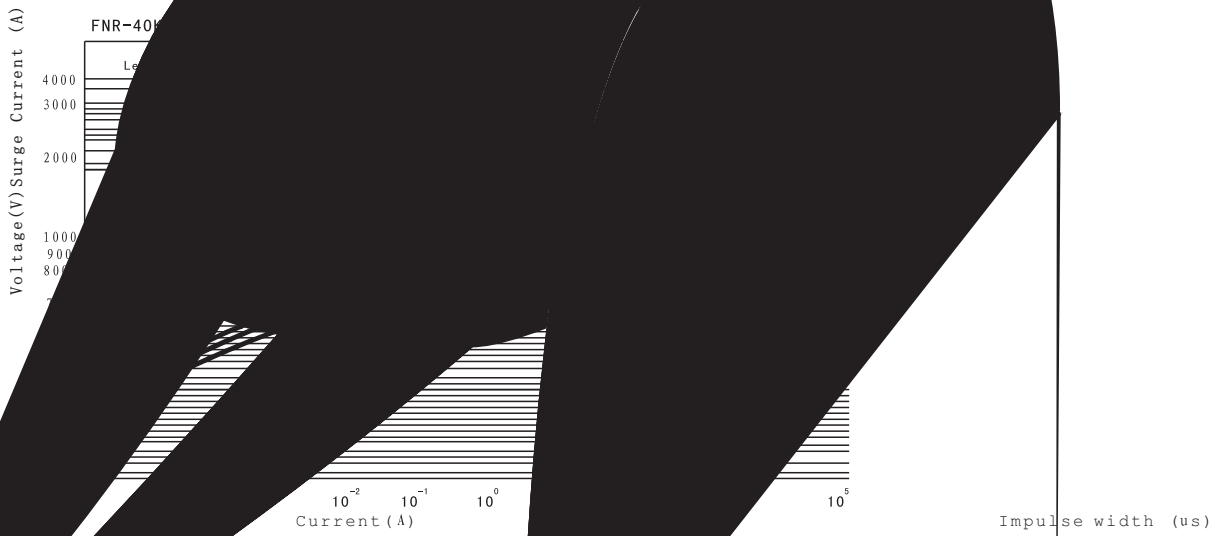
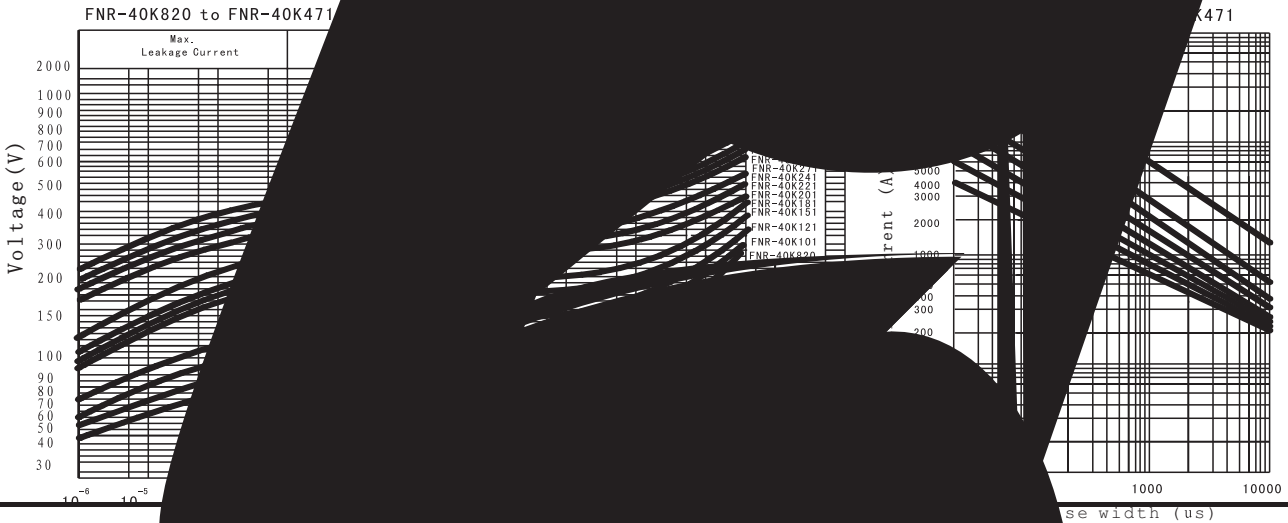
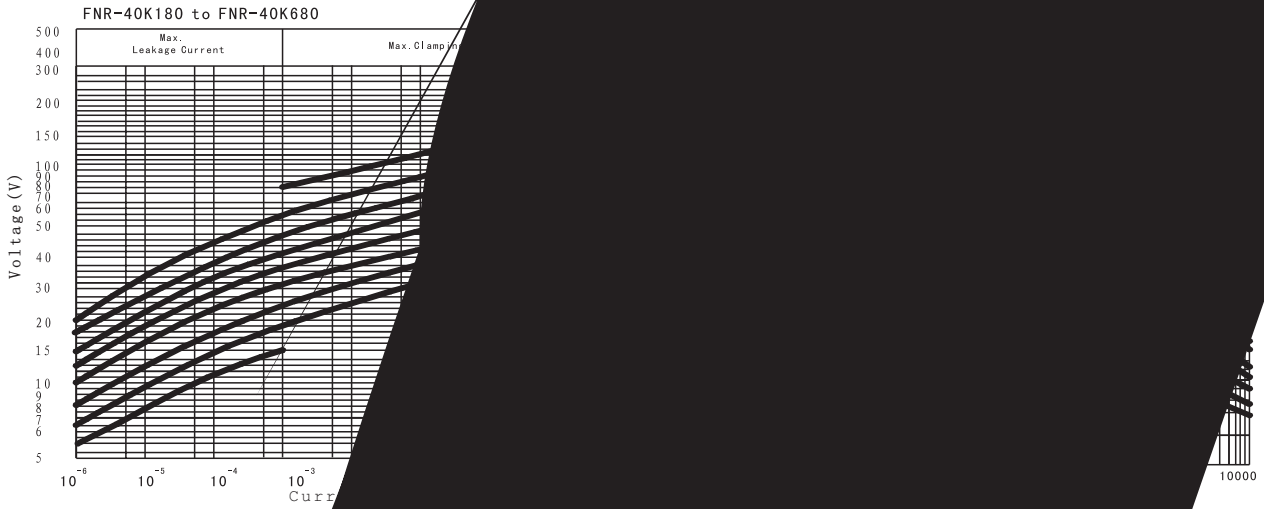
型號規格 Part Number	=大允許 使用電壓 Maximum operating Voltage		壓敏電壓 Varistor Voltage  V0.1mA (VA)	最大限制電壓 Maximum clamping Voltage		最大通流容量 Maximum Withstanding Surge Current (8/20 $\mu$ S)	最大能量耐量 Maximum Energy (2ms) (J)	最大靜態 功率 Rated Wattage (W)	靜態電容量 (參考值) (1K Hz) Capacitance (Reference) (PF)
	AC (V)	DC (V)		VC (V)	IP (A)				
FNR-32K470	30	38	47(42.3~51.7)	89	40	5000	25	1.2	11000
FNR-32K560	35	45	56(50.4~61.6)	106	40	5000	30	1.2	10000
FNR-32K680	40	56	68(61.2~74.8)	129	40	5000	32	1.2	9000
FNR-32K820	50	65	82(73.8~90.2)	156	200	20000	35	1.2	8000
FNR-32K101	60	85		190	200	20000	49	1.2	7000
FNR-32K121	75	100		216	200	20000	54	1.2	6000
FNR-32K151	95	125		270	200	20000	65	1.2	5000
FNR-32K201	130	170		360	200	20000	91	1.2	4700
FNR-32K221	140	180		385	200	20000	117	1.2	4300
FNR-32K241	150	200		395	200	20000	156	1.2	4000
FNR-32K271	175	225		455	200	20000	195	1.2	3500
FNR-32K301	200	250		500	200	20000	200	1.2	3200
FNR-32K331	210	275		550	200	20000	210	1.2	3000
FNR-32K361	230	300		595	200	20000	234	1.2	3000
FNR-32K391	250	320		650	200	20000	286	1.2	2500
FNR-32K431	275	350	90~110VA	710	200	20000	338	1.2	2250
FNR-32K471	300	385		775	200	20000	390	1.2	1900
FNR-32K511	318	415		840	200	20000	400	1.2	1800
FNR-32K561	350	455		925	200	20000	410	1.2	1700
FNR-32K621	380	505		1025	200	20000	442	1.2	3200
FNR-32K681	420	560		1120	200	20000	492	1.2	3000
FNR-32K751	460	615		1240	200	20000	559	1.2	2700
FNR-32K781	485	640		1290	200	20000	624	1.2	2600
FNR-32K821	510	670		1355	200	20000	689	1.2	2400
FNR-32K911	550	745		1500	200	20000	754	1.2	2200
FNR-32K102	625	825		1650	200	20000	819	1.2	1900
FNR-32K112	680	895		1815	200	20000	910	1.2	1700
FNR-32K182	1000	1465		2970	200	20000	920	1.2	1000





• 40K系列 Series

V-I Curve





## 用途 APPLICATIONS

MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	MODEL NUMBER	主要用
5mm	7mm	10mm	14mm	20mm	
FNR-05 K180	FNR-07 K180	FNR-10 K180	FNR-14 K180	FNR-20 K180	
FNR-05 K220	FNR-07 K220	FNR-10 K220	FNR-14 K220	FNR-20 K220	
FNR-05 K270	FNR-07 K270	FNR-10 K270	FNR-14 K270	FNR-20 K270	
FNR-05 K330	FNR-07 K330	FNR-10 K330	FNR-14 K330	FNR-20 K330	
FNR-05 K390	FNR-07 K390	FNR-10 K390	FNR-14 K390	FNR-20 K390	
FNR-05 K470	FNR-07 K470	FNR-10 K470	FNR-14 K470	FNR-20 K470	
FNR-05 K560	FNR-07 K560	FNR-10 K560	FNR-14 K560	FNR-20 K560	
FNR-05 K680	FNR-07 K680	FNR-10 K680	FNR-14 K680	FNR-20 K680	
FNR-05 K820	FNR-07 K820	FNR-10 K820	FNR-14 K820	FNR-20 K820	
FNR-05 K101	FNR-07 K101	FNR-10 K101	FNR-14 K101	FNR-20 K101	
FNR-05 K121	FNR-07 K121	FNR-10 K121	FNR-14 K121	FNR-20 K121	
FNR-05 K151	FNR-07 K151	FNR-10 K151	FNR-14 K151	FNR-20 K151	
FNR-05 K181	FNR-07 K181	FNR-10 K181	FNR-14 K181	FNR-20 K181	
FNR-05 K201	FNR-07 K201	FNR-10 K201	FNR-14 K201	FNR-20 K201	
FNR-05 K221	FNR-07 K221	FNR-10 K221	FNR-14 K221	FNR-20 K221	
FNR-05 K241	FNR-07 K241	FNR-10 K241	FNR-14 K241	FNR-20 K241	
FNR-05 K271	FNR-07 K271	FNR-10 K271	FNR-14 K271	FNR-20 K271	
FNR-05 K301	FNR-07 K301	FNR-10 K301	FNR-14 K301	FNR-20 K301	
FNR-05 K331	FNR-07 K331	FNR-10 K331	FNR-14 K331	FNR-20 K331	
FNR-05 K361	FNR-07 K361	FNR-10 K361	FNR-14 K361	FNR-20 K361	
FNR-05 K391	FNR-07 K391	FNR-10 K391	FNR-14 K391	FNR-20 K391	

MODEL NUMBER 5mm	MODEL NUMBER 7mm	MODEL NUMBER 10mm	MODEL NUMBER 14mm	MODEL NUMBER 20mm	主要用途 Recommended Applications
FNR-05 K431 FNR -05 K471	FNR-07 K431 FNR-07 K471	FNR-10 K431 FNR-10 K471	FNR-14 K431 FNR-14 K471	FNR-20 K431 FNR-20 K471	<ul style="list-style-type: none"> <li>AC200-220V Line-Line Applications</li> <li>AC100V to 220V. Line-Ground Applications</li> <li>Ac200-220電源綫間應用</li> <li>Ac100 to 220電源與對地應用</li> </ul>
FNR-05 K561	FNR-07 K561 FNR-07 K621 FNR-07 K681	FNR-10 K561 FNR-10 K621 FNR-10 K681	FNR-14 K561 FNR-14 K621 FNR-14 K681	FNR-20 K561 FNR-20 K621 FNR-20 K681	<ul style="list-style-type: none"> <li>AC 240V Line-Line Applications ( U.K., Australia, Middle East Countries)</li> <li>AC 240V電源綫間應用 ( 英國、中東、澳洲等國)</li> </ul>
		FNR-10 K751 FNR-10 K781 FNR-10 K821	FNR-14 K751 FNR-14 K781 FNR-14 K821	FNR-20 K751 FNR-20 K781 FNR-20 K821	<ul style="list-style-type: none"> <li>AC 380V, Line-Line Ground Applications</li> <li>AC 380V 電源綫間應用及電源對地間應用。</li> </ul>
		FNR-10 K911	FNR-14 K911	FNR-20 K911	<ul style="list-style-type: none"> <li>AC 415V, Line-Line line-Ground Applications</li> <li>AC 415V電源綫間應用及電源對地間應用</li> </ul>
		FNR-10 K102 FNR-10 K112	FNR-14 K102 FNR-14 K112	FNR-20 K102 FNR-20 K112	<ul style="list-style-type: none"> <li>AC 480V, Line-Line Ground Applications</li> <li>AC 480V 電源綫間應用及電源對地間應用</li> </ul>
			FNR-14 K182	FNR-20 K182	<ul style="list-style-type: none"> <li>Line Ground Applications ( For AC 1200V Withstanding Test)</li> <li>AC 1200V電源對地間應用</li> </ul>

• 保險絲配用建議(SELECT OF FUSE in conformity to FNR Varistor):

\* 和壓敏電阻大小配合選用表 ( If conform with diameter):

Part Number	FNR05K series	FNR07K series	FNR10K series	FNR14K series	FNR20K series
Fuse rating	1 To 2 A	2 to 3A	3 to 5A	3 to 10A	5 to 15A

\* 和壓敏電阻最大峰值電流配合選用表 ( If conform with Max Peak current):

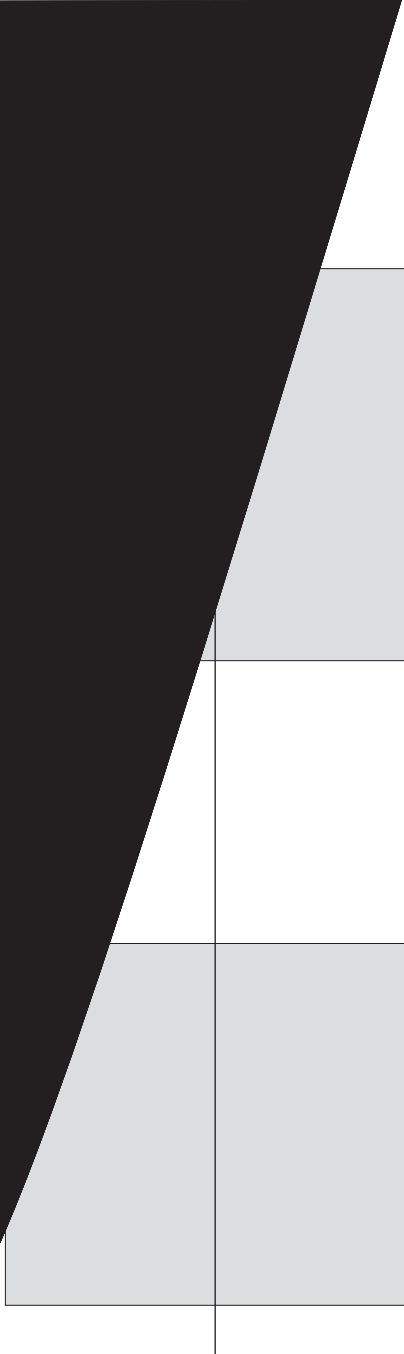
Max. Peak Current8/20 $\mu$ S 1 time (A)	Up to 500	5001 to 2000	2001 to 6000
Fuse rating	3A	5A	10A







• 氣候試驗

項目	試驗方法及測試設備	要求
	條件: $\theta_A: -40$	