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Certain items in this catalog may require specific procedures for export according to "Foreign Exchange and Foreign Trade Control Law" of Japan, "U.S. Export Administration Regulations", and other applicable regulations. Should you have any question or inquiry on this matter, please contact our sales staff.
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FERRITE CORES



FEATURES

- Use of high-loss ferrite material
- Easy installation at the source for excellent suppression effects
- Broad range of materials and shapes to suit various applications

APPLICATIONS

- Designed as a preventive measure against EMI radiated from the power and interface cables of digital equipment and harnesses

AVAILABLE RANGE

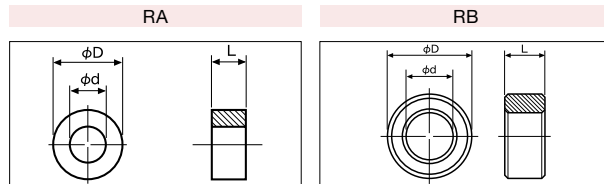
Type	Figure	Configurations [mm] (inch)	Ordering code
RA/RB Series Ring cores		<p> ϕD: 2.5~40.0 (0.098~1.57) ϕd: 0.7~27.0 (0.028~1.06) L : 0.6~28.0 (0.024~1.10) </p>	(example) BP53 RB 120 070 060 M <ul style="list-style-type: none"> Auxiliary symbols Length (L) Inside diameter (ϕd) Outside diameter (ϕD) Configuration Available materials
RD Series Cores for flat cables		<p> A : 3.0~8.0 (0.118~0.315) B : 21.7~57.0 (0.866~2.24) C : 5.0~12.0 (0.197~0.472) </p>	(example) BP53 RD 030 310 120 M <ul style="list-style-type: none"> Auxiliary symbols Dimension (C) Dimension (B) Dimension (A) Configuration Available materials
MA Series Balun type cores		<p> A : 1.9~4.0 (0.075~0.157) B : 3.4~7.0 (0.134~0.276) C : 2.0~5.0 (0.079~0.197) </p>	(example) BP53 MA 19 034 020 AA <ul style="list-style-type: none"> Auxiliary symbols Height (C) Width (B) Thickness (A) Configuration Available materials

Ring cores (RA/RB series)

FEATURES

- Inexpensive
- Wide variety of products from 2.5 ϕ to 40 ϕ

CONFIGURATIONS



Ordering code (□□□□ is for available material symbols)	External dimensions [mm] (inch)			Available materials
	ϕD	ϕd	L	
□□□□RA025007006M	2.5±0.1 (0.098±0.004)	0.7 ^{+0.2} ₋₀ (0.028 ^{+0.008} ₀)	0.6±0.1 (0.024±0.004)	BP53
□□□□RA025007020M	2.5±0.1 (0.098±0.004)	0.7 ^{+0.2} ₋₀ (0.028 ^{+0.008} ₀)	2.0 ^{+0.15} _{-0.1} (0.079 ^{+0.006} _{-0.004})	BP53
□□□□RA030010020M	3.0 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.0±0.1 (0.039±0.004)	2.0 ^{+0.15} _{-0.1} (0.079 ^{+0.006} _{-0.004})	BP53-CP22
□□□□RA030010040M	3.0 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.0±0.1 (0.039±0.004)	4.0 ^{+0.2} _{-0.15} (0.157 ^{+0.008} _{-0.006})	BP53
□□□□RA035010045M	3.5 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.0±0.1 (0.039±0.004)	4.5±0.2 (0.177±0.008)	BP53-CP22
□□□□RA035010060M	3.5 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.0±0.1 (0.039±0.004)	6.0±0.3 (0.236±0.012)	
□□□□RA035013030M	3.5 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.3 ^{+0.2} ₋₀ (0.051 ^{+0.008} ₀)	3.0±0.15 (0.118±0.006)	
□□□□RA035013050M	3.5 ^{+0.15} _{-0.1} (0.118 ^{+0.006} _{-0.004})	1.3 ^{+0.2} ₋₀ (0.051 ^{+0.008} ₀)	5.0±0.2 (0.197±0.008)	
□□□□RA040020020M	4.0±0.15 (0.157±0.006)	2.0±0.1 (0.079±0.004)	2.0 ^{+0.15} _{-0.1} (0.079 ^{+0.006} _{-0.004})	
□□□□RA040020050M	4.0±0.15 (0.157±0.006)	2.0±0.1 (0.079±0.004)	5.0±0.2 (0.197±0.008)	
□□□□RA040020070M	4.0±0.15 (0.157±0.006)	2.0±0.1 (0.079±0.004)	7.0±0.3 (0.276±0.012)	

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Ring cores (RA/RB series)

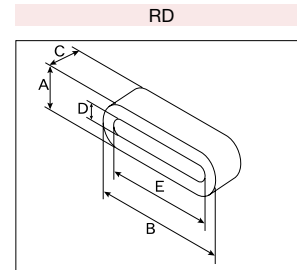
Ordering code (□□□□ is for available material symbols)	External dimensions [mm] (inch)			Available materials
	φD	φd	L	
□□□□RA045016050M	4.5±0.15 (0.157±0.006)	1.6 ^{+0.15} _{-0.1} (0.063 ^{+0.006} _{-0.004})	5.0±0.2 (0.197±0.008)	BP53
□□□□RB052025050M	5.2±0.2 (0.205±0.008)	2.5±0.1 (0.098±0.004)	5.0±0.2 (0.197±0.008)	BP53·CP22
□□□□RB060030020M	6.0±0.2 (0.236±0.008)	3.0 ^{+0.1} _{-0.15} (0.118 ^{+0.004} _{-0.006})	2.0 ^{+0.15} _{-0.1} (0.079 ^{+0.006} _{-0.004})	
□□□□RB080040030M	8.0 ^{+0.15} _{-0.1} (0.315 ^{+0.006} _{-0.004})	4.0±0.15 (0.157±0.006)	3.0±0.15 (0.118±0.006)	
□□□□RA100060100M	10.0±0.3 (0.394±0.012)	6.0±0.2 (0.236±0.008)	10.0±0.5 (0.394±0.020)	BP53
□□□□RA100060140M	10.0±0.3 (0.394±0.012)	6.0 ^{+0.2} _{-0.3} (0.236 ^{+0.008} _{-0.012})	14.0±0.5 (0.551±0.020)	BP53·CP22
□□□□RB120070060M	12.0±0.4 (0.472±0.016)	7.0±0.25 (0.276±0.010)	6.0±0.3 (0.236±0.012)	
□□□□RB120070150M	12.0±0.4 (0.472±0.016)	7.0±0.25 (0.276±0.010)	15.0±0.8 (0.591±0.031)	BP53
□□□□RB120080130M	12.0±0.4 (0.472±0.016)	8.0±0.25 (0.315±0.010)	13.0±0.7 (0.512±0.028)	BP53·CP22
□□□□RB140035280M	14.0±0.45 (0.551±0.018)	3.5±0.25 (0.138±0.010)	28.0±1.5 (1.10±0.059)	BP53
□□□□RB140063280M	14.0±0.45 (0.551±0.018)	6.35±0.25 (0.250±0.010)	28.0±1.5 (1.10±0.059)	
□□□□RB140070100M	14.0±0.45 (0.551±0.018)	7.0±0.25 (0.276±0.010)	10.0±0.5 (0.394±0.020)	
□□□□RB160070200M	16.0±0.5 (0.630±0.020)	7.0±0.25 (0.276±0.010)	20.0±1.0 (0.787±0.039)	
□□□□RB160080280M	16.0±0.5 (0.630±0.020)	8.0±0.3 (0.315±0.012)	28.0±1.5 (1.10±0.059)	
□□□□RB160100140M	16.0±0.5 (0.630±0.020)	10.0±0.3 (0.394±0.012)	14.0±0.7 (0.551±0.028)	
□□□□RB190120080M	19.0±0.6 (0.748±0.024)	12.0±0.4 (0.472±0.016)	8.0±0.4 (0.315±0.016)	BP53·CP22
□□□□RB200100100M	20.0±0.6 (0.787±0.024)	10.0±0.3 (0.394±0.012)	10.0±0.5 (0.394±0.020)	
□□□□RB250150120M	25.0±0.8 (0.984±0.031)	15.0±0.5 (0.591±0.020)	12.0±0.6 (0.472±0.024)	
□□□□RB260130280M	26.0±0.8 (1.02±0.031)	13.0±0.4 (0.512±0.016)	28.0±1.5 (1.10±0.059)	BP53
□□□□RB280160130M	28.0±0.9 (1.10±0.035)	16.0±0.5 (0.630±0.020)	13.0±0.7 (0.512±0.028)	BP53·CP22
□□□□RB310190100M	31.0±1.1 (1.22±0.043)	19.0±0.6 (0.748±0.024)	10.0±0.5 (0.394±0.020)	
□□□□RB400270150M	40.0±1.2 (1.57±0.047)	27.0±0.9 (1.06±0.035)	15.0±0.8 (0.591±0.031)	BP53

RD Type

FEATURES

- Available for applications with 12 to 32 lines
- Cores for flexible flat cables also available

CONFIGURATIONS



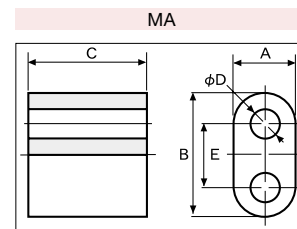
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	A	B	C	D	E	
BP53RD030310120M	3.0 (0.118)	31.0 (1.22)	12.0 (0.472)	0.8 (0.031)	28.0 (1.10)	For flexible flat cables
BP53RD050380120M	5.0 (0.197)	38.0 (1.50)	12.0 (0.472)	0.8 (0.031)	34.0 (1.34)	For flexible flat cables
BP53RD050570120M	5.0 (0.197)	57.0 (2.24)	12.0 (0.472)	0.8 (0.031)	53.0 (2.09)	For flexible flat cables
BP53RD065220080M	6.5 (0.256)	21.7 (0.854)	8.0 (0.315)	1.3 (0.051)	16.5 (0.650)	12
BP53RD065270080M	6.5 (0.256)	27.0 (1.06)	8.0 (0.315)	1.3 (0.051)	21.8 (0.858)	16
BP53RD065330080M	6.5 (0.256)	33.0 (1.30)	8.0 (0.315)	1.3 (0.051)	27.8 (1.09)	20
BP53RD065400120M	6.5 (0.256)	40.0 (1.57)	12.0 (0.472)	1.3 (0.051)	34.8 (1.37)	26
BP53RD080480050M	8.0 (0.315)	48.0 (1.89)	5.0 (0.197)	2.0 (0.079)	42.0 (1.65)	32
BP53RD080480080M	8.0 (0.315)	48.0 (1.89)	8.0 (0.315)	2.0 (0.079)	42.0 (1.65)	32

Balun type cores [MA series]

FEATURES

- Wide variety of small-sized products

CONFIGURATIONS

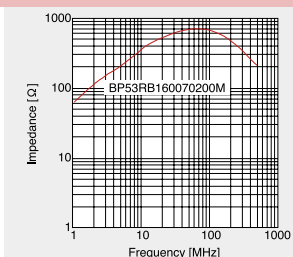
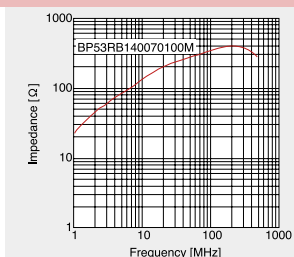
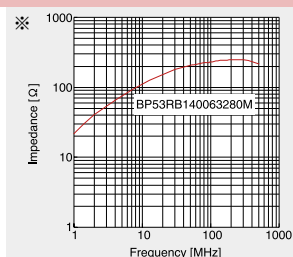
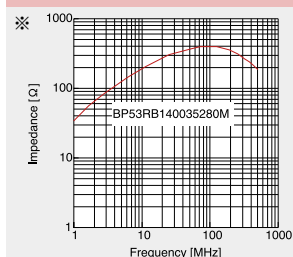
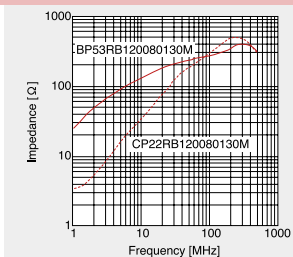
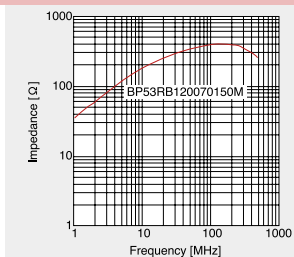
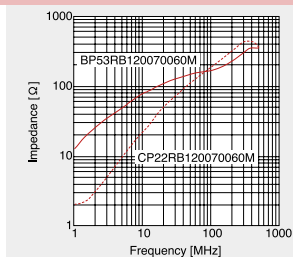
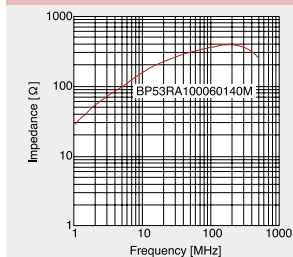
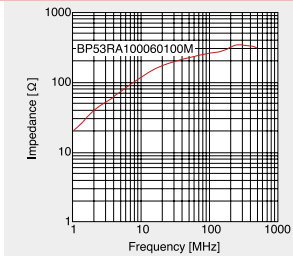
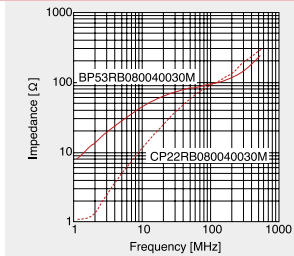
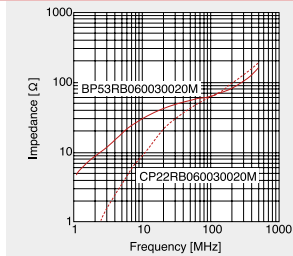
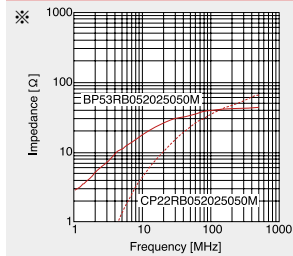
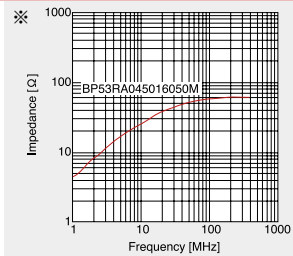
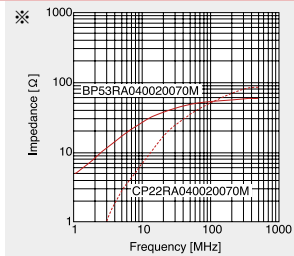
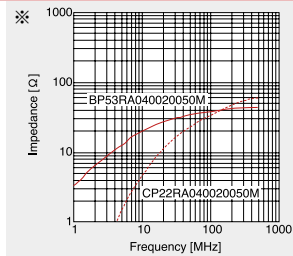
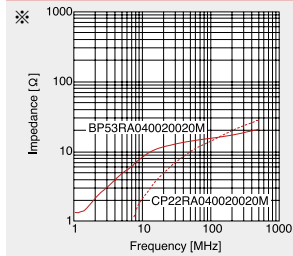
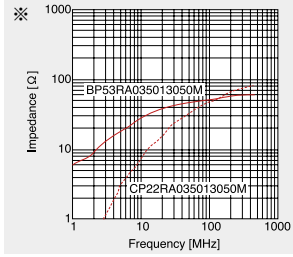
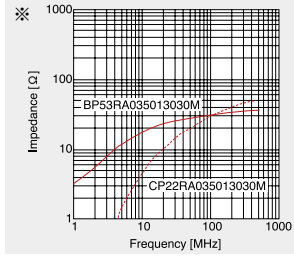
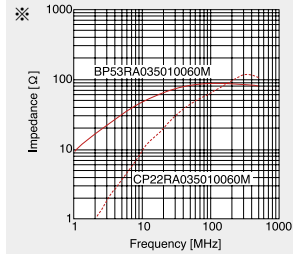
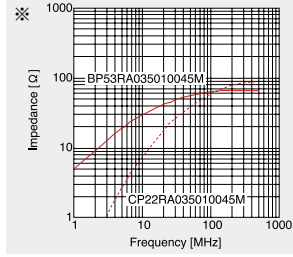
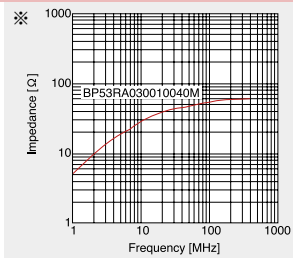
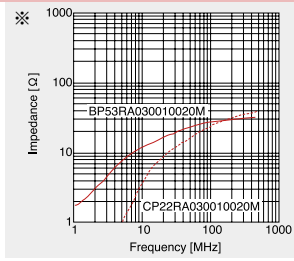
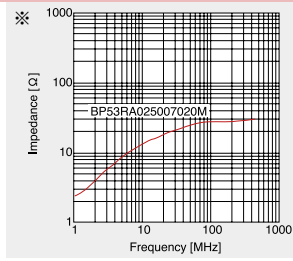
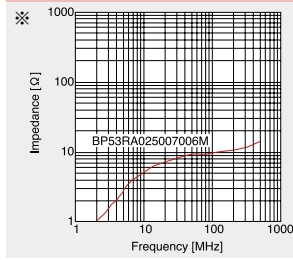


Ordering code	External dimensions [mm] (inch)				
	A	B	C	φD	E
BP53 MA19034020AA	1.9±0.2 (0.075±0.008)	3.4±0.3 (0.134±0.012)	2.0±0.15 (0.079±0.006)	0.9±0.1 (0.035±0.004)	1.4 (0.055)
CP22 MA26053020AA	2.6±0.3 (0.102±0.012)	5.3±0.3 (0.209±0.012)	2.0±0.3 (0.079±0.012)	1.4±0.2 (0.055±0.008)	2.5 (0.098)
CP22 MA26053040AA	2.6±0.3 (0.102±0.012)	5.3±0.3 (0.209±0.012)	4.0±0.3 (0.157±0.012)	1.4±0.2 (0.055±0.008)	2.5 (0.098)
BP53 MA30060040BA	3.0±0.3 (0.118±0.012)	6.0±0.3 (0.236±0.012)	4.0±0.3 (0.157±0.012)	1.5±0.2 (0.059±0.008)	3.0 (0.118)
CP22 MA30060050AA	3.0±0.3 (0.118±0.012)	6.0±0.3 (0.236±0.012)	5.0±0.3 (0.197±0.012)	1.0±0.2 (0.039±0.008)	2.5 (0.098)
BP53 CP22 MA40070050AA	4.0±0.3 (0.157±0.012)	7.0±0.3 (0.276±0.012)	5.0±0.3 (0.197±0.012)	1.8±0.2 (0.071±0.008)	3.0 (0.118)

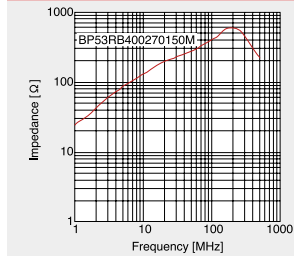
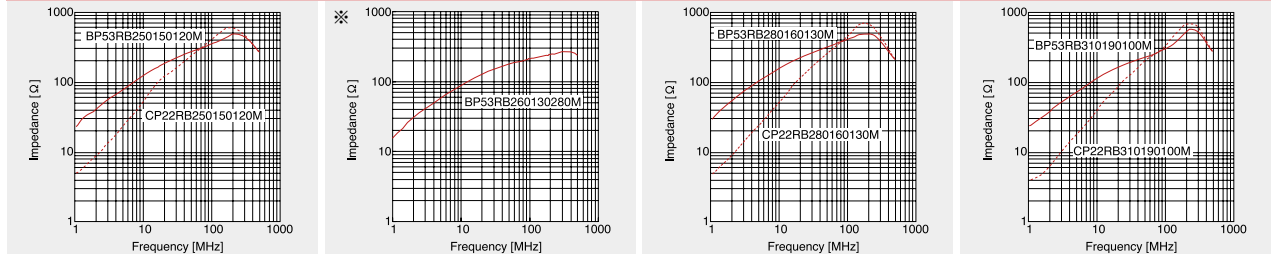
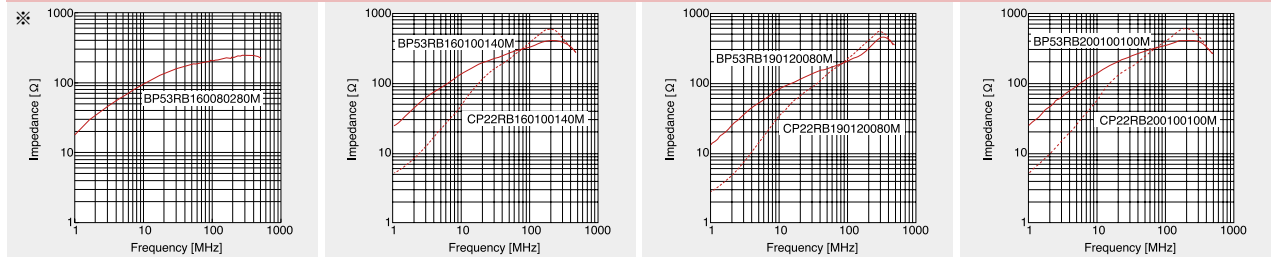
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ELECTRICAL CHARACTERISTICS

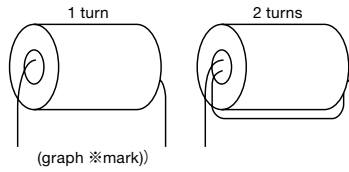
● Ring cores (RA/RB series)



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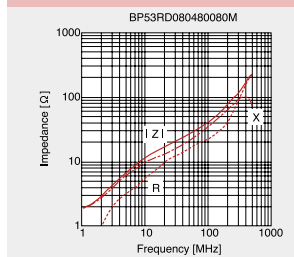
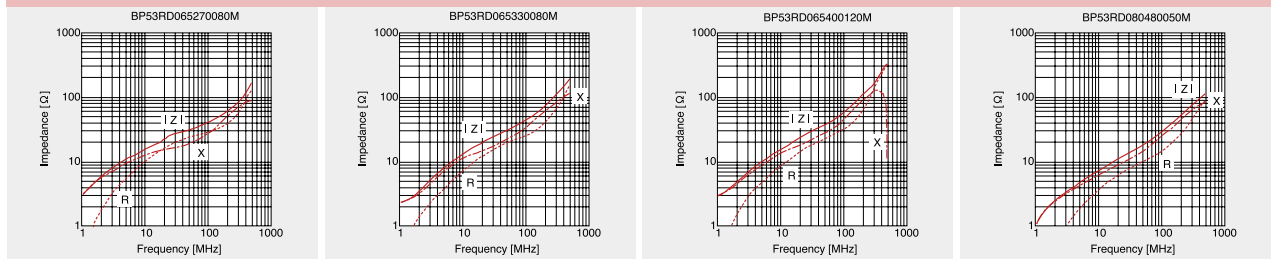
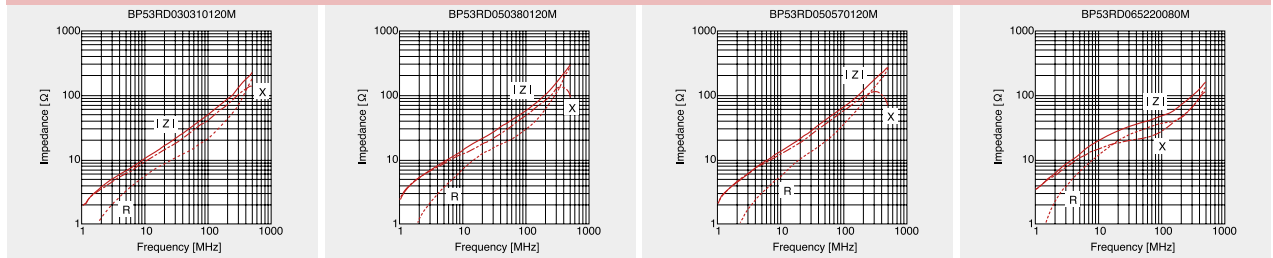
Measuring method :



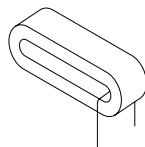
Measuring equipment : HP4291A RF impedance analyzer

FERRITIC CORE

RD Type



Measuring method :



Measuring equipment : RF impedance analyzer HP4291A

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RELIABILITY DATA

Ferrite Cores

1. Operating Temperature Range																				
Specified Value	RA, RB Series	-25°C to +85°C																		
	RD Series																			
	MA Series																			
2. Storage Temperature Range																				
Specified Value	RA, RB Series	-40°C to +85°C																		
	RD Series																			
	MA Series																			
3. Capacitance																				
Specified Value	RA, RB Series	-																		
	RD Series																			
	MA Series		Per Each in-dividual spec.																	
[Test Methods and Remarks] Measurement shall be made at the specified frequency using the specified measuring equipment.																				
4. Q																				
Specified Value	RA, RB Series	-																		
	RD Series																			
	MA Series		Per Each in-dividual spec.																	
[Test Methods and Remarks] Measurement shall be made at the specified frequency using the specified measuring equipment.																				
5. Inductance																				
Specified Value	RA, RB Series	-																		
	RD Series																			
	MA Series		Per Each in-dividual spec.																	
[Test Methods and Remarks] Measurement shall be made at the specified frequency using the specified measuring equipment.																				
6. Impedance																				
Specified Value	RA, RB Series	Within the specified tolerance																		
	RD Series																			
	MA Series		Per Each in-dividual spec.																	
[Test Methods and Remarks] Measuring equipment : HP4291A or its equivalent Measuring frequency : Specified frequency																				
7. Thermal shock																				
Specified Value	RA, RB Series	Appearance : No abnormality Impedance change : Within $\pm 20\%$																		
	RD Series																			
	MA Series		-																	
[Test Methods and Remarks]																				
<table border="1"> <thead> <tr> <th colspan="3">Conditions for 1 cycle</th> </tr> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Duration (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25\pm3</td> <td>30\pm3</td> </tr> <tr> <td>2</td> <td>Room temperature</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>+85\pm3</td> <td>30\pm3</td> </tr> <tr> <td>4</td> <td>Room temperature</td> <td>Within 3</td> </tr> </tbody> </table>			Conditions for 1 cycle			Step	Temperature (°C)	Duration (min)	1	-25 \pm 3	30 \pm 3	2	Room temperature	Within 3	3	+85 \pm 3	30 \pm 3	4	Room temperature	Within 3
Conditions for 1 cycle																				
Step	Temperature (°C)	Duration (min)																		
1	-25 \pm 3	30 \pm 3																		
2	Room temperature	Within 3																		
3	+85 \pm 3	30 \pm 3																		
4	Room temperature	Within 3																		
Number of cycles : 10 cycles Recovery : 3hrs of recovery under the standard condition after the removal from the test chamber.																				
8. Damp heat																				
Specified Value	RA, RB Series	Appearance : No abnormality Impedance change : Within $\pm 20\%$																		
	RD Series																			
	MA Series		-																	
[Test Methods and Remarks] Temperature : 60 \pm 2°C Humidity : 90~95%RH Duration : 1000 hrs Recovery : 3hrs of recovery under the standard condition after the removal from the test chamber.																				
9. Low temperature life test																				
Specified Value	RA, RB Series	Appearance : No abnormality Impedance change : Within $\pm 20\%$																		
	RD Series																			
	MA Series		-																	
[Test Methods and Remarks] Temperature : -40 \pm 3°C Duration : 1000 hrs Recovery : 3hrs of recovery under the standard condition after the removal from the test chamber.																				
10. High temperature life test																				
Specified Value	RA, RB Series	Appearance : No abnormality Impedance change : Within $\pm 20\%$																		
	RD Series																			
	MA Series		-																	
[Test Methods and Remarks] Temperature : 85 \pm 3°C Duration : 1000 hrs Recovery : 3hrs of recovery under the standard condition after the removal from the test chamber.																				
Note on standard condition : "standard condition" referred to herein is defined as follows : 5 to 35°C of temperature, 45 to 85% relative humidity, and 86 to 106 kPa of air pressure. When there are questions concerning measurement results : In order to provide correlation data, the test shall be conducted under condition of 23 \pm 2°C of temperature, 60 to 70% relative humidity, and 86 to 106 kPa of air pressure. Unless otherwise specified, all the tests are conducted under the "standard condition."																				

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