

# ZINC OXIDE VARISTOR

## ■ 压敏电阻器

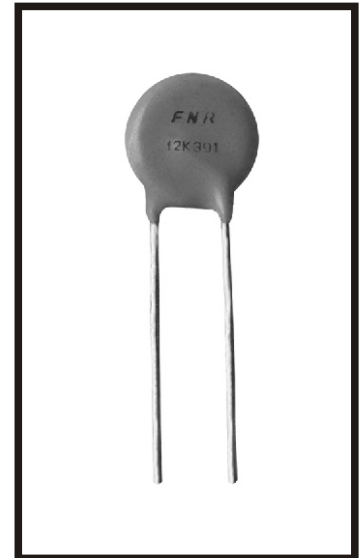
### ZINC OXIDE VARISTOR

#### ● 特性

- \* 电压范围宽 (18V—1.8KV)
- \* 反应速度快 (毫微秒级)
- \* 非线性指数大
- \* 无极性
- \* 通流量大 (2000A/cm<sup>2</sup>)
- \* 无续流
- \* 寿命长

#### ● FEATURES

- \* Widely voltage range 18v-1.8kv
- \* Fast response to the rapidly increase Voltage(Musec.)
- \* Excellent non-linearity voltage
- \* Symmetric V-I characteristics
- \* Great withstanding surge current (2000A/cm<sup>2</sup>)
- \* No follow-on current
- \* Long life
- \*



#### ● 订货方式 HOW TO ORDER

<p>F</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 广东风华高科技集团有限公司                  Fenghua Advanced Technology(Group) CO.,LTD.             </div>	<p>NR</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 非线性电阻                  Non-Linear Resistor             </div>	<p>05</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 瓷片直径(mm)                  Element Diameter                 <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td>05</td> <td>5</td> </tr> <tr> <td>40</td> <td>40</td> </tr> </table> </div>	05	5	40	40	<p>K</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 允许误差                  Tolerance                 <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td>K</td> <td>±10%</td> </tr> <tr> <td>M</td> <td>±20%</td> </tr> </table> </div>	K	±10%	M	±20%	<p>180</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 压敏电压 (V)                  Varistor Voltage                 <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td>180=18×10<sup>0</sup></td> </tr> <tr> <td>181=18×10<sup>1</sup></td> </tr> <tr> <td>182=18×10<sup>2</sup></td> </tr> </table> </div>	180=18×10 <sup>0</sup>	181=18×10 <sup>1</sup>	182=18×10 <sup>2</sup>	<p>T</p> <div style="border: 1px solid black; padding: 5px; width: 100%;">                 包装方式                 <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <tr> <td>B</td> <td>散包装 Bulk</td> </tr> <tr> <td>T</td> <td>编带包装 Tape &amp; Reel</td> </tr> </table> </div>	B	散包装 Bulk	T	编带包装 Tape & Reel
05	5																			
40	40																			
K	±10%																			
M	±20%																			
180=18×10 <sup>0</sup>																				
181=18×10 <sup>1</sup>																				
182=18×10 <sup>2</sup>																				
B	散包装 Bulk																			
T	编带包装 Tape & Reel																			

#### ● 特性曲线 CHARACTERISTICS

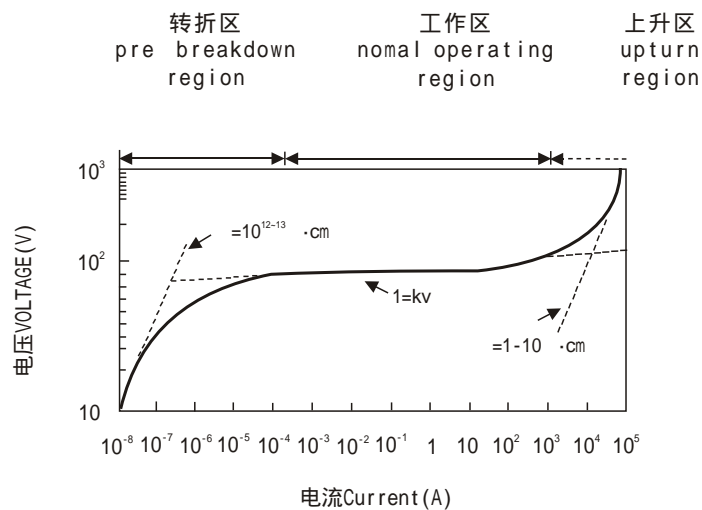


图 Fig1  
Voltage Current Characteristic



## ■ 压敏电阻器

### ZINC OXIDE VARISTOR

#### ● 测试条件 TEST CONDITIONS

项目 Item	试验方法 Test Methods
使用环境温度 Operating Temperature Range	- 40 ~ +85
保存温度 Storage Temperature Range	- 40 ~ +85
压敏电压 Varistor Voltage	除 5以下元件试验电流为DC0.1mA(V0.1mA) 外它作均为DC1mA(V1mA) Element Diameter 5mm Test Currentv (DC) 0.1mA(V0.1mA) others DC1mA(V1mA)
最大限制电压 Max Clamping Voltage	测试电流波形为8×20μs Current Waveshape8×20μs
能量耐量 Emergv	测试电流波形为2ms方波或10/1000μs Current input of Rectangular Wave 2ms or 10/1000μs
最大通流量 Max Withstanding Surge Current	测试电流波形为8×20μs Current Waveshape8×20μs

#### ● 压敏电阻器选用方法(参数)

##### 压敏电阻选取

对于过压保护方面的应用，压敏电压值应大于实际电路的电压值，一般用

$$V_{1mA} = a \cdot v / b \cdot c$$

- a—电源电压波动系数：一般取1.2
- v—电路直流工作电压(交流时为有效值)
- b—压敏电压误差，一般取0.85
- c—元件的老化系数，一般取0.9

这样计算到的V<sub>1mA</sub>实际数值是直流工作电压的1.5倍，在交流状态下要考虑电压峰值，因此计算结果应扩大  $\sqrt{2}$ 倍，在应用中可参考此公式通过实际来确定。

##### 通流量的选取

通常产品给出的通流量是按产品标准给定的波形、冲击次数和间隙时间进行脉冲试验时产品压敏电压变化率小于初值的±10%所能承受的最大电流值，产品所能承受的冲击数是波形、幅值和间隙时间的函数，当电流波形幅值降低50%时冲击次数可增加一倍，所以在实际应用中，压敏电阻器所吸收的浪涌电流应小于产品的最大通流量，以使产品有较长的工作寿命，

#### ZINC OXIDE VARISTOR SELECTION(ONLY REFERENCE)

Varistor voltage

Varistor voltage should be more than the operating voltage in over - protective circuit, The formula is shown as the following.

$$V_{1mA} = a \cdot v / b \cdot c$$

- a-power Voltage ripple coefficient usually take 1.2
- v-DC Voltage(significant value only AC power)
- b-Tolerance usually take 0.85
- c-Ageing coefficient usually take 0.9

The calibrated Value is 1.5 times of DC voltage, the face value should be  $\sqrt{2}$  time of the calibrated value because of the peak voltage in alternating current power, Withstanding surge current  
In general, withstanding surge current is max, Pulse current value which determined by test conditions such as wave - shape, amplitude and internal time, when the amplitude decrease to 50% of the initial, it should be increased to 2 times of the initial in order to keep the life longer, the surge current which is absorbed by the varistor should be less than max. withstanding surge current.

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

## 防浪涌通用型压敏电阻器 GENERAL TYPE

防浪涌通用型压敏电阻器。广泛用于IC、二极管、可控硅元件，民用、军用、工业电器通讯、计测控制装置的保护。

General type is widely used in surge protection for IC, Diode, Triac semiconductor, Thyristor, Consumer, Military industry telecommunication measuring & controlling instrument, etc.

### 通用型压敏电阻器结构尺寸 (mm)

#### GENERAL TYPE DIMENSIONS (mm)

直径 Φ	电压范围 V Varistor Voltage	椭圆片 直径 D Max	引脚直 径 d± 0.1	引脚间 距 W± 1.0	椭圆片 高度 H Max	椭圆片 厚度 T Max	示意图
05	18~82	7.0	0.6	5.0	10.0	3.5	
	100~470	7.5	0.6	5.0	10.0	6.0	
07	18~470	9.0	0.6	5.0	12.0	6.0	
10	18~330	13.5	0.8	7.5	16.5	5.4	
	360~1100	14.0	0.8	7.5	17.0	8.5	
14	18~330	17.0	0.8	7.5	20.0	5.4	
	360~1100	17.5	0.8	7.5	20.5	8.5	
	1800	25.0	0.8	7.5	30.0	12.0	
20	18~330	23.0	1.0	10.0	27.0	5.5	
	360~1100	24.0	1.0	10.0	28.0	9.0	
	1800	25.0	1.0	10.0	30.0	12.0	

## 防雷型压敏电阻器 LIGHTNING ARRESTER TYPE

防雷型压敏电阻器，该产品具有通流容量大，电压范围宽、保护速度快，残压低等特点，广泛应用于半导体元件、铁路信号、通信、计测装置、通讯中转站、低压配电盘等各电气设备的浪涌吸收和防雷保卫。

Lightning arrester type is ideal for semiconductor, signal relay, telecommunication, calibrating equipment, communication intermediate station, distribution board, surge absorption and lightning-protection of all sorts of electric equipment because of the properties, with the Great withstanding surge current, wide voltage range, quick responding speed and low residual voltage etc.

### 防雷型产品结构尺寸 (mm)

#### LIGHTNING ARRESER TYPE DIMENSIONS

规格 P/N	产品尺寸 Dimensions (mm)				
	D Max	T Max	W±1.0	d±0.1	
FNR-25	30	12	15	1.2	
FNR-32	38	13	18	1.5	
FNR-40	45	13	20	1.5	

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

通用型产品系列一览表 Surge Protection Type Series

Symbol	压敏电压 Varistor Voltage $V_s$	最大允许使用电压 Maximum Operating Voltage $V_M$		最大限制电压 Maximum Clamping Voltage @8× 20 μ s $V_C$		最大通流容量 Maximum Withstanding surge Current @8×20 μ s $I_{PP}$		最大能量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态 电容量 Junction Capacitan ce $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-05K180B	18	11	14	40	1	50	100	0.3	0.01	1600
FNR-07K180B	18	11	14	36	2.5	125	250	0.8	0.02	3500
FNR-10K180B	18	11	14	36	5	250	500	1.7	0.05	7500
FNR-14K180B	18	11	14	36	10	500	1000	3.5	0.1	18000
FNR-20K180B	18	11	14	36	20	1000	2000	10	0.2	37000
FNR-05K220B	22	14	18	48	1	50	100	0.4	0.01	1300
FNR-07K220B	22	14	18	43	2.5	125	250	0.9	0.02	2800
FNR-10K220B	22	14	18	43	5	250	500	2	0.05	6000
FNR-14K220B	22	14	18	43	10	500	1000	4	0.1	15000
FNR-20K220B	22	14	18	43	20	1000	2000	13	0.2	30000
FNR-05K270B	27	17	22	60	1	50	100	0.5	0.01	1050
FNR-07K270B	27	17	22	53	2.5	125	250	1.1	0.02	2000
FNR-10K270B	27	17	22	53	5	250	500	2.5	0.05	4000
FNR-14K270B	27	17	22	53	10	500	1000	5	0.1	10000
FNR-20K270B	27	17	22	53	20	1000	2000	15	0.2	20000
FNR-05K330B	33	20	26	73	1	50	100	0.6	0.01	900
FNR-07K330B	33	20	26	65	2.5	125	250	1.3	0.02	1500
FNR-10K330B	33	20	26	65	5	250	500	3.1	0.05	3000
FNR-14K330B	33	20	26	65	10	500	1000	6	0.1	7500
FNR-20K330B	33	20	26	65	20	1000	2000	20	0.2	17000
FNR-05K390B	39	25	31	86	1	50	100	0.8	0.01	500
FNR-07K390B	39	25	31	77	2.5	125	250	1.6	0.02	1350
FNR-10K390B	39	25	31	77	5	250	500	3.7	0.05	2600
FNR-14K390B	39	25	31	77	10	500	1000	7	0.1	6500
FNR-20K390B	39	25	31	77	20	1000	2000	24	0.2	15000
FNR-05K470B	47	30	38	104	1	50	100	1	0.01	450
FNR-07K470B	47	30	38	93	2.5	125	250	2	0.02	1150
FNR-10K470B	47	30	38	93	5	250	500	4.5	0.05	2200
FNR-14K470B	47	30	38	93	10	500	1000	9	0.1	5500
FNR-20K470B	47	30	38	93	20	1000	2000	30	0.2	13000
FNR-05K560B	56	35	45	123	1	50	100	1.1	0.01	400
FNR-07K560B	56	35	45	110	2.5	125	250	2.5	0.02	950
FNR-10K560B	56	35	45	110	5	250	500	5.5	0.05	1800
FNR-14K560B	56	35	45	110	10	500	1000	10	0.1	4500
FNR-20K560B	56	35	45	110	20	1000	2000	35	0.2	11000
FNR-05K680B	68	40	56	150	1	50	100	1.3	0.01	350
FNR-07K680B	68	40	56	135	2.5	125	250	3	0.02	700
FNR-10K680B	68	40	56	135	5	250	500	6.5	0.05	1300
FNR-14K680B	68	40	56	135	10	500	1000	13	0.1	3300
FNR-20K680B	68	40	56	135	20	1000	2000	40	0.2	7000

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

通用型产品系列一览表 Surge Protection Type Series (Ctn. 1)

Symbol	压敏电压 Varistor Voltage $V_s$	最大允许使用电压 Maximum Operating Voltage $V_M$		最大限制电压 Maximum Clamping Voltage @ $8 \times 20 \mu s$ $V_C$		最大通流容量 Maximum Withstanding surge Current @ $8 \times 20 \mu s$ $I_{PP}$		最大能量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态电容量 Junction Capacitance $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-05K820B	82	50	65	145	5	200	400	1.8	0.1	250
FNR-07K820B	82	50	65	135	10	600	1200	4.2	0.25	550
FNR-10K820B	82	50	65	135	25	1250	2500	8.4	0.4	1800
FNR-14K820B	82	50	65	135	50	2500	4500	15	0.6	2900
FNR-20K820B	82	50	65	135	100	4000	6500	27	1	5500
FNR-05K101B	100	60	85	175	5	200	400	2.2	0.1	200
FNR-07K101B	100	60	85	165	10	600	1200	4.8	0.25	500
FNR-10K101B	100	60	85	165	25	1250	2500	10	0.4	1400
FNR-14K101B	100	60	85	165	50	2500	4500	18	0.5	2400
FNR-20K101B	100	60	85	165	100	4000	6500	33	1	4800
FNR-05K121B	120	75	100	210	5	200	400	2.5	0.1	170
FNR-07K121B	120	75	100	200	10	600	1200	5.9	0.25	450
FNR-10K121B	120	75	100	200	25	1250	2500	15	0.4	1100
FNR-14K121B	120	75	100	200	50	2500	4500	26	0.6	1900
FNR-20K121B	120	75	100	200	100	4000	6500	52	1	3800
FNR-05K151B	150	95	125	260	5	200	400	4	0.1	140
FNR-07K151B	150	95	125	250	10	600	1200	8	0.25	350
FNR-10K151B	150	95	125	250	25	1250	2500	20	0.4	900
FNR-14K151B	150	95	125	250	50	2500	4500	32	0.6	1500
FNR-20K151B	150	95	125	250	100	4000	6500	65	1	3000
FNR-05K181B	180	115	150	315	5	200	400	4.5	0.1	110
FNR-07K181B	180	115	150	300	10	600	1200	10	0.25	300
FNR-10K181B	180	115	150	300	25	1250	2500	23	0.4	700
FNR-14K181B	180	115	150	300	50	2500	4500	39	0.6	1250
FNR-20K181B	180	115	150	300	100	4000	6500	78	1	2500
FNR-05K201B	200	130	170	355	5	200	400	5	0.1	80
FNR-07K201B	200	130	170	340	10	600	1200	13	0.25	250
FNR-10K201B	200	130	170	340	25	1250	2500	26	0.4	500
FNR-14K201B	200	130	170	340	50	2500	4500	45	0.6	1000
FNR-20K201B	200	130	170	340	100	4000	6500	91	1	2000
FNR-05K221B	220	140	180	380	5	200	400	6	0.1	70
FNR-07K221B	220	140	180	360	10	600	1200	13	0.25	250
FNR-10K221B	220	140	180	360	25	1250	2500	30	0.4	450
FNR-14K221B	220	140	180	360	50	2500	4500	52	0.6	1000
FNR-20K221B	220	140	180	360	100	4000	6500	97	1	2000
FNR-05K241B	240	150	200	415	5	200	400	6.5	0.1	70
FNR-07K241B	240	150	200	395	10	600	1200	13	0.25	2000
FNR-10K241B	240	150	200	395	25	1250	2500	32	0.4	400
FNR-14K241B	240	150	200	395	50	2500	4500	52	0.6	900
FNR-20K241B	240	150	200	395	100	4000	6500	100	1	1800

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

通用型产品系列一览表 Surge Protection Type Series (Ctn. 2)

Symbol	压敏电压 Varistor Voltage $V_s$	最大允许使用电压 Maximum Operating Voltage $V_M$		最大限制电压 Maximum Clamping Voltage @8×20 μs $V_C$		最大通流容量 Maximum Withstanding surge Current @8×20 μs $I_{PP}$		最大能量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态电容量 Junction Capacitance $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-05K271B	270	175	225	475	5	200	400	8	0.1	65
FNR-07K271B	270	175	225	455	10	600	1200	15	0.25	170
FNR-10K271B	270	175	225	455	25	1250	2500	40	0.4	350
FNR-14K271B	270	175	225	455	50	2500	4500	65	0.6	750
FNR-20K271B	270	175	225	455	100	4000	6500	117	1	1600
FNR-05K301B	300	200	250	525	5	200	400	8	0.1	55
FNR-07K301B	300	200	250	500	10	600	1200	17	0.25	150
FNR-10K301B	300	200	250	500	25	1250	2500	35	0.4	325
FNR-14K301B	300	200	250	500	50	2500	4500	71	0.6	650
FNR-20K301B	300	200	250	500	100	4000	6500	136	1	1400
FNR-05K331B	330	210	275	580	5	200	400	8.5	0.1	60
FNR-07K331B	330	210	275	550	10	600	1200	20	0.25	150
FNR-10K331B	330	210	275	550	25	1250	2500	39	0.4	325
FNR-14K331B	330	210	275	550	50	2500	4500	78	0.6	650
FNR-20K331B	330	210	275	550	100	4000	6500	136	1	1400
FNR-05K361B	360	230	300	620	5	200	400	10	0.1	50
FNR-07K361B	360	230	300	595	10	600	1200	20	0.25	1300
FNR-10K361B	360	230	300	595	25	1250	2500	32	0.4	300
FNR-14K361B	360	230	300	595	50	2500	4500	84	0.6	550
FNR-20K361B	360	230	300	595	100	4000	6500	156	1	1200
FNR-05K391B	390	250	320	675	5	200	400	10	0.1	50
FNR-07K391B	390	250	320	650	10	600	1200	22	0.25	130
FNR-10K391B	390	250	320	650	25	1250	2500	52	0.4	270
FNR-14K391B	390	250	320	650	50	2500	4500	91	0.6	500
FNR-20K391B	390	250	320	650	100	4000	6500	169	1	1000
FNR-05K431B	430	275	350	745	5	200	400	12	0.1	45
FNR-07K431B	430	275	350	710	10	600	1200	26	0.25	110
FNR-10K431B	430	275	350	710	25	1250	2500	58	0.4	250
FNR-14K431B	430	275	350	710	50	2500	4500	97	0.6	450
FNR-20K431B	430	275	350	710	100	4000	6500	182	1	900
FNR-05K471B	470	300	385	810	5	200	400	13	0.1	40
FNR-07K471B	470	300	385	775	10	600	1200	26	0.25	100
FNR-10K471B	470	300	385	775	25	1250	2500	58	0.4	230
FNR-14K471B	470	300	385	775	50	2500	4500	104	0.6	440
FNR-20K471B	470	300	385	775	100	4000	6500	195	1	900
FNR-10K511B	510	318	415	840	25	1250	2500	58	0.4	200
FNR-14K511B	510	318	415	840	50	2500	4500	104	0.6	380
FNR-20K511B	510	318	415	840	100	4000	6500	195	1	800
FNR-10K561B	560	350	455	925	25	1250	2500	58	0.4	180
FNR-14K561B	560	350	455	925	50	2500	4500	104	0.6	345

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

通用型产品系列一览表 Surge Protection Type Series (Ctn. 3)

Symbol	压敏电压 Varistor Voltage $V_s$	最大允许使用电压 Maximum Operating Voltage $V_M$		最大限制电压 Maximum Clamping Voltage @ $8 \times 20 \mu s$ $V_C$		最大通流容量 Maximum Withstanding surge Current @ $8 \times 20 \mu s$ $I_{PP}$		最大能量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态电容量 Junction Capacitance $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-20K561B	560	350	455	925	100	4000	6500	195	1	700
FNR-10K621B	620	380	505	1025	25	1250	2500	58	0.4	130
FNR-14K621B	620	380	505	1025	50	2500	4500	110	0.6	250
FNR-20K621B	620	380	505	1025	100	4000	6500	195	1	500
FNR-10K681B	680	420	560	1120	25	1250	2500	60	0.4	130
FNR-14K681B	680	420	560	1120	50	2500	4500	117	0.6	250
FNR-20K681B	680	420	560	1120	100	4000	6500	208	1	460
FNR-10K751B	750	460	615	1240	25	1250	2500	65	0.4	120
FNR-14K751B	750	460	615	1240	50	2500	4500	130	0.6	230
FNR-20K751B	750	460	615	1240	100	4000	6500	227	1	420
FNR-10K781B	780	485	640	1290	25	1250	2500	65	0.4	120
FNR-14K781B	780	485	640	1290	50	2500	4500	136	0.6	230
FNR-20K781B	780	485	640	1290	100	4000	6500	234	1	420
FNR-10K821B	820	510	670	1355	25	1250	2500	71	0.4	110
FNR-14K821B	820	510	670	1355	50	2500	4500	143	0.6	200
FNR-20K821B	820	510	670	1355	100	4000	6500	247	1	400
FNR-10K911B	910	550	745	1500	25	1250	2500	78	0.4	100
FNR-14K911B	910	550	755	1500	50	2500	4500	156	0.6	180
FNR-20K911B	910	550	755	1500	100	4000	6500	280	1	350
FNR-10K102B	1000	625	825	1650	25	1250	2500	84	0.4	90
FNR-14K102B	1000	625	825	1650	50	2500	4500	169	0.6	150
FNR-20K102B	1000	625	825	1650	100	4000	6500	299	1	320
FNR-10K112B	1100	680	895	1815	25	1250	2500	91	0.4	80
FNR-14K112B	1100	680	895	1815	50	2500	4500	182	0.6	150
FNR-20K112B	1100	680	895	1815	100	4000	6500	325	1	300
FNR-14K182B	1800	1000	1465	2970	50	2500	4500	312	0.6	100
FNR-20K182B	1800	1000	1465	2970	100	4000	6500	400	1	200

# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

防雷型产品系列一览表 LIGHTNING ARRESER TYPE Series List

Symbol	压敏电压 Varistor Voltage $V_s$	最大允许使用电压 Maximum Operating Voltage $V_M$		最大限制电压 Maximum Clamping Voltage @8 $\times 20 \mu s$ $V_C$ $I_P$		最大通流容量 Maximum Withstanding surge Current @8 $\times 20 \mu s$ $I_{PP}$		最大能量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态电容量 Junction Capacitance $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-25K470B	47	30	38	89	40	1250		15	1	10000
FNR-32K470B	47	30	38	89	40	2500		25	1.2	11000
FNR-40K470B	47	30	38	89	40	5000		40	1.4	15000
FNR-25K560B	56	35	45	106	40	1250		18	1	8000
FNR-32K560B	56	35	45	106	40	2500		30	1.2	10000
FNR-40K560B	56	35	45	106	40	5000		45	1.4	14000
FNR-25K680B	68	40	56	129	40	1250		21	1	7000
FNR-32K680B	68	40	56	129	40	2500		32	1.2	9000
FNR-40K680B	68	40	56	129	40	5000		50	1.4	13000
FNR-25K820B	82	50	65	156	200	5000		23	1	6000
FNR-32K820B	82	50	65	156	200	10000		35	1.2	8000
FNR-40K820B	82	50	65	156	200	20000		60	1.4	12000
FNR-25K101B	100	60	85	190	200	5000		32	1	5000
FNR-32K101B	100	60	85	190	200	10000		49	1.2	7000
FNR-40K101B	100	60	85	190	200	20000		90	1.4	11500
FNR-25K121B	120	75	100	216	200	5000		36	1	4000
FNR-32K121B	120	75	100	216	200	10000		54	1.2	6000
FNR-40K121B	120	75	100	216	200	20000		117	1.4	11000
FNR-25K151B	150	95	125	270	200	5000		39	1	3000
FNR-32K151B	150	95	125	270	200	10000		65	1.2	5000
FNR-40K151B	150	95	125	270	200	20000		156	1.4	10500
FNR-25K201B	200	130	170	360	200	5000		45	1	2400
FNR-32K201B	200	130	170	360	200	10000		91	1.2	4700
FNR-40K201B	200	130	170	360	200	20000		208	1.4	10000
FNR-25K221B	220	140	180	385	200	5000		52	1	2200
FNR-32K221B	220	140	180	385	200	10000		117	1.2	4300
FNR-40K221B	220	140	180	385	200	20000		234	1.4	9500
FNR-25K241B	240	150	200	420	200	5000		78	1	2000
FNR-32K241B	240	150	200	420	200	10000		156	1.2	4000
FNR-40K241B	240	150	200	420	200	20000		286	1.4	9000
FNR-25K271B	270	175	225	473	200	5000		117	1	1700
FNR-32K271B	270	175	225	473	200	10000		195	1.2	3500
FNR-40K271B	270	175	225	473	200	20000		308	1.4	750
FNR-25K361B	360	230	300	612	200	5000		156	1	1400
FNR-32K361B	360	230	300	612	200	10000		234	1.2	3000
FNR-40K361B	360	230	300	612	200	20000		390	1.4	6000
FNR-25K391B	390	250	320	663	200	5000		195	1	1200
FNR-32K391B	390	250	320	663	200	10000		286	1.2	2500
FNR-40K391B	390	250	320	663	200	20000		442	1.4	5000
FNR-25K431B	430	275	350	731	200	5000		234	1	1100



# 氧化锌压敏电阻 ZINC OXIDE VARISTOR

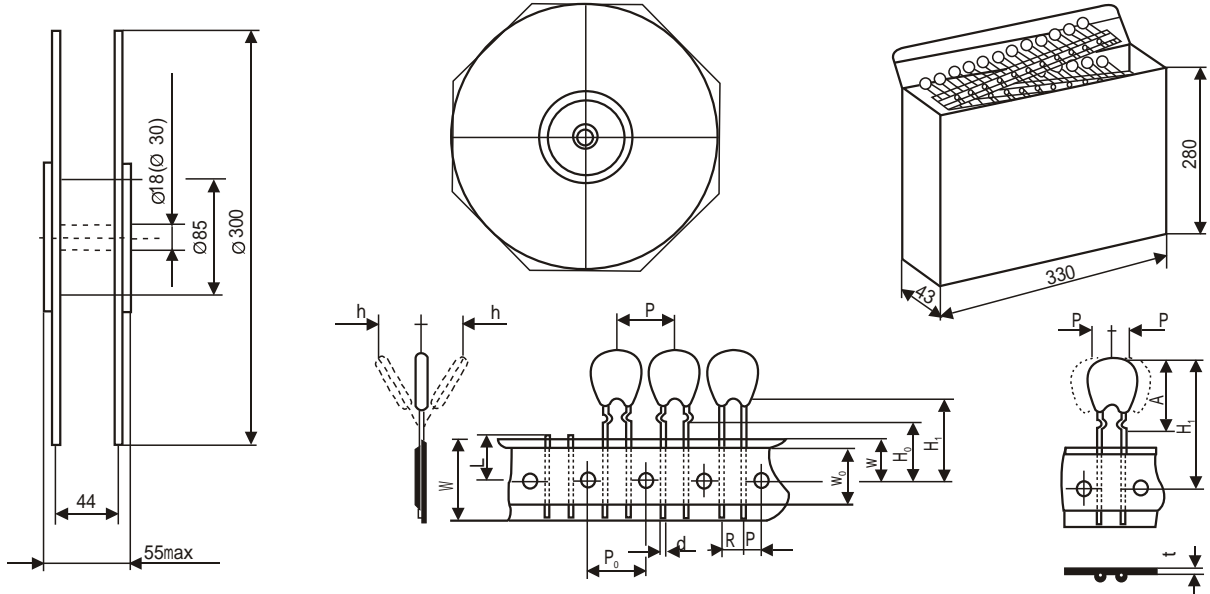
防雷型产品系列一览表 LIGHTNING ARRESER TYPE Series List (Ctn.)

Symbol	压敏电 压 Varistor Voltage $V_s$	最大允许使 用电压 Maximum Operating Voltage $V_M$		最大限制电 压 Maximum Clamping Voltage @8 $\times 20 \mu s$ $V_C$		最大通流容量 Maximum Withstanding surge Current @8 $\times 20 \mu s$ $I_{PP}$		最大能 量耐量 Maximum Energy E	功率 Rated Wattage $P_M$	最大静态电 容量 Junction Capacitance $C_J$
		VAC	V	V	A	2Ts A	1Ts A			
FNR-32K431B	430	275	350	731	200	10000		338	1.2	2250
FNR-40K431B	430	275	350	731	200	20000		494	1.4	4500
FNR-25K471B	470	300	380	799	200	5000		286	1	1000
FNR-32K471B	470	300	380	799	200	10000		390	1.2	1900
FNR-40K471B	470	300	380	799	200	20000		546	1.4	3600
FNR-25K621B	620	385	505	1054	200	5000		338	1	1500
FNR-32K621B	620	385	505	1054	200	10000		442	1.2	3200
FNR-40K621B	620	385	505	1054	200	20000		585	1.4	3300
FNR-25K681B	680	420	560	1160	200	5000		390	1	1200
FNR-32K681B	680	420	560	1160	200	10000		494	1.2	3000
FNR-40K681B	680	420	560	1160	200	20000		650	1.4	3000
FNR-25K751B	750	460	615	1275	200	5000		455	1	1100
FNR-32K751B	750	460	615	1275	200	10000		559	1.2	2700
FNR-40K751B	750	460	615	1275	200	20000		715	1.4	2500
FNR-25K781B	780	485	640	1326	200	5000		481	1	1050
FNR-32K781B	780	485	640	1326	200	10000		624	1.2	2600
FNR-40K781B	780	485	640	1326	200	20000		780	1.4	2450
FNR-25K821B	820	510	670	1400	200	5000		520	1	1000
FNR-32K821B	820	510	670	1400	200	10000		689	1.2	2400
FNR-40K821B	820	510	670	1400	200	20000		832	1.4	2400
FNR-25K911B	910	550	745	1550	200	5000		546	1	900
FNR-32K911B	910	550	745	1550	200	10000		754	1.2	2200
FNR-40K911B	910	550	745	1550	200	20000		910	1.4	2200
FNR-25K102B	1000	625	825	1700	200	5000		585	1	800
FNR-32K102B	1000	625	825	1700	200	10000		819	1.2	1900
FNR-40K102B	1000	625	825	1700	200	20000		1040	1.4	2000
FNR-25K112B	1100	680	895	1870	200	5000		650	1	700
FNR-32K112B	1100	680	895	1870	200	10000		910	1.2	1700
FNR-40K112B	1100	680	895	1870	200	20000		1105	1.4	1800
FNR-32K182B	1800	1000	1465	3060	200	10000		975	1.2	1600
FNR-40K182B	1800	1000	1465	3060	200	20000		1300	1.4	1600

# ZINC OXIDE VARISTOR

## ● 编带尺寸 REEL DIMENSIONS

盒装 Ammo Packaging



项目 Item	符号 Code	尺寸 Dimension(mm)			
		5	7	10	14
瓷片直径Element Diameter					
产品直径 Body Diameter	D	7.5Max.	9.0Max.	13.5Max.	16.5Max.
引线直径Lead Wire Diameter	d	0.6±0.1		0.8±0.1	
元件间距Pitch of Component	P	12.7±1		25.4±1	
孔距Feed Hole Pitch	P <sub>0</sub>	12.7±3		12.7±0.3	
孔与引线距Feed Hole Center to Lead	P <sub>1</sub>	3.85±0.7		7.5±0.8	
引线间距 Lead to Lead Pitch	R	5±0.8		7.5±0.8	
元件垂直度Component Alignment	h	2.0Max.		2.0Max.	
纸带宽度Basepaper Tape Width	W <sub>0</sub>	18		18	
胶带宽度Adhesive Tape Width	W <sub>1</sub>	13Min.		13Min.	
定位孔距Hole Position	H <sub>1</sub>	9±0.5		9±0.5	
元件高度Component Height	H <sub>0</sub>	30Max.		40Max.	
弯曲部到孔心距Lead-Wire Clinch Height	H <sub>0</sub>	16±0.5		1.0Max.	
孔直径Feed Hole Diameter	L	4±0.2		4±0.2	
纸带厚度Total Tape Thickness	t	0.9Max.		0.9Max.	
孔心到引线长度Length of Clipped Lead		11Max.		11Max.	
从弯曲部分起元件高度 Component Height from Seating Plane	A	13Max.	15Max.	19.5Max.	22.5Max.
元件位置偏差 Component Position Tolerance	P	±1.3Max.		±2.0Max.	

## ● 盒装 (卷装) 数量 AMMO AND REEL PACKING QUANTITY

瓷片 Element Diameter	数量 Quantity(pcs)	
	18-270(V)	300-470(V)
05	2500	2000
07	1500	1500
10	1500	1500
14	1500	1000