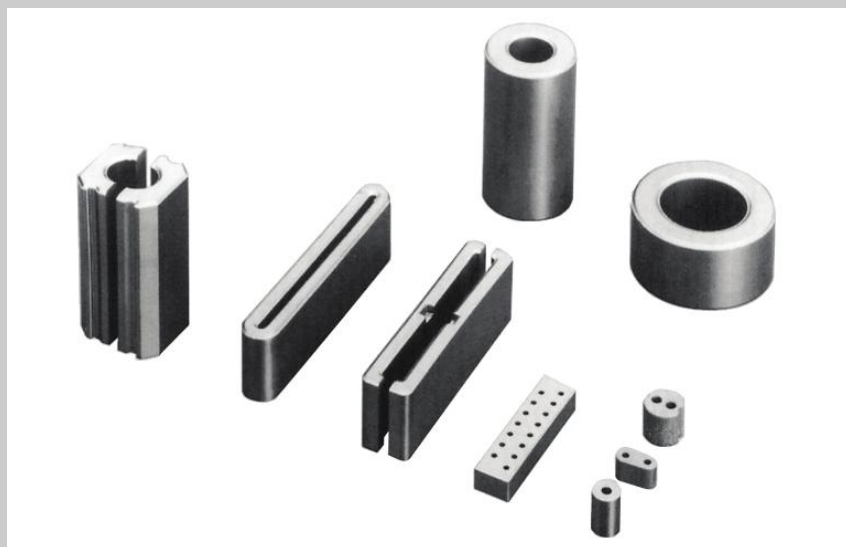


JSF

EMI 用铁氧体磁芯

EMI FERRITE CORES



南京海天金宁三环电子有限公司
NANJING HAITIAN JINNING SANHUAN CO., LTD.

铁氧体磁芯介绍

FERRITE CORES

随着电子机器高性能化，解决有关外来噪声及机器产生的噪声是必须的。

JSF作为铁氧体制造厂家，开发了最适合消除噪声的铁氧体材质、提供作为EMI用的铁氧体磁芯。K, L系列材质分别适用于10 MHz~30MHz 端子噪声及30MHz~500MHz中无辐射噪声。又根据用途准备了各种形状的磁芯。因此能满足客户的要求。

FERRITE CORES

In recent years, electronic equipment has made phenomenal advances with regard to performance.

Although much more sophisticated than before, electronic equipment has also become more susceptible to EMI(electromagnetic interference)problems. Thus growing attention is being directed to noise interference caused by external equipment and by various components inside the same equipment.

In response, JSF is developing special ferrite materials suitable for noise suppression, and is supplying a wide variety of EMI ferrite cores that feature original ferrite materials.

JSF produces series of EMI ferrite cores, the Material-K series and Material-L series, These series are designed to control terminal noise ranging from 10 MHz to 30MHz in frequency and suited for the control of unnecessary radiation noise from 30 MHz up to 500 MHz. These cores come in a wide variety of shapes to match the customers' needs.

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材质特性 Characteristics of EMI ferrite cores

材质名 Material			K32	L51	K14	K26
初始磁导率 Initial permeability	μ_{iac}	—	700	350	100	40
饱和磁通密度 Saturation magnetic flux density	Bs	m T	300	340	360	350
剩余磁通密度 Residual magnetic flux density	Br	m T	160	260	230	100
矫顽力 Coercivity	Hc	A/m	30	40	320	750
相对损耗因素 Relative loss factor	$\tan \delta/\mu$	$\times 10^{-5}$	1.7	1.5	5.5	15
		MHz	0.4	0.5	6.0	10
温度系数 Temperature coefficient	$\alpha \mu r$	$\times 10^{-6}$	7	20	10	10~20
居里温度 Curie temperature	Tc	°C	>160	>200	>300	>300
电阻率 Resistivity	ρ	$\Omega \cdot m$	10^6	10^5	10^5	10^6
密度 Density	d	$\times 10^3 kg/m^3$	5.0	5.0	4.9	4.9

※上述值为室温在 20°C±5°C 条件下，环形磁芯的标准特性。

(FR25Ø/25Ø/5)

Above figures show the standard characteristics of toroidal cores at a room temperature of 20°C±5°C.

材料的选定 Material selection

μ' 的水平越低， $|Z|$ 的峰值向高频率移动的倾向越明显。作为数据传输线无辐射的应用，普遍用的是具有广频率范围衰减特性的 K32 材 ($\mu' = 700$)。但适用于较高频率的是 L51 材 ($\mu' = 350$) 或 K14 材 ($\mu' = 100$)。

It is known that the lower the μ' value of a core material, the higher the frequency at which the core impedance $|Z|$ reaches a peak. Accordingly, K32 core materials (of $\mu' = 700$) are generally used to reduce data line radiation noise, because K32 has a stable noise attenuation effect over a wide frequency range. But to suppress higher-frequency noise, L51 ($\mu' = 350$) or K14 ($\mu' = 100$) materials are employed.

材质特性 Characteristics of EMI ferrite cores

阻抗与材料参数的关系 Impedance vs. material constant

磁芯的阻抗 $Z=R+jX$ 中，阻抗成分 R 与材料 μ'' 成比例，电抗 $X(=\omega L)$ 与材料参数 μ' 成比例。因此，从材料 μ' 、 $\mu''-f$ 特性曲线中也可以看出，在高频侧 μ' 成分在阻抗上起很大的作用。磁芯的阻抗 $|Z|$ 与被材料参数 μ' 、 μ'' 来决定的材料阻抗 $|Z_c|$ 的关系为：

The impedance of a ferrite core is arrived at by the equation $Z=R+jX$. In this equation, the core's resistance R varies in proportion to the material constant μ'' of the core material. The core's reactance $X(=\omega L)$ varies in proportion to the material constant μ' of the same core material. Therefore, as is evident from the μ' and μ'' curves shown on the next page, the μ'' value is more influential than the μ' value in the determination of the impedance level in the high-frequency range. The core's impedance value $|Z|$ is different from the core material's impedance value $|Z_c|$. The material impedance is determined by μ' 、 μ'' . These two values have the following relation:

$$|Z| = \frac{Ae}{Le} N^2 |Z_c|$$

$|Z|$: 磁芯的阻抗值

Core impedance

Ae : 平均截面积

Average cross-section area

Le : 平均磁路长度

Average magnetic path length

N : 线圈匝数

Number of turns

$|Z_c|$: “材料阻抗”

“Material impedance”

即：材料 $|Z_c|$ 乘上系数 Ae/Le (及线圈匝数的平方)。可算出任意形状的阻抗值。环状磁芯的形状系数可以按下列公式算出来：

The above equation indicates that the impedance of a core to be produced can be estimated from the impedance of the core material, by deciding Ae , Le and N . In the case of a ring core, for example, the shape factor Ae/Le can be derived by the following equation to estimate the ring core's impedance:

$$\frac{Ae}{Le} = \frac{C}{2\pi} \log e \frac{A}{B}$$

A : 外径

Outer diameter

B : 内径

Inner diameter

C : 高度

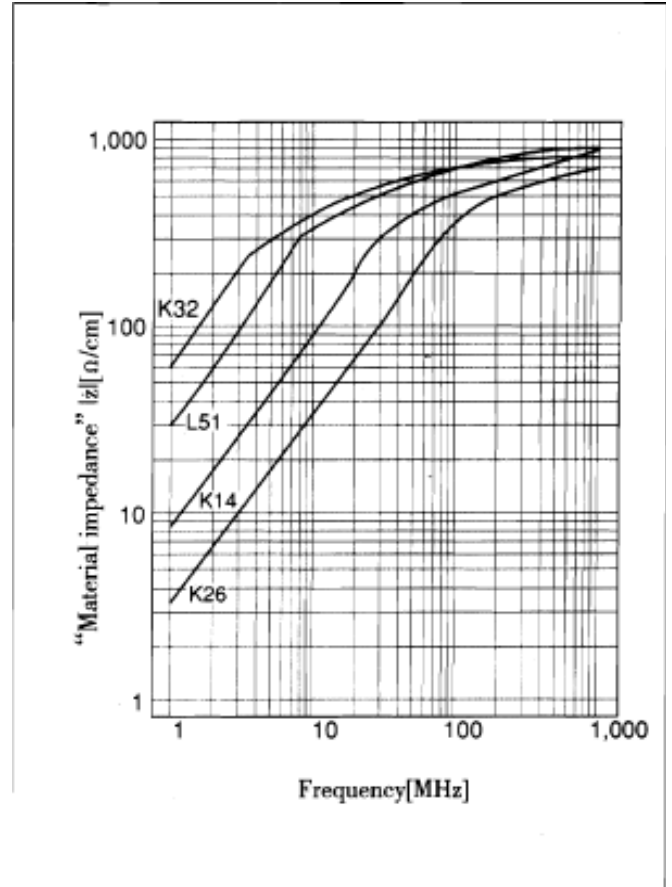
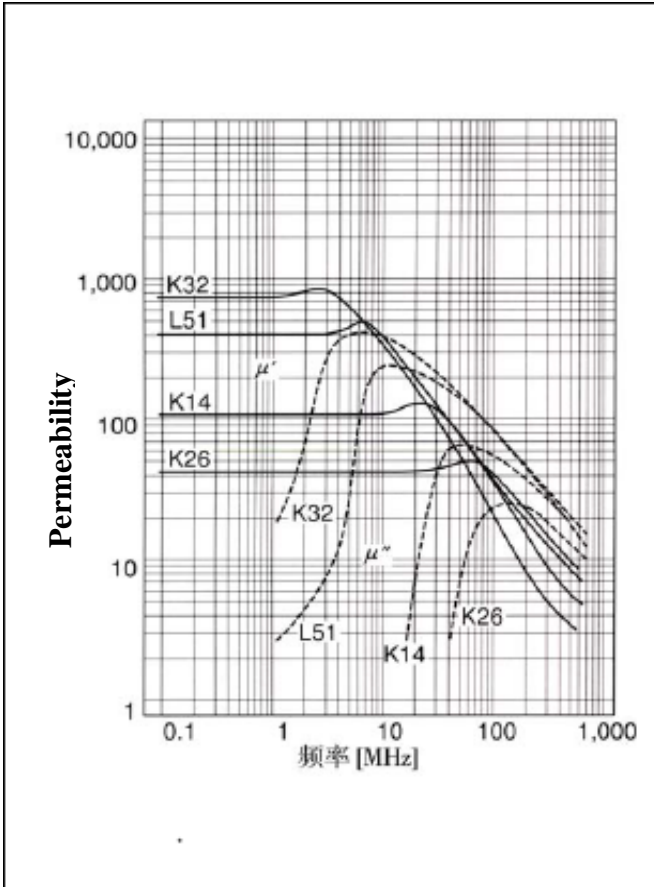
Height

μ' 及 μ'' 的频率特性 [$\mu = \mu' - j \mu''$]

阻抗的频率特性

Characteristics of μ' and μ'' by frequency [$\mu = \mu' - j \mu''$]

Impedance characteristic frequency



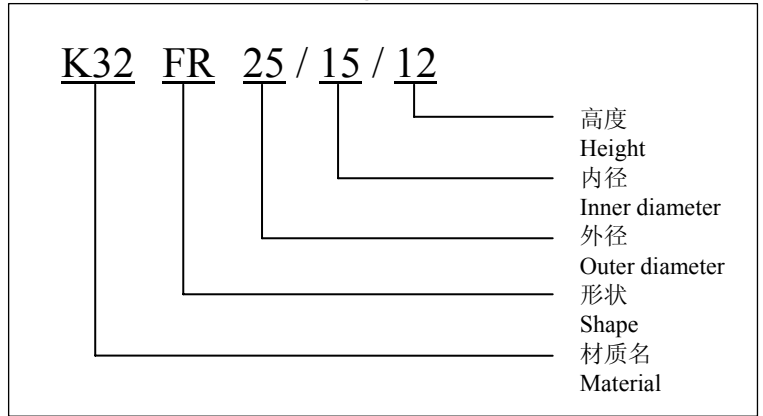
※如前所述，在左图 $|z|$ 的值 [Ω / cm] 上乘以形状系数 A_e/L_e [cm] 即可算出 K、L 材系磁芯转动一次的阻抗值 $|Z|$ 。

※Supposing that the number of turns (N) is 1, the impedance $|Z|$ of a Material-K or Material-L core can be obtained by multiplying the value of the "material impedance" $|z|$ [Ω / cm] shown in the above graph by the value of the shape factor A_e/L_e [cm].

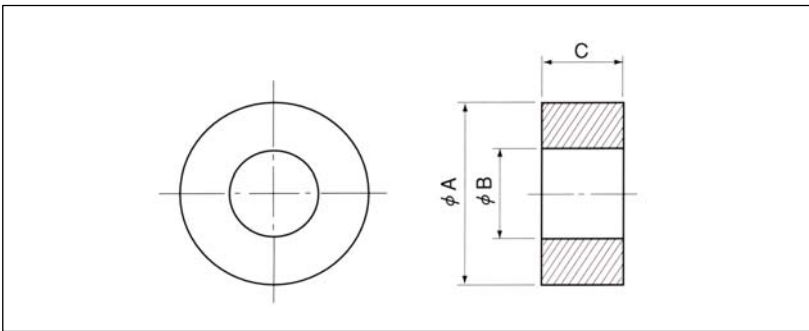
环型磁芯 Ring cores



产品号码 Naming of core models



形状 Shape



尺寸 Dimension

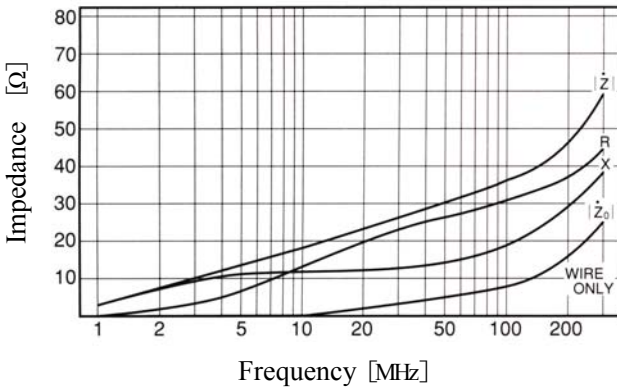
单位Unit: mm

形状号码 Shape code	外径(A) Outer diameter(A)	内径(B) Inner diameter(B)	高度 (C) Height (C)	适用材质 Material used	
FR5. 1/4. 1/5	5. 1±0. 15	4. 1±0. 15	5. 0±0. 2	K32	
FR6. 9/5. 5/5	6. 9±0. 15	5. 5±0. 15	5. 0±0. 2		
FR7. 6/3. 6/4. 3	7. 6±0. 05/-0. 4	3. 6±0. 05/-0. 4	4. 3±0. 2		
FR7. 8/4. 1/4	7. 8±0. 3	4. 1±0. 2	4. 0±0. 2		
FR9/5. 3/8	9. 0±0. 2	5. 3±0. 15	8. 0±0. 2		
FR10. 5/7/5	10. 5±0. 2	7. 0±0. 2	5. 5±0. 3		
FR11/5/9	11. 0±0. 3	5. 0±0. 2	9. 0±0. 3		
FR13/7/5	13. 0±0. 4	7. 0±0. 3	5. 0±0. 3		L51
FR13/7/6	13. 0±0. 4	7. 0±0. 3	6. 3±0. 3		K14
FR16/10/7	16. 0±0. 5	10. 0±0. 4	7. 0±0. 3		
FR16/10/10	16. 0±0. 5	10. 0±0. 4	10. 0±0. 4		
FR16. 5/8/13	16. 5±0. 5	8. 0±0. 3	13. 0±0. 4		
FR16. 5/8/16	16. 5±0. 4	8. 0±0. 3	16. 0±0. 5		
FR19/10/10	19. 0±0. 5	10. 0±0. 4	9. 9±0. 3		K26
FR25/15/12	25. 0±0. 5	15. 0±0. 5	12. 0±0. 3		
FR28/16/13	28. 0±0. 5	16. 0±0. 5	13. 0±0. 4		
FR28/16/20	28. 0±0. 5	16. 0±0. 5	20. 0±0. 6		
FR40/27/15	40. 55±0. 7	27. 4±0. 5	15. 0±0. 4		

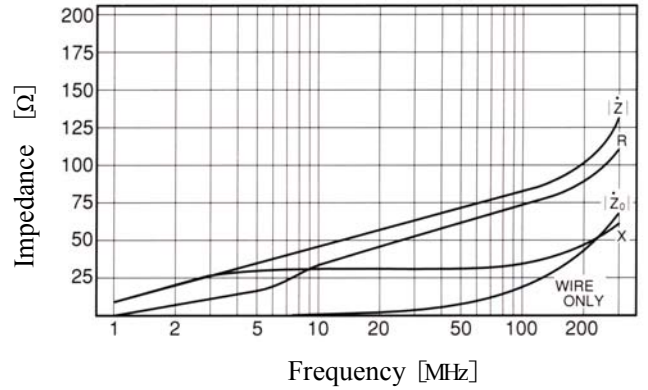
阻抗—频率特性(线匝一次) Impedance characteristics by frequency [1 turn]

●K, L材质

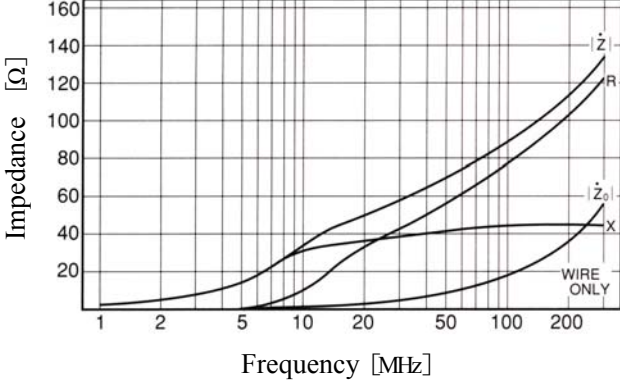
K32FR13/7/5 TEST WIRE: 0.5φ2-UEW 20mm IT



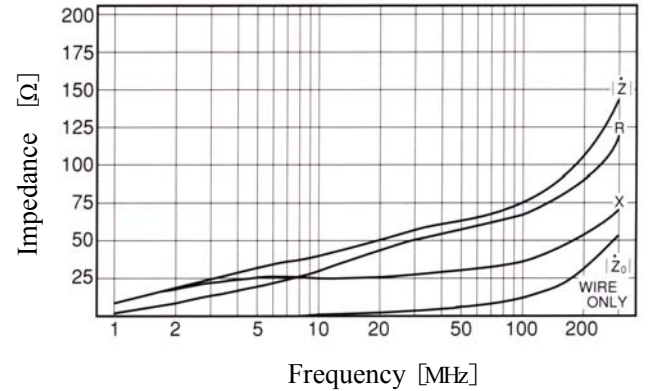
K32FR19/10/10 TEST WIRE: 0.5φ2-UEW 30mm IT



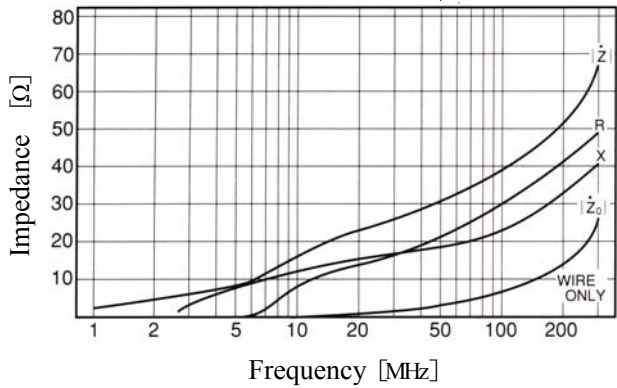
L51FR11/5/9 TEST WIRE: 0.5φ2-UEW 35mm IT



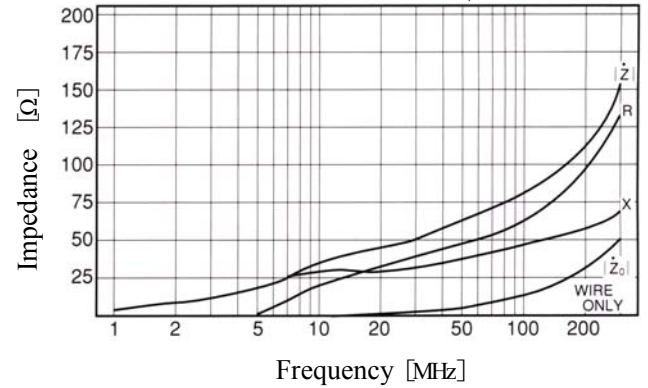
K32FR25/15/12 TEST WIRE: 0.5φ2-UEW 35mm IT



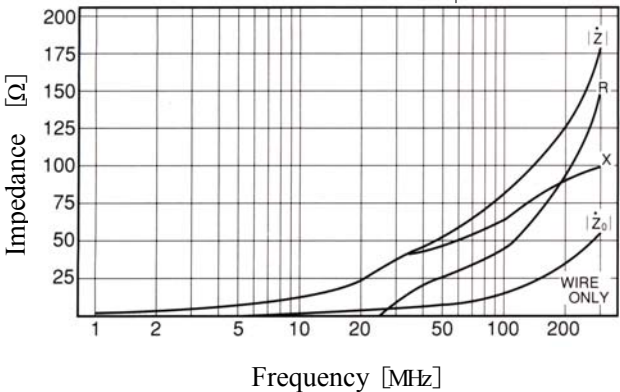
L51FR13/7/5 TEST WIRE: 0.5φ2-UEW 20mm IT



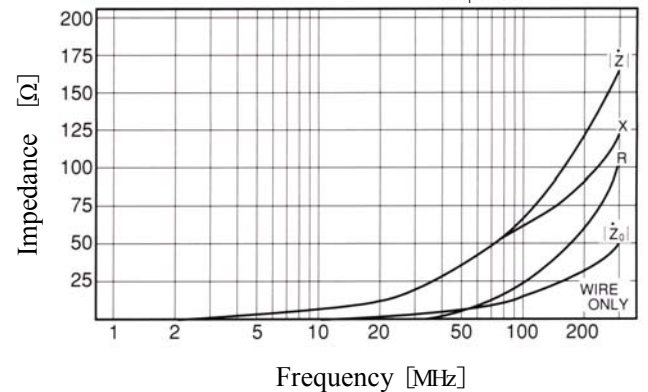
L51FR25/15/12 TEST WIRE: 0.5φ2-UEW 35mm IT



K14FR25/15/12 TEST WIRE: 0.5φ2-UEW 35mm IT



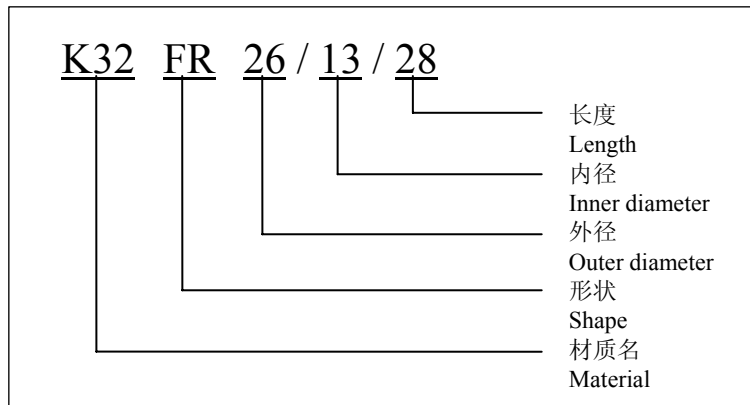
K26FR25/15/12 TEST WIRE: 0.5φ2-UEW 35mm IT



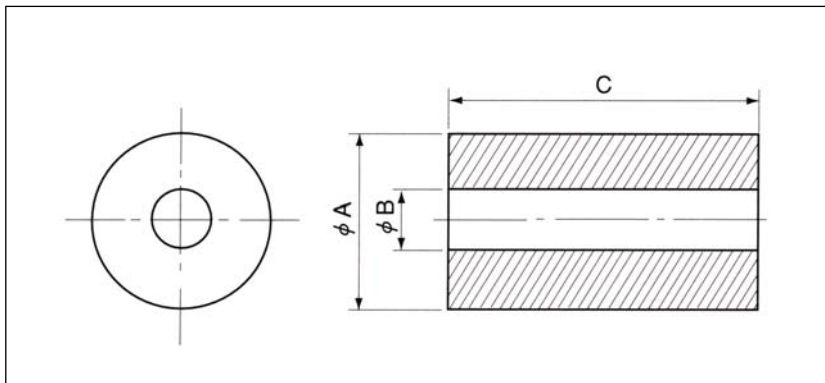
管型磁芯 Sleeve cores



产品号码 Naming of core models



形状 Shape

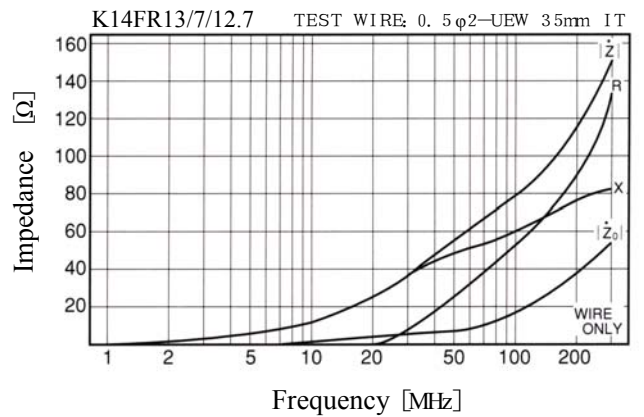
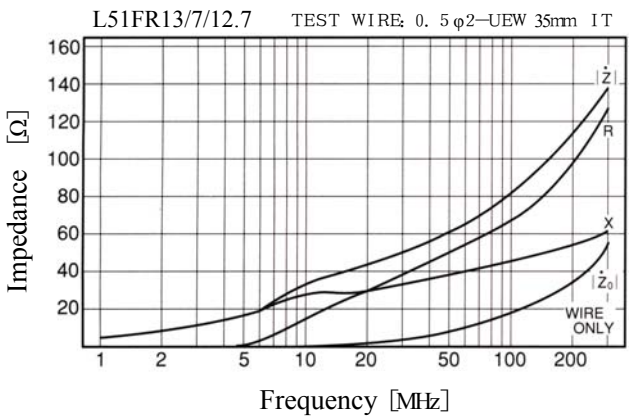
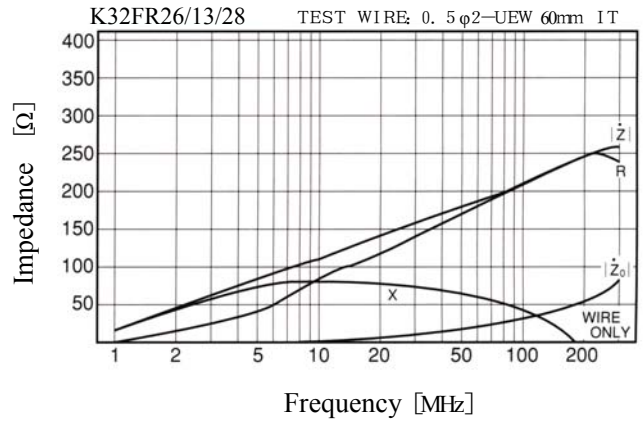
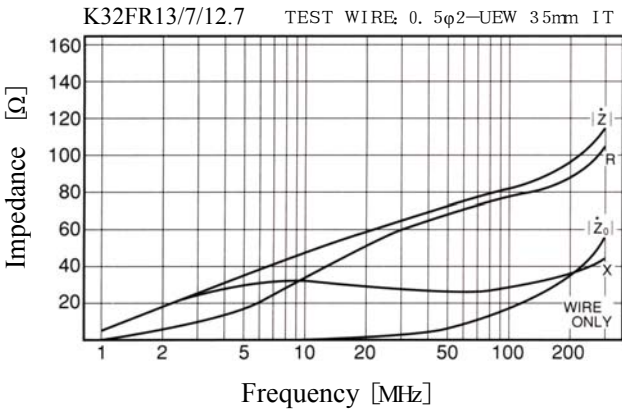
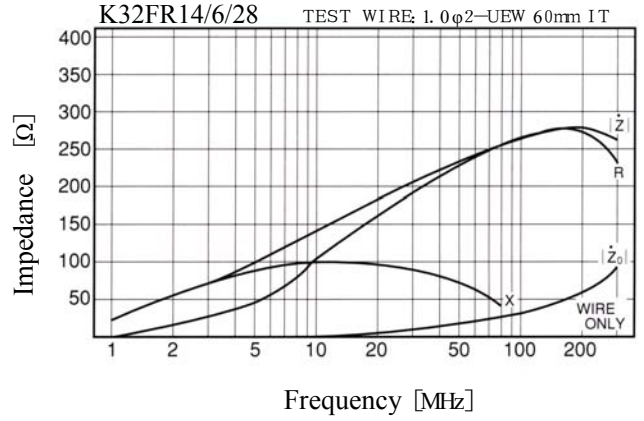
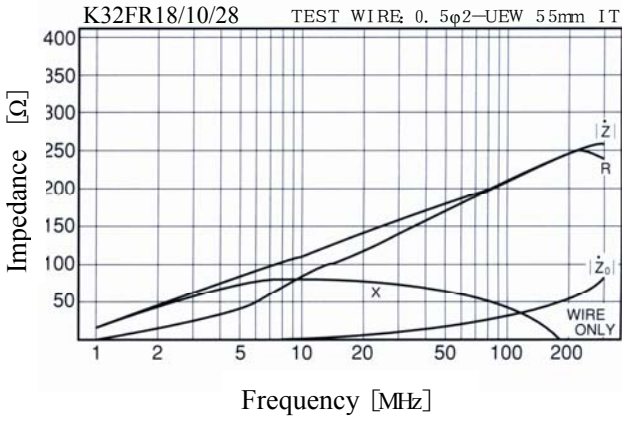


尺寸 Dimension

单位Unit: mm

形状号码 Shape code	外径(A) Outer diameter(A)	内径(B) Inner diameter(B)	高度 (C) Height (C)	适用材质 Material used	
FR4. 2/3. 2/5	4. 2±0. 1	3. 2±0. 1	5. 0±0. 2	K32	
FR4. 5/1. 6/5	4. 5±0. 2	1. 6±0. 2	5. 0±0. 3		
FR6. 8/3. 7/14	6. 8±0. 3	3. 7±0. 2	14. 3±0. 3		
FR11/5/18. 5	11. 0±0. 3	5. 0±0. 2	18. 5±0. 3		
FR11/5/20	11. 0±0. 3	5. 0±0. 2	20. 0±0. 3		
FR11/5/25	11. 0±0. 3	5. 0±0. 2	25. 0±0. 4		
FR12/8. 5/15A	12. 0±0. 3	8. 5±0. 3	15. 0±0. 3		L51
FR12/8. 5/16	12. 0±0. 3	8. 5±0. 3	16. 0±0. 3		
FR13/7/12. 7	13. 0±0. 5	7. 1±0. 4	12. 7±0. 5		K14
FR14/6/18	14. 3±0. 4	6. 35±0. 25	18. 0±0. 5		K26
FR14/6/28	14. 3±0. 4	6. 35±0. 25	28. 6±0. 5		
FR14/7/28A	14. 3±0. 5	7. 3±0. 4	28. 6±0. 7		
FR16. 5/8/27. 5	16. 5±0. 4	8. 0±0. 3	27. 9+0/-1		
FR16. 5/8/28	16. 5±0. 4	8. 0±0. 3	28. 0±0. 6		
FR18/10/28	17. 5±0. 5	9. 5±0. 3	28. 5±0. 5		
FR26/13/28	26. 0±0. 5	13. 0±0. 3	28. 5±0. 5		

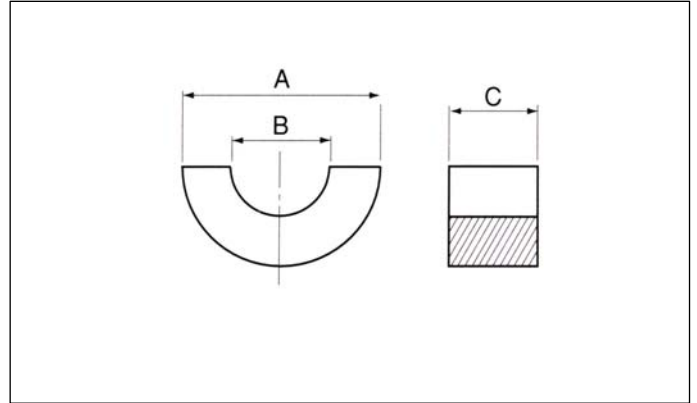
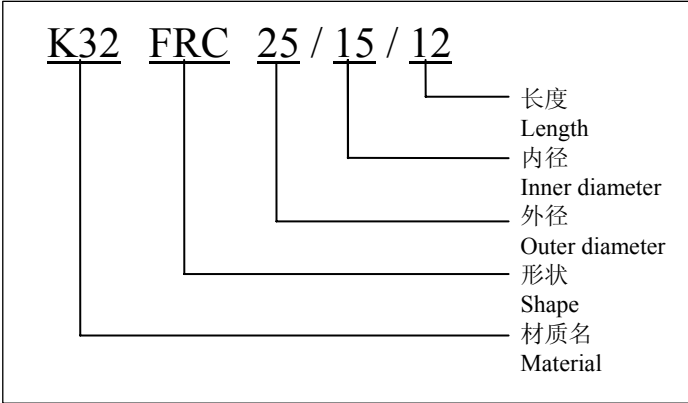
阻抗—频率特性(线匝一次) Impedance characteristics by frequency [1 turn]



圆电缆用磁芯 Divided cores for round cables

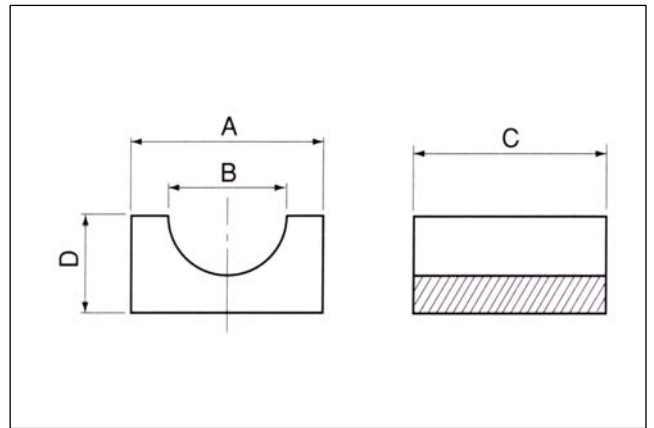
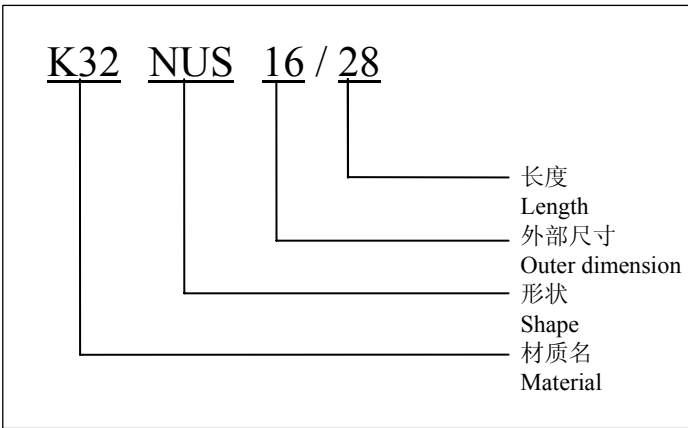
产品号码 Naming of core models

形状 Shape



产品号码 Naming of core models

形状 Shape



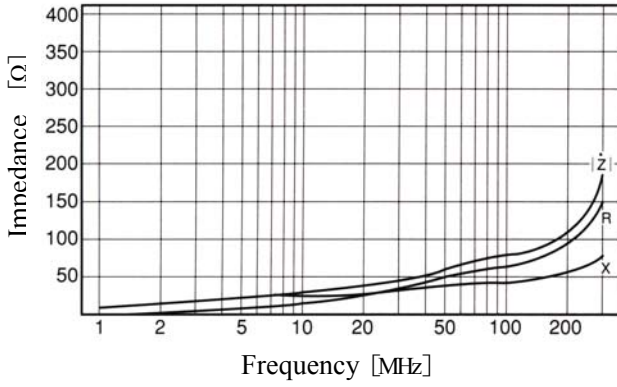
尺寸 Dimension

单位Unit: mm

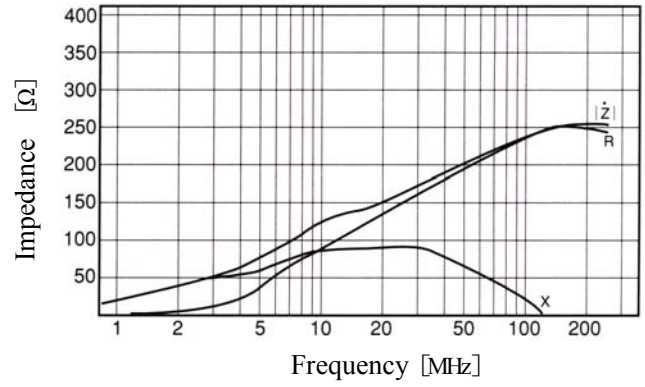
形状号码 Shape code	A	B	C	D	适用材质 Material used
FRC23/11/14	23.8±0.5	11.4±0.4	14.0±0.4	/	K32
FRC25/15/12	25.0±0.4	15.0±0.4	12.0±0.3	/	K32
FRC28/16/13	28.5±0.4	16.3±0.4	13.0±0.3	/	K32
FRC28/16/20	28.5±0.4	16.3±0.4	20.0±0.5	/	K32
FRC40/27/15	40.3±0.7	27.4±0.5	15.0±0.4	/	K32
NUS10/10	10.0±0.3	5.2±0.2	10.0±0.2	5.0+0.3/-0	K32
NUS10/20	10.0±0.3	5.2±0.2	20+0.3/-0.2	5.0+0.3/-0	K32
NUS11/21	11.0±0.15	5.8±0.1	21.0±0.4	5.5±0.1	K32
NUS13.5/28	13.5+0.4/-0.2	6.5±0.3	28.0±0.7	6.75±0.25	K32
NUS16/28	16.0+0.4/-0.3	9.0±0.4	28.0±0.7	8.0±0.25	L45
NUS16/28B	16.0±0.4	9.0±0.2	28.0±0.5	8.0±0.25	L45
NUS25/28	25.0±0.4	7.0±0.2	28.0±0.5	12.5±0.3	L45

阻抗—频率特性(线匝一次) Impedance characteristics by frequency [1 turn]

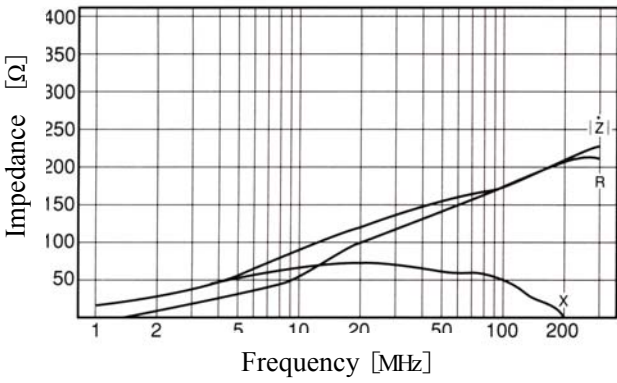
K32FRC25/15/12 TEST WIRE: 1.0φ2-UEW 55nm IT



K32NUS16/28 TEST WIRE: 1.0φ2-UEW 75nm IT

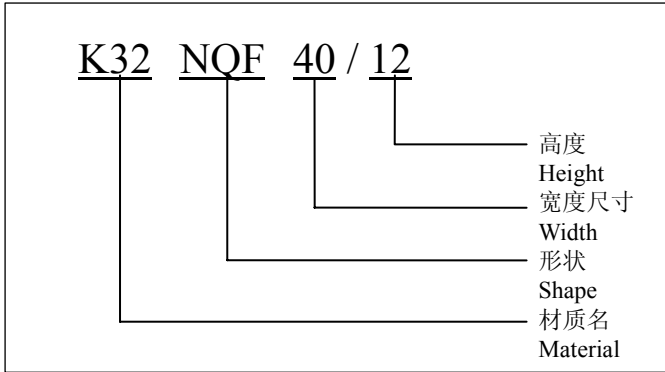


K32NUS13.5/28 TEST WIRE: 1.0φ2-UEW 75nm IT

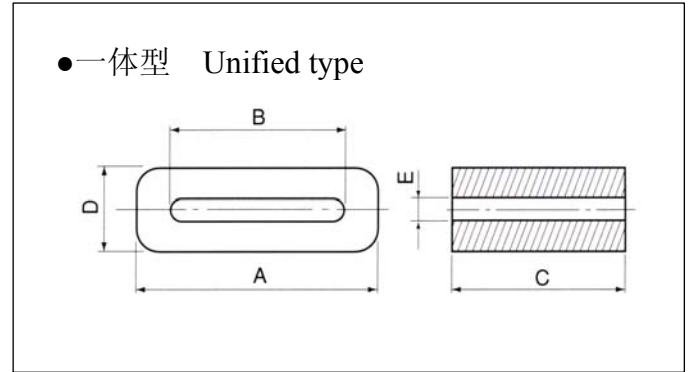


平面电缆用磁芯 Cores for flat cables

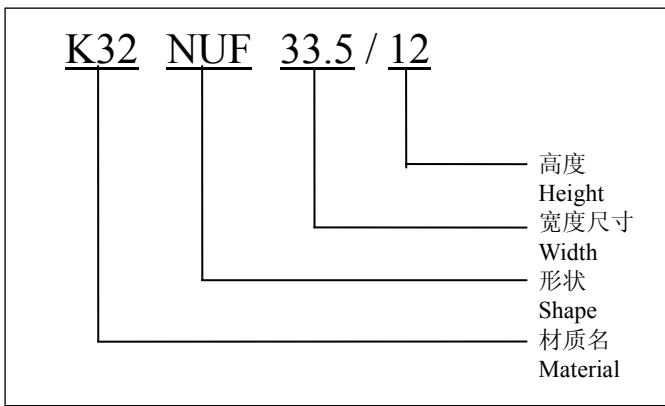
产品号码 Naming of core models



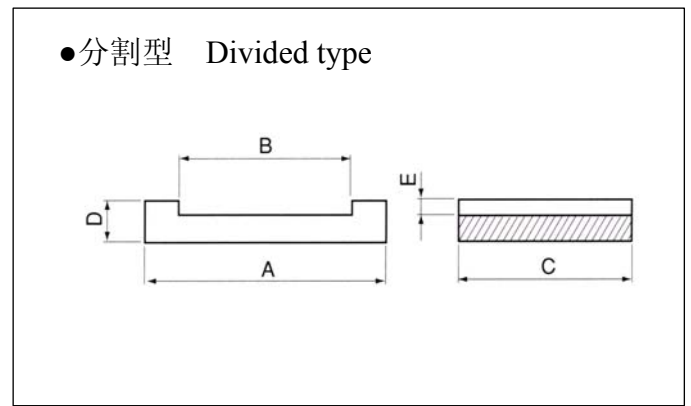
形状 Shape



产品号码 Naming of core models



形状 Shape



尺寸 Dimension

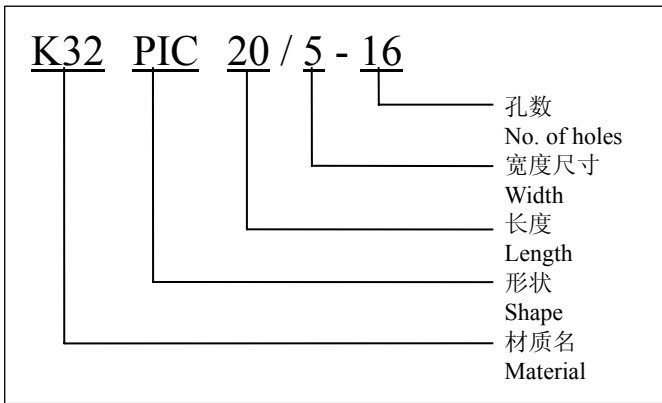
单位Unit: mm

形状号码 Shape code	A	B	C	D	E	适用材质 Material used
NQF11/3	11.0±0.2	9.0±0.2	3.0±0.2	2.3±0.15	0.7+0.1/-0.25	K32
NQF11/8	11.0±0.2	9.0±0.2	8.0±0.2	2.3±0.15	0.7+0.1/-0.25	K32
NQF16/3	15.5±0.3	12.0±0.3	3.0±0.2	2.3±0.15	0.7+0.1/-0.2	K32
NQF16/8	15.5±0.3	12.0±0.3	8.0±0.2	2.3±0.15	0.7+0.1/-0.2	K32
NQF16/8A	16.0±0.3	13+0.5/-0	8.0±0.5	3.0±0.3	1.0+0.5/-0.1	K32
NQF18/3	18.0±0.3	14.5±0.3	3.0±0.2	2.3±0.15	0.7+0.1/-0.25	K32
NQF18/6	18.0±0.3	14.5±0.3	6.0±0.2	2.3±0.15	0.7+0.1/-0.25	K32
NQF18/8	18.0±0.3	14.5±0.3	8.0±0.2	2.3±0.15	0.7+0.1/-0.25	K32
NQF22/8	21.5±0.4	18.0±0.3	8.0±0.2	2.3±0.15	0.7+0.1/-0.2	K32
NQF25/10	25.0±0.7	21+0.7/-0.4	10.0±0.5	3.0±0.5	0.8+0.2/-0.3	K32
NQF25/10G	25.0±0.7	21.0±0.7	10.0±0.5	3.0±0.5	0.8+0.2/-0.3	K32
NQF25/12	24.5. ±0.7	20.0±0.7	12.0±0.5	5.0±0.4	0.5+0.6/-0	K32
NQF25/12G	24.5. ±0.7	20.0±0.7	12.0±0.5	5.0±0.4	0.5+0.6/-0	K32
NQF25/15	25.0±0.7	21.0±0.7	15.0±0.5	3.0±0.5	0.8+0.2/-0.3	K32

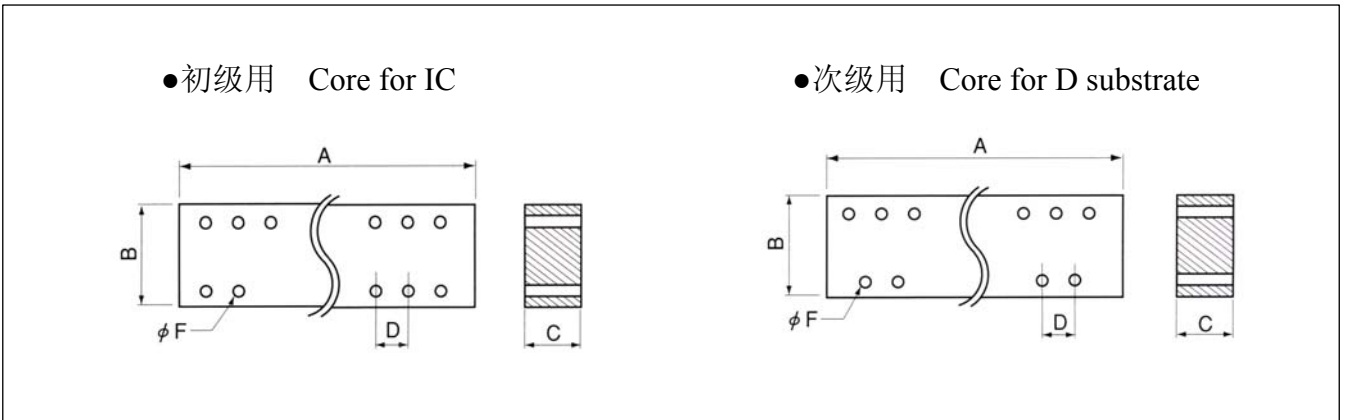
NQF25/20	24.5±0.7	20.0±0.7	20.0±0.5	5.0±0.4	0.5+0.6/-0	K32
NQF33.5/7.4/10	33.5±0.5	27+0.7/-0.4	10.0±0.3	7.4±0.3	2.2±0.2	K32
NQF33.5/8	33.5±0.7	27+0.7/-0.4	8.0±0.3	6.5±0.3	1.3+0.3/-0.1	K32
NQF33.5/10	33.5±0.7	27+0.7/-0.4	10.0±0.3	6.5±0.3	1.3+0.3/-0.1	K32
NQF33.5/10G	33.5±0.7	27+0.7/-0.4	10.0±0.3	6.5±0.3	1.4+0.2/-0.3	K32
NQF33.5/12	33.5±0.7	27+0.7/-0.4	12.0±0.3	6.5±0.3	1.3+0.3/-0.1	K32
NQF33.5/12A	33.5±0.4	28.4±0.4	12.0±0.3	6.5±0.3	1.4±0.2	K32
NQF33.5/12G	33.5±0.7	27+0.7/-0.4	12.0±0.3	6.5±0.3	1.4+0.2/-0.3	K32
NQF33.5/20	33.5±0.7	27+0.7/-0.4	20.0±0.4	6.5±0.4	1.3+0.3/-0.1	K32
NQF39/8	39.0±0.5	33.0±0.5	8.0±0.3	3.6+0.3/-0.	1.2±0.4	K32
NQF40/10	40.0±0.7	34.8±0.7	10.0±0.3	6.5±0.4	1.3+0.3/-0.1	K32
NQF40/12	40.0±0.7	34.8±0.7	12.0±0.4	6.5±0.4	1.3+0.3/-0.1	K32
NQF40/12G	40.0±0.7	34.8±0.7	12.0±0.4	6.5±0.4	1.4+0.2/-0.3	K32
NQF45/8	45.2±0.7	40.0±0.7	8.0±0.4	6.5±0.4	1.3+0.3/-0.1	K32
NQF45/12	45.2±0.7	40.0±0.7	12.0±0.4	6.5±0.4	1.3+0.3/-0.1	K32
NQF46/12	46+1/-0.7	41.5+0.7/-0.5	12.0±0.3	5.0+0/-0.7	0.5+0.8/-0	K32
NQF50/12	49.6±0.7	44.0±0.7	12.0±0.3	6.5±0.4	1.3+0.3/-0.1	K32
NQF57.6/12	57.6±0.7	52.0±0.7	12.0±0.3	6.5±0.4	1.3+0.3/-0.1	K32
NQF58/12G	57.6±0.7	52.0±0.7	12.0±0.3	6.5±0.4	1.4+0.2/-0.3	K32
NQF58/12SH	57.6±0.7	52.0±0.7	12.0±0.3	5.0±0.2	1.3+0.3/-0.1	K32
NUF6.8/5	6.8±0.4	4.6±0.3	5.0±0.3	1.5±0.15	0.45+0.3/-0	K32
NUF10/6	10.0±0.3	6.8±0.3	6+0/-0.5	2.5+0/-0.3	0.9+0.3/-0	K32
NUF10/10	10.0±0.3	6.8±0.3	10+0/-0.5	2.5+0/-0.3	0.9+0.3/-0	K32
NUF23/8U	23.0±0.3	19+0.4/-0	8.0±0.2	2.8±0.2	1.10±0.2	K32
NUF23/8I	18.5±0.3	/	8.0±0.2	1.2±0.2	/	K32
NUF25/12U	25.0±0.3	21+0.4/-0	12.0±0.2	2.8±0.2	1.10±0.2	K32
NUF25/12I	20.5±0.3	/	12.0±0.2	1.2±0.2	/	K32
NUF31/12U	31.0±0.3	27+0.4/-0	12.0±0.2	2.8±0.2	1.10±0.2	K32
NUF31/12I	26.5±0.3	/	12.0±0.2	1.2±0.2	/	K32
NUF33.5/12	33.5±0.5	27±0.4	12.0±0.4	3.3+0.35/-0	0.60+0.4/-0	K32
NUF33.5/20	33.5±0.5	27±0.4	20.0±0.4	3.3+0.25/-0	0.60+0.4/-0	K32
NUF40/12	40.0±0.5	34.8±0.5	12.0±0.3	3.3+0.25/-0	0.60+0.4/-0	K32
NUF45/12	45.2±0.5	40.0±0.5	12.0±0.3	3.3+0.25/-0	0.60+0.4/-0	K32
NUF45/12G	45.2±0.5	40.0±0.5	12.0±0.4	3.3+0.35/-0	0.60+0.4/-0	K32

多极用磁芯 Multi-hole Cores

产品号码 Naming of core models



形状 Shape



尺寸 Dimension

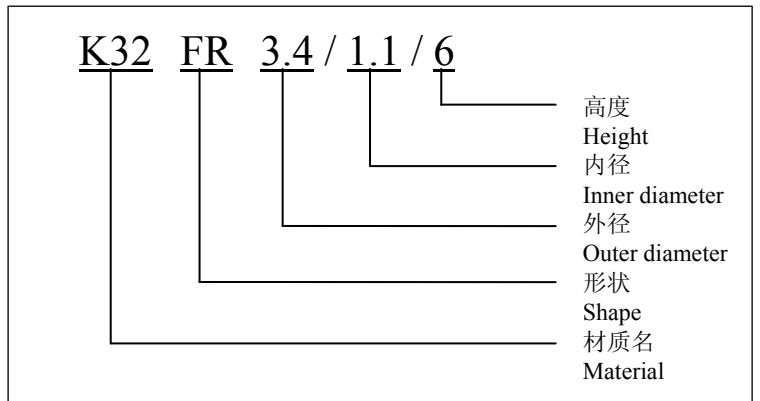
单位Unit: mm

形状号码 Shape code	A	B	C	D	ØF	孔数 No. of holes	适用材质 Material used	用途 Use
PIC10/11.5-8	9.92±0.3	11.45±0.25	1.50±0.15	2.54±0.1	1.08±0.07	8	K32	初级用 ICs
PIC16/6-9	16.3±0.3	6.20±0.15	3.75±0.15	2.74±0.15	1.08±0.07	9	K32	次级用 D substrate
PIC20/5-16	20.0±0.3	5.00±0.2	4.00±0.2	2.54±0.1	1.08±0.07	16	K32	初级用 ICs
PIC20/11.5-16	20.08±0.3	11.45±0.25	1.50±0.15	2.54±0.1	1.08±0.07	16	K32	初级用 ICs
PIC24/6-15	24.3±0.3	6.20±0.15	3.75±0.15	2.75±0.15	1.08±0.07	15	K32	次级用 D substrate
PIC25/11.5-20	25.16±0.3	11.45±0.25	1.50±0.15	2.54±0.1	1.08±0.07	20	K32	初级用 ICs
PIC38/6-25	37.5±0.3	6.20±0.15	3.75±0.15	2.76±0.1	1.08±0.07	25	K32	次级用 D substrate

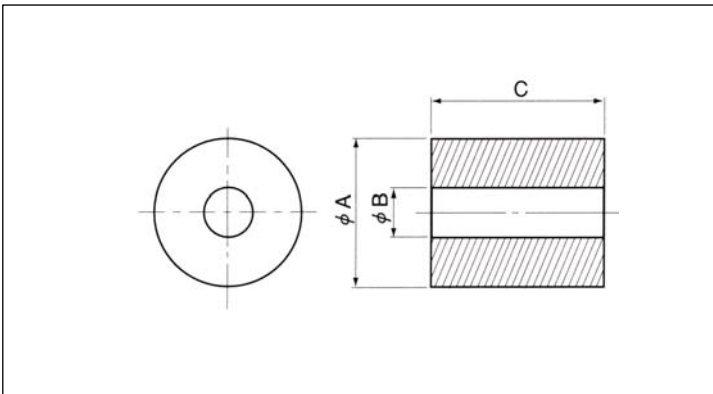
柱型磁芯 Bead Cores



产品号码 Naming of core models



形状 Shape

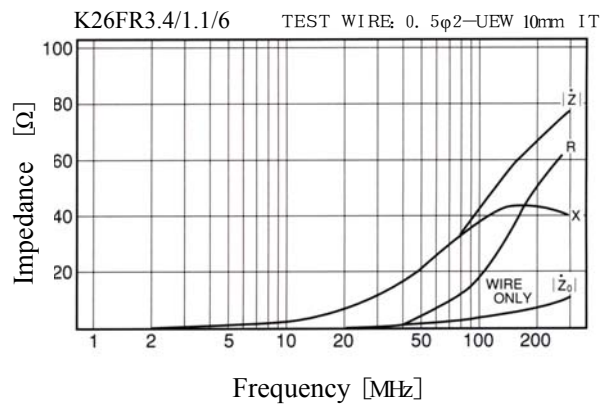
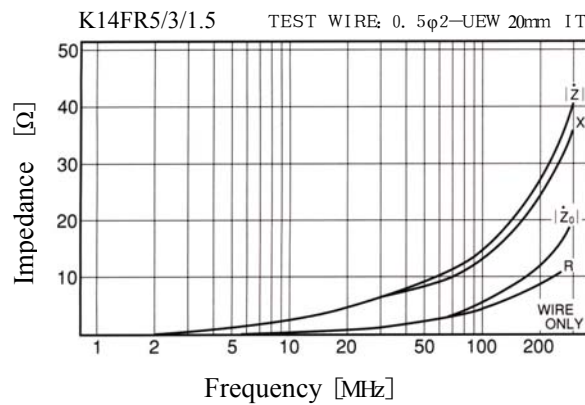
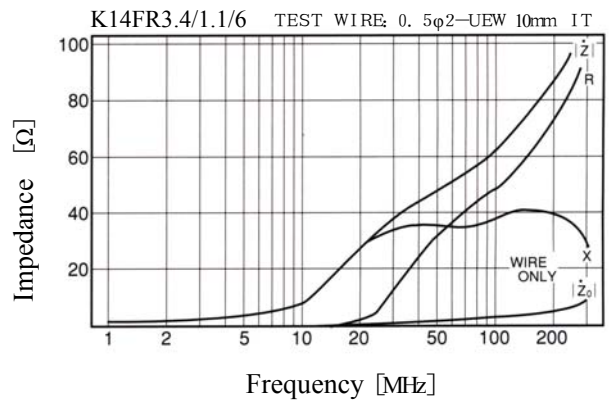
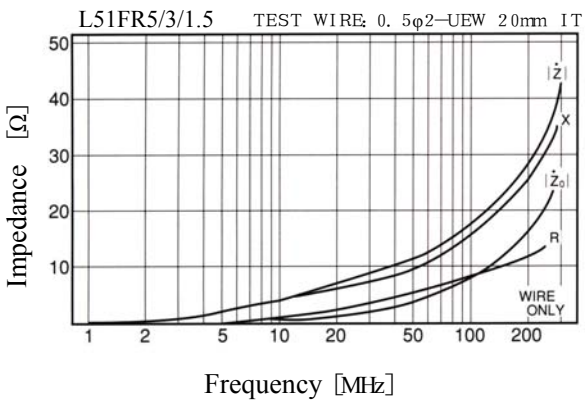
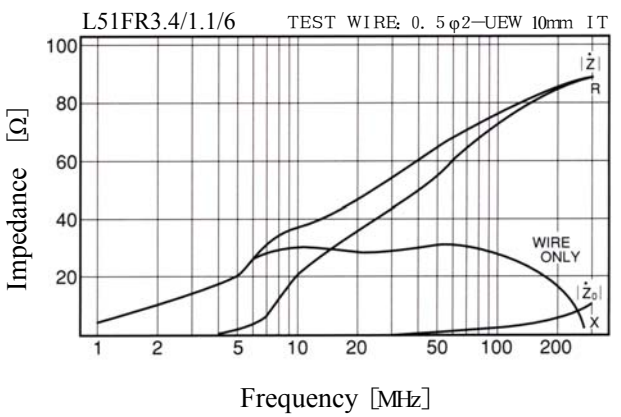
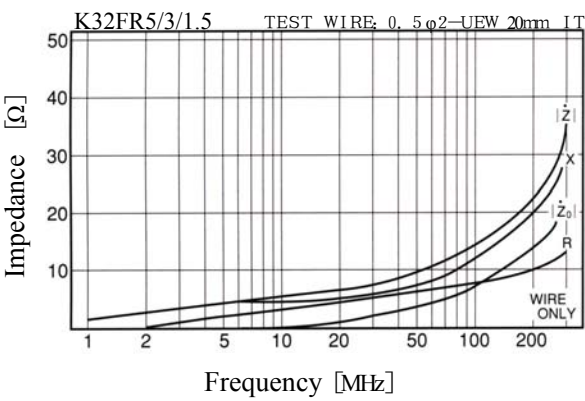
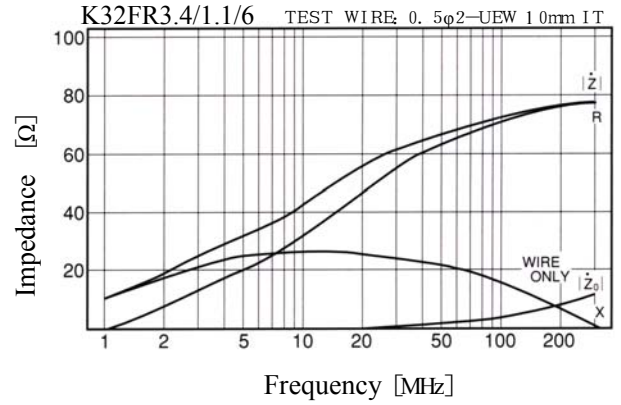
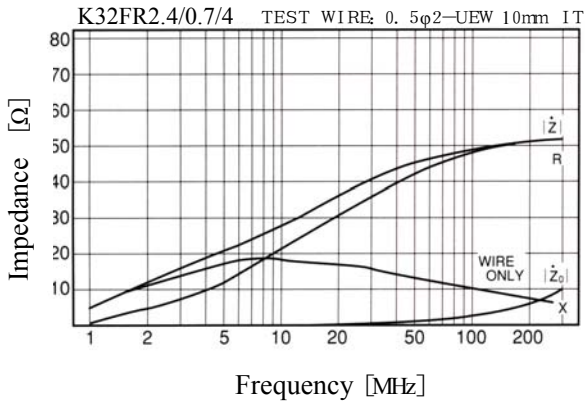


尺寸 Dimension

单位Unit: mm

形状号码 Shape code	外径(A) Outer diameter(A)	内径(B) Inner diameter(B)	高度 (C) Height (C)	适用材质 Material used
FR1. 8/0. 8/4	1. 8±0. 1	0. 8±0. 1	4. 0±0. 2	K32 L51 K14 K26
FR2. 4/0. 76/4	2. 4+0. 05/-0. 1	0. 7+0. 15/-0	4. 0+0. 3/-0. 1	
FR2. 8/1. 3/3	2. 8±0. 2	1. 3±0. 2	3. 0±0. 3	
FR3. 4/0. 8/4. 4	3. 4±0. 2	0. 8±0. 2	4. 4±0. 3	
FR3. 4/1. 1/6	3. 4±0. 2	1. 1±0. 2	6. 0±0. 3	
FR3. 5/1. 3/3	3. 5±0. 2	1. 3±0. 2	3. 0±0. 3	
FR3. 5/1. 3/5	3. 5±0. 2	1. 3±0. 2	5. 0±0. 3	
FR4/2. 7/3. 5	4. 0±0. 1	2. 7±0. 1	3. 5±0. 2	
FR5/3/1. 5	5. 0±0. 2	3. 0±0. 2	1. 5±0. 15	
FR6/3/2	6. 0±0. 3	3. 0±0. 2	2. 0±0. 15	

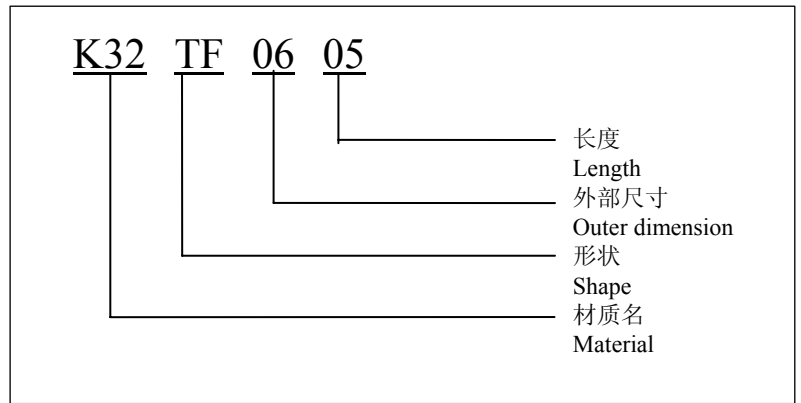
阻抗—频率特性(线匝一次) Impedance characteristics by frequency [1 turn]



双、四孔磁芯 Balun Cores

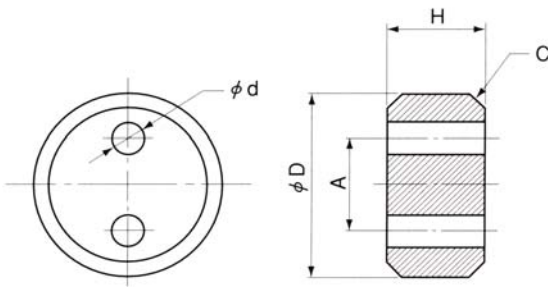


产品号码 Naming of core models



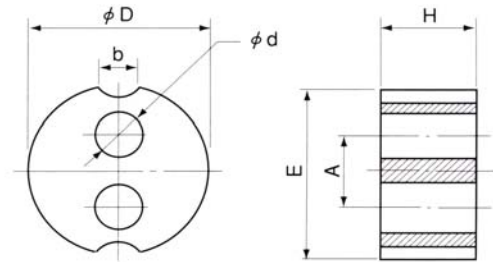
形状与尺寸 Shapes and dimensions

●类型 A Type A



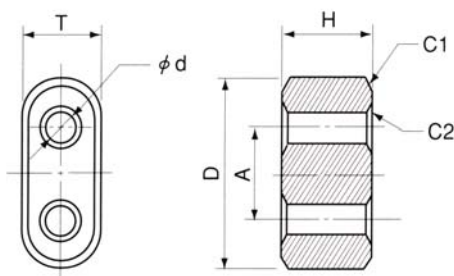
形状号码 Shape code	D	H	d	A	C	适用材质 Material used
TF0605	6.5±0.3	5.5±0.3	1.3±0.2	2.5±0.2	0.5	K32, L51, K14, K26

●类型 B Type B



形状号码 Shape code	D	H	d	A	h	E	适用材质 Material used
TF0706	6.8±0.3	5.5±0.2	1.5±0.3/0	2.6±0.2	1.6±0.2	6.4±0.3	K32, L51, K14, K26

●类型 C Type C



形状号码 Shape code	D	H	d	A	T	C1	C2	适用材质 Material used
TF04093	4.9±0.3	3.0±0.15	0.95±0.15	2.5±0.2	2.3±0.1	—	—	K32 L51 K14 K26
TF05202	5.2±0.3	2.0±0.2	1.3±0.2	2.5±0.2	2.5±0.2	—	—	
TF05203A	5.2±0.3	3.0±0.15	1.2±0.2	2.6±0.3	3.0±0.1	—	—	
TF05204	5.2±0.3	4.0±0.3	1.3±0.2	2.5±0.2	2.5±0.2	—	—	
TF05302	5.2±0.3	2.0±0.2	1.3±0.2	(2.5)	2.5±0.3	—	—	
TF06505	6.5±0.3	5.0±0.3	1.0±0.15	3.5±0.2	3.0±0.3	—	—	
TF06510	6.5±0.3	10.0±0.3	1.0±0.15	3.5±0.2	3.0±0.3	—	—	
TF1204	12.0±0.5	4.0±0.3	3.7±0.3	5.0±0.3	6.5±0.3	C0.35	C0.35	
TF1305	13.0±0.5	5.0±0.3	3.8±0.3	5.7±0.3	7.3±0.3	C0.5	—	
TF1506	15.0±0.5	6.0±0.5	5.0±0.3	7.0±0.3	8.0±0.3	C0.3	C0.3	

单位Unit: mm

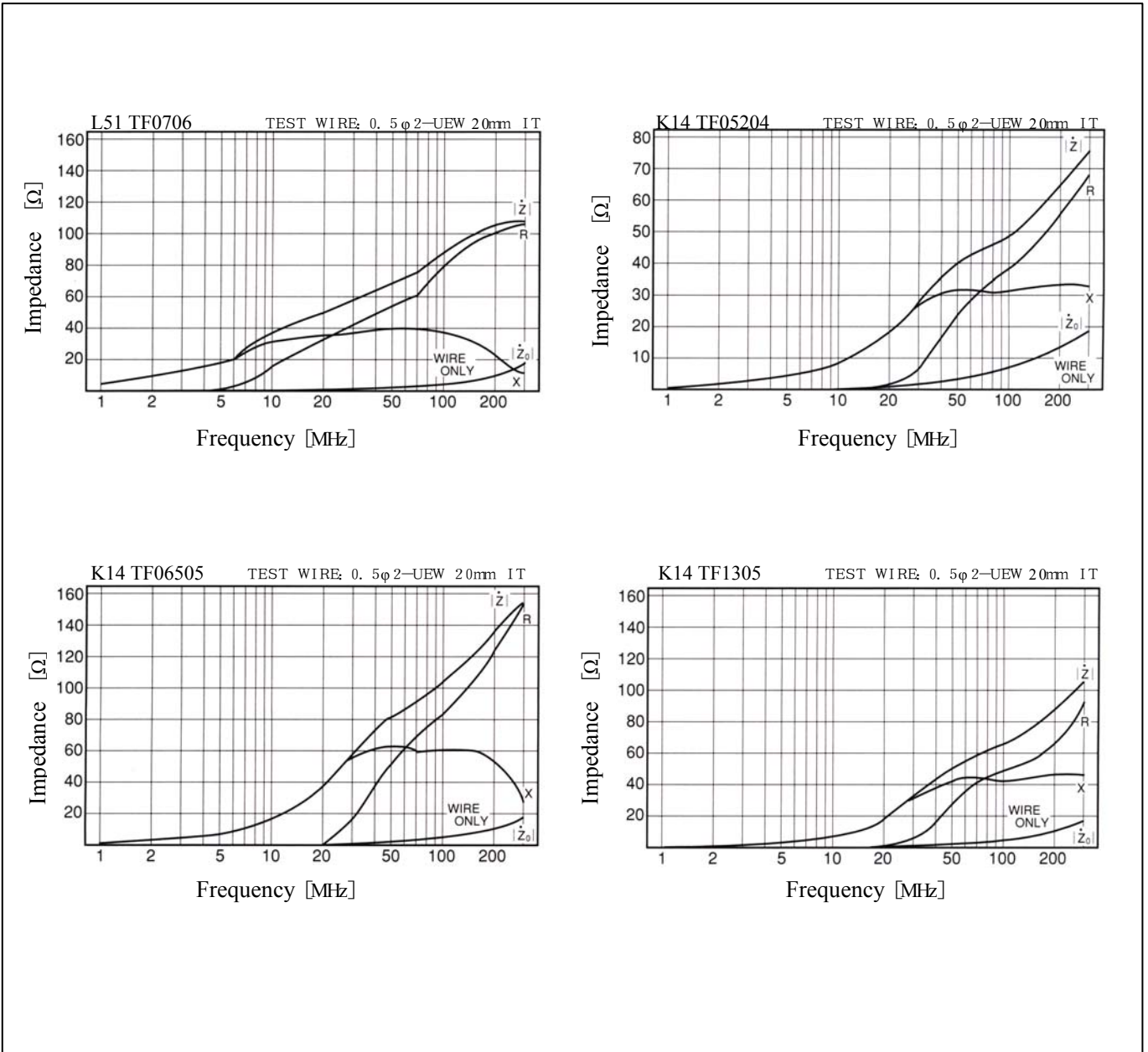
形状与尺寸 Shapes and dimensions

●类型D Type D

形状号码 Shape code	D	H	d	A	孔数 No. of holes	适用材质 Material used
TF0803	8.0±0.3	3.0±0.3	1.4±0.2	3.0±0.3	4	K32, L51
TF0805	8.0±0.3	5.0±0.3	1.4±0.2	3.0±0.3	4	
TF0610	6.0±0.2	10.0±0.4	1.0±0.2	2.5±0.2	6	K14, K26

阻抗—频率特性

Impedance characteristics by frequency



抑制噪音相关产品和用途 Ferrite cores for EMI and applications

机能	产品群	用途	要求特性
去除传导噪音 [$\leq 30\text{MHz}$] 注: 10MHz~30MHz 的噪音用 Ni-Zn 系列	Mn-Zn 系 Mn-Zn group *环形磁芯 *普通线圈 *噪音滤波器 *(铁氧体磁芯+电容器)	电子机器电源线	High- μ
去除放射噪音 [30~1000MHz]	Ni-Zn 系 *环形磁芯 *平型磁芯 *珠型磁芯 (作为和电容器组合的滤波器可以使用) *孔型磁芯 *多孔板型磁芯	电子机器数据线 (圆形电缆) (平型电缆) 回路部品用 KONEKUTA IC	在去处频率带域 High-Z(阻抗)
屏蔽	Mn-Zn 屏蔽板 Mn-Zn 帽型磁芯 铁氧体粉体	数据用磁头 扼流的磁屏 车用点火电缆 微波炉垫圈	High- μ
电波吸收	铁氧体瓷砖吸收体	电波暗室 建筑外壁	无反射(μ -f 特性)

EMI 磁芯的用途

机能 Type	用途(防止放射噪音用) Use	代表产品名 Representative product name	图解用途 Application
1. 一体型 环形磁芯(FR)	●通过圆形 OA 电缆 (主要绕一圈使用)	K32 FR11/5/9 K32 FR13/7/6 K32 FR19/10/10 K32 FR25/15/12	
2. 分割型 环形磁芯(FRC)	●在圆形 OA 电缆中已有 KUMMM 的配件 (主要绕一圈使用)	K32 FRC25/15/12 K32 FRC28/16/13	
3. 一体型 磁芯(FR)	●通过圆形 OA 电缆 *环形磁芯中长的型号	K32 FR26/13/28 K32 FR18/10/28 K32 FR16.5/8/28 K32 FR14/6/28	
4. 分割型(NUS)	●在圆形 OA 磁芯中已有 KUMMM 的配件 *分割型中长的型号	K32 NUS16/28G K32 NUS13.5/28G K32 NUS10/20G	
5. 一体型 平型磁芯(NQF)	■通过平型电缆 18, 26, 40, 50, 芯用	K32 NQF33.5/10G K32 NQF40/10G K32 NQF45/8G	
6. 分割型 平型磁芯(NUF) Flat cores	■通过平型电缆的 KUMMM 的配件 18, 26, 40, 50, 芯用 *夹平型磁芯	K32 NUF25/12 K32 NUF33.5/12 K32 NUF40/12 K32 NUF45/12	
7. 多孔 孔型磁芯(PIC)	(1) IC 的端子(插入基板-IC 之间)8, 16, 20pin (2) 插接件用 ◆D 型超小型 9, 15, 25pin ◆平型接插件 8, 16, 20pin (3) 珠型阵列用 16pin	K32 PIC10/11.5-8 K32 PIC20/11.5-8 K32 PIC16/6-9 K32 PIC24/6-15 K32 PIC20/7-16 K32 PIC20/5-16	
8. 多孔 珠型磁芯(TF)	●作为电路元件安装在基板上 ●珠型电感器 在磁珠上通过电线	K14 05204 K14 06505	

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