

# Ferrite Bead Filters(LEAD) For Signal Line

Conformity to RoHS Directive

## ZBF Series

### FEATURES

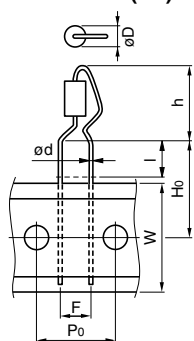
- With an impedance greater than 30Ω across the 30 to 1000MHz frequency range, these ferrite beads absorb noise by resistance at high frequencies.
- Good high frequency characteristics due to low distributed capacitance.
- These are radial lead-type ferrite beads, so can be mounted on PCBs using automatic equipment insertion.

### APPLICATIONS

Home electronics (TVs, video equipment, PCs, digital equipment equipped with microcomputers, etc.), office automation equipment (computers, terminals, stand-alone word processors, fax machines, etc.), factory automation equipment (industrial measuring equipment, meters, switching power sources, etc.), radio equipment (car phones, business mobile radios, transceivers, amateur radios, etc.). Used to control undesirable electromagnetic radiation, suppress abnormal oscillations, and avoid abnormal operation. For items used in the USA, particularly effective in meeting the requirements for FCC Part 15, subpart J approval for digital equipment. Particularly effective in countering EMI so as to comply with VCCI (Japan) and FTZ (German) regulations.

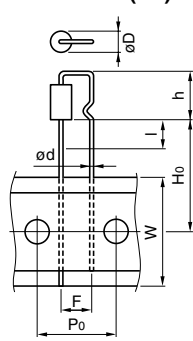
### SHAPES AND DIMENSIONS

ZBF503S-01(TA)-01



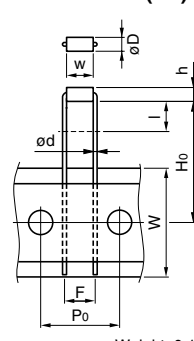
Weight: 0.3g

ZBF503S-03(TA)-K-01



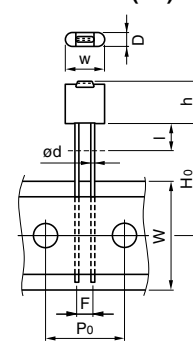
Weight: 0.3g

ZBF503AR-00(TA)-01



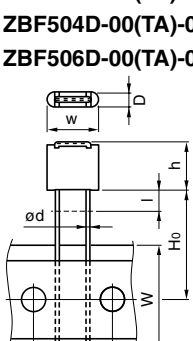
Weight: 0.1g

ZBF253D-00(TA)-01



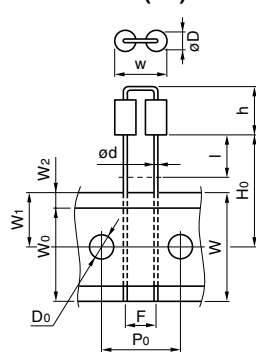
Weight: 0.4g

ZBF503D-00(TA)-01



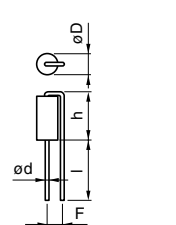
ZBF504D-00(TA)-01  
ZBF506D-00(TA)-01

ZBF503M-00(TA)-K-01



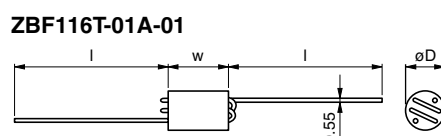
Weight: 0.6g

ZBF253S-01-01



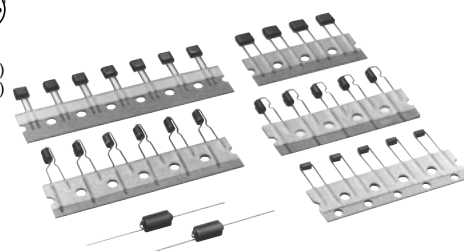
Weight: 0.3g

ZBF113T-01-01



Weight: 1.4g(113T)  
1.3g(116T)

ZBF116T-01A-01



Dimensions in mm

Part No.	D	w	h	l	d	F	Ho	D0	W	W0	W1	W2	P0	P1
ZBF253S-01-01	3.5	—	8max.	10	0.6	2.5	—	—	—	—	—	—	—	—
ZBF503S-01(TA*1)-01*2	3.5	—	12.5max.	6	0.6	5	16	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF503S-03(TA)-K-01	3.5	—	8max.	10	0.6	5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF503AR-00(TA)-01	2.3	4.5	2.3	5	0.6	5	20	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF253D-00(TA)-01	2.3	6.5max.	7max.	4.5	0.6	2.5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF503D-00(TA)-01	2.5max.	8.5max.	8max.	4.5	0.6	5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF504D-00(TA)-01	2.5max.	8.5max.	8max.	4.5	0.6	5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF506D-00(TA)-01	2.5max.	8.5max.	8max.	4.5	0.6	5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF503M-00(TA)-K-01	3.5	8.6	8max.	7	0.6	5	18.5	4±0.2	18+1, -0.5	12±0.3	9±0.5	(4)	12.7±0.3	6.35±0.4
ZBF113T-01-01	6	10	—	25.4	0.55	—	—	—	—	—	—	—	—	—
ZBF116T-01A-01	6	10	—	20	0.55	—	—	—	—	—	—	—	—	—

\*1 Available for taping specifications. In this case please add "TA" at the end of part number.

\*2 The "-01" designation at the end of the product code indicates Lead-free compatible product.

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• Please contact our Sales office when your application are considered the following:

The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

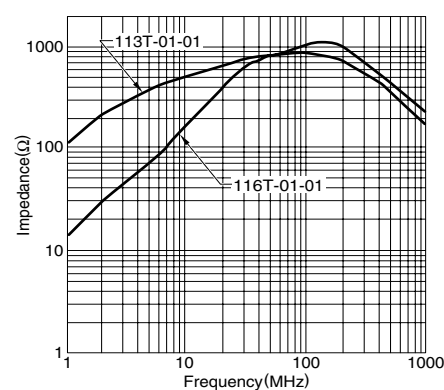
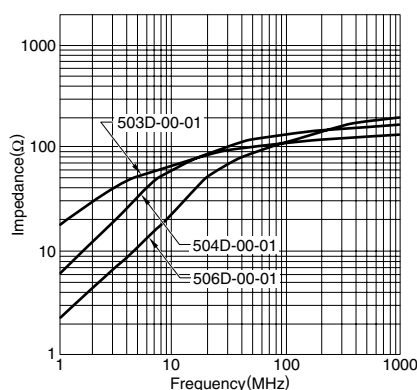
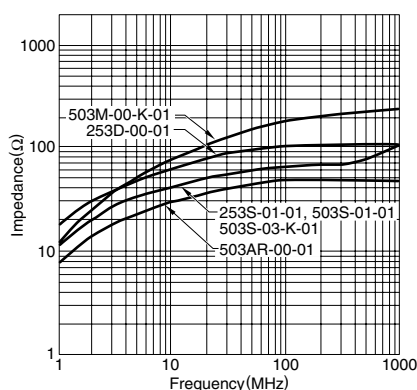
## ELECTRICAL CHARACTERISTICS

Part No.	Rated voltage Edc (V)	Rated current (A)	Impedance vs. frequency(MHz)				DC resistance ( $\Omega$ )max.
			30 $\Omega$ min.	50 $\Omega$ min.	100 $\Omega$ min.	600 $\Omega$ min.	
ZBF253S-01-01	50	3	10 to 300				0.01
ZBF503S-01(TA)-01	50	3	10 to 300				0.01
ZBF503S-03(TA)-K-01	50	3	30 to 300				0.01
ZBF503AR-00(TA)-01	50	3	100 to 1000				0.01
ZBF253D-00(TA)-01	50	3	5 to 300	15 to 300			0.01
ZBF503D-00(TA)-01	50	3	5 to 300	15 to 300			0.01
ZBF504D-00(TA)-01	50	3	7 to 300	30 to 300			0.01
ZBF506D-00(TA)-01	50	3	30 to 1000	70 to 1000			0.01
ZBF503M-00(TA)-K-01	50	3	10 to 300				0.01
ZBF113T-01-01	50	3			3 to 300	30 to 70	0.04
ZBF116T-01A-01	50	3			10 to 300	50 to 100	0.04

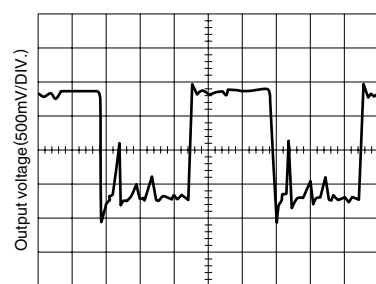
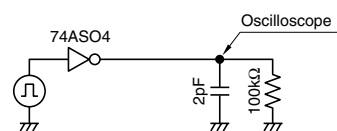
• Operating temperature range: -25 to +85°C

## TYPICAL ELECTRICAL CHARACTERISTICS

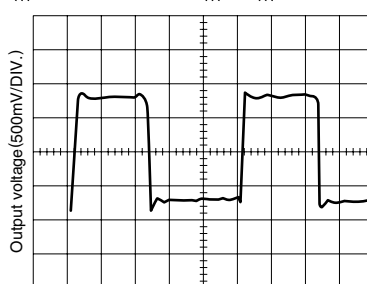
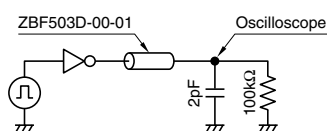
### IMPEDANCE vs. FREQUENCY CHARACTERISTICS



### TYPICAL EMC SUPPRESSION EFFECTS

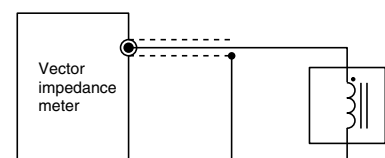


Time(20ns/DIV.)



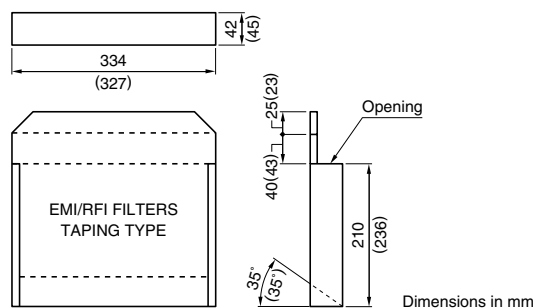
Time(20ns/DIV.)

### MEASURING CIRCUIT



Vector impedance meter  
(YHP 4191A equivalent)

### PACKAGING STYLE AND QUANTITIES(AMMO-PACKAGING)



The dimension indicated within parentheses is used during packing of the ZBFS503S-01TA.

Part No.	Quantity
ZBF503S-01TA-01	2500 pieces/box
ZBF503S-03TA-01	2500 pieces/box
ZBF503AR-00TA-01	2500 pieces/box
ZBF253D-00TA-01	2000 pieces/box
ZBF503D-00TA-01	2000 pieces/box
ZBF504D-00TA-01	2000 pieces/box
ZBF506D-00TA-01	2000 pieces/box
ZBF503M-00TA-K-01	1500 pieces/box