

MULTILAYER FERRITE CHIP BEAD FOR HIGH FREQUENCY AND
LARGE CURRENT

片式铁氧体高频大电流磁珠



PHPB SERIES



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Multilayer Ferrite Chip Bead for High Frequency and Large Current-PHPB Series

片式铁氧体高频大电流磁珠-PHPB 系列



INTRODUCTION AND CHARACTERISTICS 产品介绍及特性

INTRODUCTION	产品介绍
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◆ A ferrite bead is a passive electric component that suppresses high frequency noise in electronic circuits. It is a specific type of electronic choke. Ferrite beads employ the dissipation of high frequency currents in a ferrite ceramic to build high frequency noise suppression devices. PHPB series is endowed with perfect for EMI suppression at high frequency($\geq 1\text{GHz}$).

◆磁珠是一种被动元件，用来抑制电路中的高频噪声。磁珠是一种特别的扼流圈，其成份多半为铁氧体，利用其高频电流产生的热耗散来抑制高频噪声。PHPB 系列对高频($\geq 1\text{GHz}$)段噪声具有优良的 EMI 抑制效果。

CHARACTERISTICS	特性
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- ◆ Monolith structure for high reliability
- ◆ Under the same size the multilayer chip beads produce higher impedance than plugTin beads
- ◆ No cross coupling due to magnetic shield
- ◆ Perfect shape for mounting with no directionality
- ◆ Excellent solderability and high heat resistance or reflow soldering or wave soldering

- ◆ 积层独石结构、高可靠性
- ◆ 在同样的尺寸下较插装磁珠有更高的阻抗值
- ◆ 良好的磁屏蔽，无交叉耦合
- ◆ 无引线结构，适合表面安装
- ◆ 良好的焊接性，适合于回流焊或波峰焊

APPLICATIONS	应用产品
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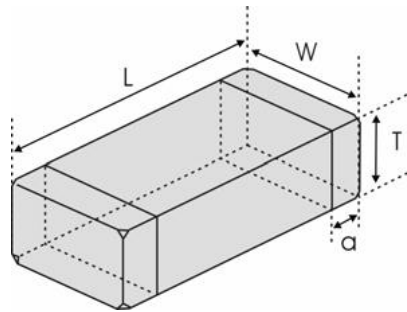
- ◆ Mother board,tablet PC,notebook,desktop computers and peripheral equipment
- ◆ DSC,DVC,LCD Television,Set Top Box
- ◆ Mobile phone,smart phone,PHD
- ◆ Redialed noise suppression on digital product clock lines signal lines and suppression noise on circuit

- ◆ 主机板，平板电脑，笔记型，桌上型电脑及其周边设备
- ◆ 数位相机，数位摄影机，液晶电视机，数位机上盒
- ◆ 行动电话，智能手机，个人导航设备
- ◆ 用于数据传输线、信号线。电源及回路部分的抗干扰

PRODUCT IDENTIFICATION 产品型号

PHPB 1608 S 601 T R15
 ① ② ③ ④ ⑤ ⑥

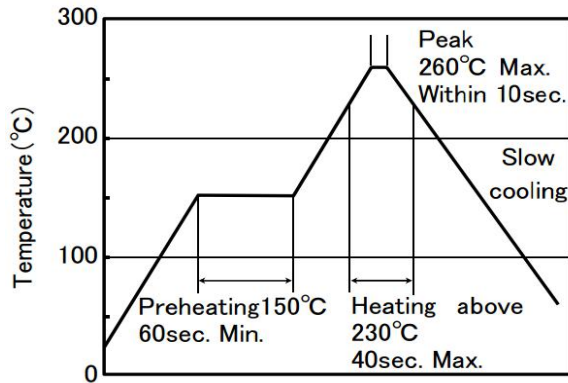
①Product Series Code 产品系列码	PHPB	Multilayer Ferrite Chip Bead for High Frequency and Large Current 片式铁氧体高频大电流磁珠
②Size Code 尺寸码	1608	长×宽 (L×W) (mm) 1.6×0.8
③Material Code 材质代号	--	P M S
④Nominal Impedance 阻抗	600	60 Ω
	601	600 Ω
⑤Packing 包装形式	T	Tape and Reel 编带
⑥Rated Current 额定电流值	2R0	2000mA
	R15	150mA

SHAPE AND DIMENSIONS 外观尺寸


SIZE 尺寸	L 长 mm	W 宽 mm	T 厚 mm	a 银厚 mm
1005(0402)	1.0±0.15	0.5±0.15	0.5±0.15	0.15~0.35
1608(0603)	1.6±0.15	0.8±0.15	0.8±0.15	0.1~0.5
3225(1210)	3.2±0.2	2.5±0.2	1.3±0.2	0.6~1.0
4516(1806)	4.5±0.2	1.6±0.2	1.6±0.2	0.6~1.0
4532(1812)	4.5±0.2	3.2±0.2	1.5±0.2	0.6~1.0
5650(2220)	5.59±0.51	5.08±0.25	2.0±0.25	0.51~1.01

STORAGE AND OPERATING CONDITIONS 储存及操作条件

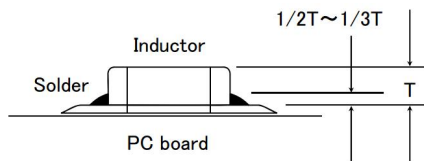
Operating Temperature Range	-55°C~+125°C
Storage Temperature and Humidity Range	-10°C~+40°C, 70%RH max.

RECOMMENDED SOLDERING CONDITION 建议焊锡方式
REFLOW SOLDERING 回流焊


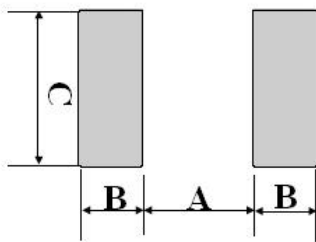
- ① Ceramic chip components should be preheated to within 100 to 130°C of the soldering.
- ② Assured to be reflow soldering for 2 times.

Caution:

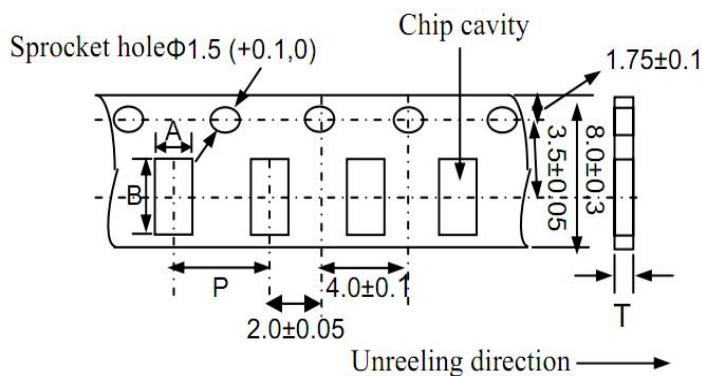
1) The ideal condition is to have solder mass (fillet) controlled to 1/2 to 1/3 of the thickness of the inductor.



2) Because excessive dwell times can detrimentally affect solderability, soldering duration should be kept as close to recommended times as possible.

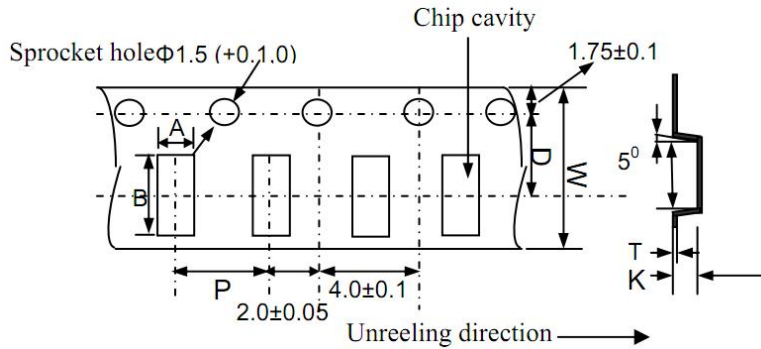
RECOMMENDED LAND PATTERN 推荐的焊盘尺寸


Dimension (mm)	A (mm)	B (mm)	C (mm)
1005	0.45~0.55	0.40~0.50	0.45~0.55
1608	0.6~0.8	0.6~0.8	0.6~0.8
3225	1.9~2.1	1.2~1.5	2.6~2.8
4516	2.8~3.2	1.25~1.75	0.9~1.6
4532	2.8~3.0	1.5~1.8	3.3~3.6
5650	4.0~4.2	1.8~2.0	5.2~5.5

PACKING STANDARD 包装标准
Taping Dimensions
◆ Paper tape (8mm wide)


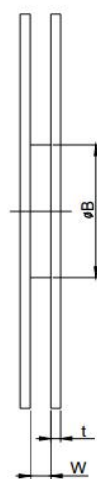
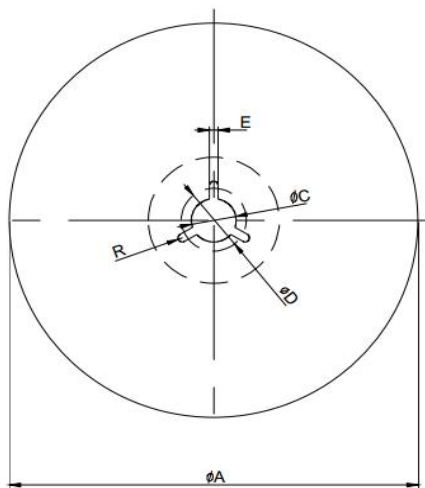
Type	Chip Thickness	A	B	P	T max.	Quantity (pcs/reel)
	(mm)					ø178mm Reel
PHPB1005	0.50	0.65	1.15	2	0.80	10000
PHPB1608	0.80	1.00	1.80	4	1.10	4000

Embossed Tape(8mm and 12mm wide)



Type	Chip Thicknes	W	A	B	D	P	K	T max.	Quantity (pcs/reel)	
	(mm)								ø178 mm	Ø330 mm
PHPB3225	1.3	8	2.9	3.6	3.5	4	1.7	0.25	2000	10000
PHPB4516	1.6	12	1.9	4.9	5.5	4	1.93	0.24	2000	9000
PHPB4532	1.5	12	3.6	4.9	5.5	4	2.05	0.30	1000	4000
PHPB5650	2.0	12	5.4	5.95	5.5	4	2.48	0.33	--	2000

◆ Reel Dimensions



Symbol	ø178mm Reel	Ø330mm Reel
A	Ø178±2	Ø330±2
B	Ø60±2	Ø100±2
C	Ø13±0.8	Ø13±0.8
D	Ø21±0.8	Ø21±0.8
E	2	2
W8	10±1.5	10±1.5
W12	14.5±1.5	14.5±1.5
W16	--	17.4(Typ.)
W24	--	24.4(Typ.)
T	2±0.5	2±0.5
R	1	1

SPECIFICATIONS 规格特性
PHPB 1005(0402) TYPE

Part Number 型号	Impedance At 100MHz 阻抗 Z	Impedance At 1GHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	$\Omega \pm 40\%$	Ω (Max.)	mA (Max.)	mm
PHPB1005M121TR60	120	100	0.25	600	0.5±0.15
PHPB1005M221TR50	220	300	0.38	500	0.5±0.15
PHPB1005P121TR60	120	100	0.25	600	0.5±0.15
PHPB1005P121T1R1	120	100	0.13	1100	0.5±0.15
PHPB1005P221TR50	220	200	0.38	500	0.5±0.15
PHPB1005P221TR70	220	250	0.25	700	0.5±0.15

PHPB 1608(0603) TYPE

Part Number 型号	Impedance At 100MHz 阻抗 Z	Impedance At 1GHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	$\Omega \pm 40\%$	Ω (Max.)	mA (Max.)	mm
PHPB1608M121T1R5	120	200	0.07	1500	0.8±0.15
PHPB1608M151TR80	150	200	0.20	800	0.8±0.15
PHPB1608M151T1R5	150	200	0.07	1500	0.8±0.15
PHPB1608M221TR60	220	300	0.25	600	0.8±0.15
PHPB1608M221T1R2	220	300	0.12	1200	0.8±0.15
PHPB1608M331TR90	330	380	0.15	900	0.8±0.15
PHPB1608M391TR70	390	600	0.18	700	0.8±0.15
PHPB1608M471TR70	470	500	0.22	700	0.8±0.15
PHPB1608M601TR70	600	750	0.24	700	0.8±0.15
PHPB1608M102TR60	1000	1000	0.35	600	0.8±0.15
PHPB1608P101TR80	100	100	0.20	800	0.8±0.15
PHPB1608P101T2R0	100	100	0.055	2000	0.8±0.15
PHPB1608P121T2R0	120	110	0.055	2000	0.8±0.15
PHPB1608P221TR60	220	220	0.25	600	0.8±0.15
PHPB1608P471TR50	470	400	0.32	500	0.8±0.15
PHPB1608P601TR50	600	450	0.35	500	0.8±0.15
PHPB1608P102TR15	1000	750	0.90	150	0.8±0.15

PHPB 3225(1210) TYPE

Part Number 型号	Impedance At 100MHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	Ω (Max.)	mA (Max.)	mm
PHPB3225P601T2R0	600	0.10	2000	1.3±0.2
PHPB3225P102T2R0	1000	0.24	2000	1.3±0.2

SPECIFICATIONS 规格特性
PHPB 4516(1806) TYPE

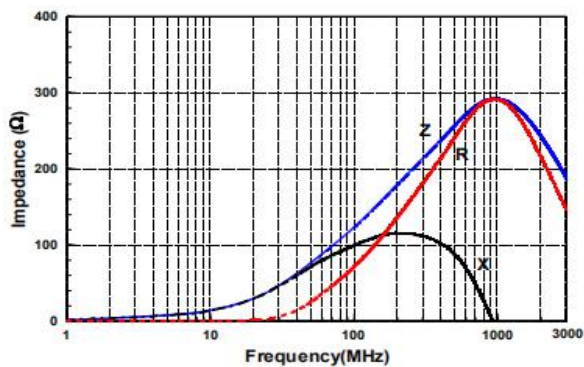
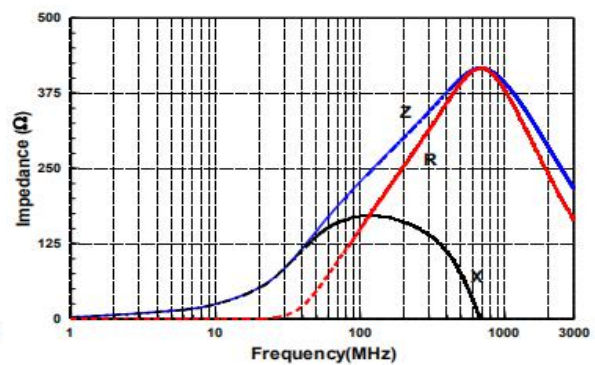
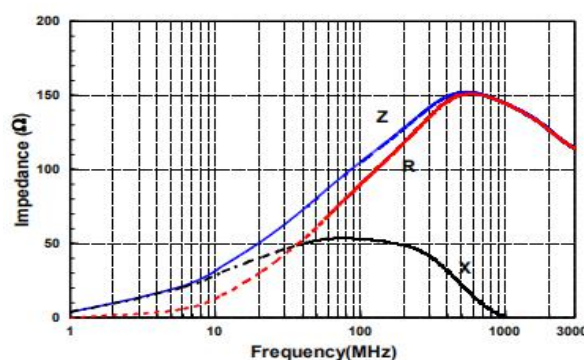
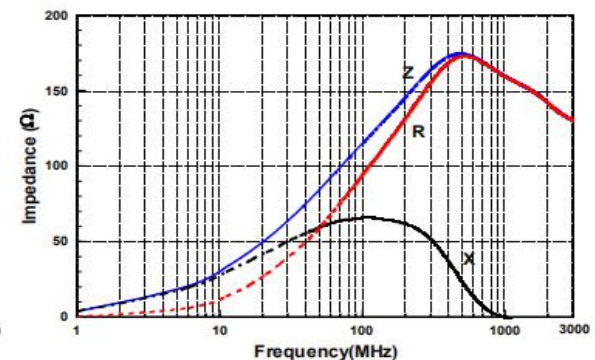
Part Number 型号	Impedance At 100MHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	Ω (Max.)	mA (Max.)	mm
PHPB4516P851T1R5	850	0.10	1500	1.6 ± 0.2
PHPB4516P102T1R5	1000	0.17	1500	1.6 ± 0.2

PHPB 4532(1812) TYPE

Part Number 型号	Impedance At 100MHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	Ω (Max.)	mA (Max.)	mm
PHPB4532P681T2R5	680	0.06	2500	1.5 ± 0.2
PHPB4532P102TR50	1000	1.30	500	1.5 ± 0.2
PHPB4532P132T2R0	1300	0.10	2000	1.5 ± 0.2

PHPB 5650(2220) TYPE

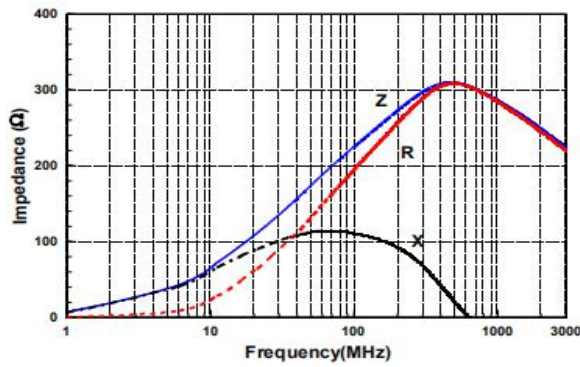
Part Number 型号	Impedance At 100MHz 阻抗 Z	DC Resistance 直流电阻 RDC	Rated Current 额定电流 Ir	Thickness 厚度
Units 单位	$\Omega \pm 25\%$	Ω (Max.)	mA (Max.)	mm
PHPB5650P551T4R0	550	0.035	4000	2.0 ± 0.25

TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性
Z, R, X vs. FREQUENCY CHARACTERISTICS
PHPB1005M121TR60

PHPB1005M221TR50

PHPB1005P121TR60

PHPB1005P221T1R1


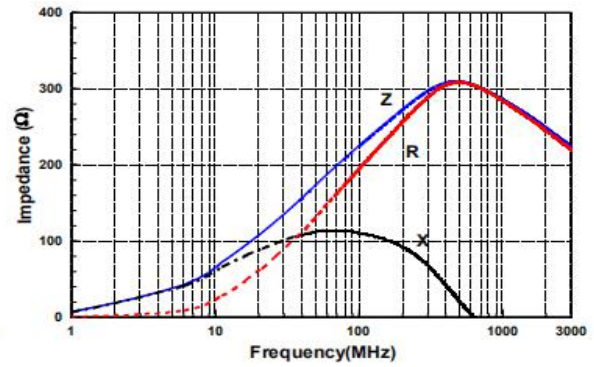
TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性

Z, R, X vs. FREQUENCY CHARACTERISTICS

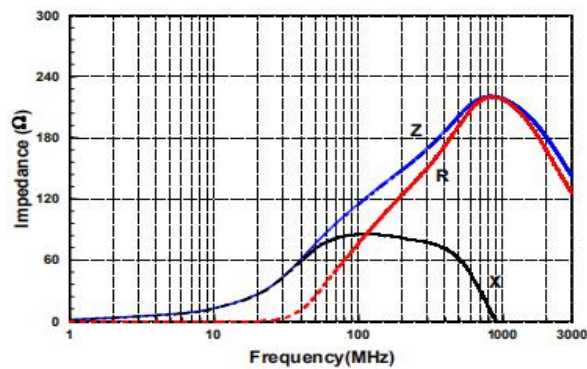
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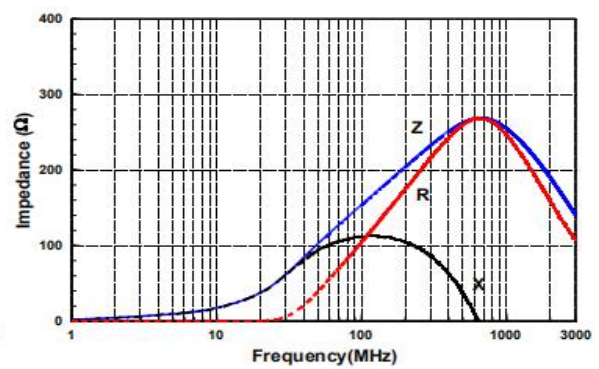
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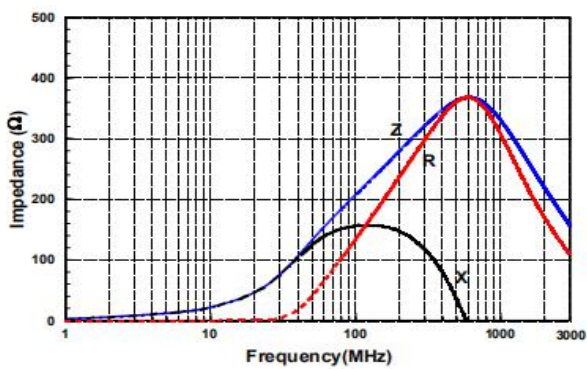
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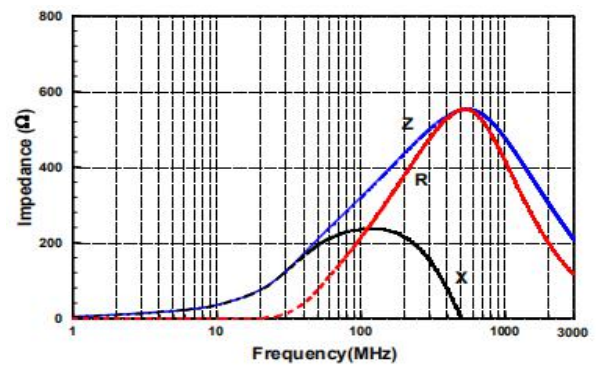
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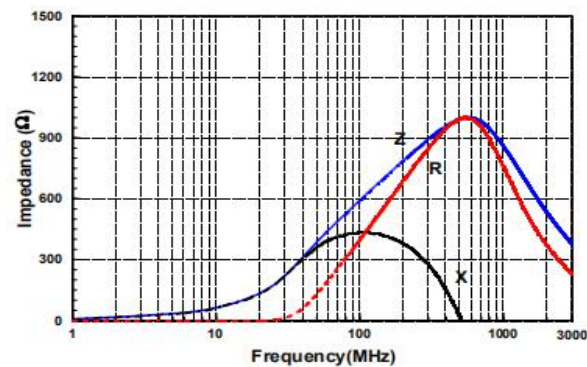
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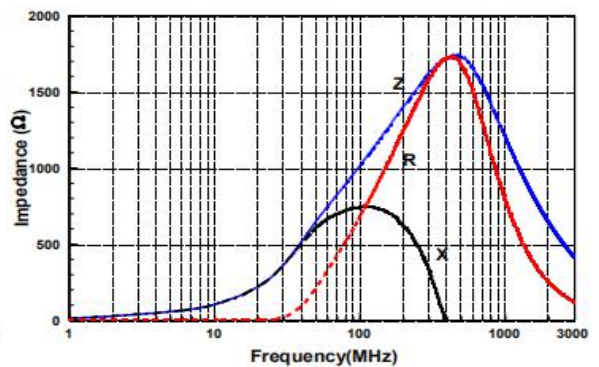
PHPB1608M331TR90



PHPB1608M601TR70



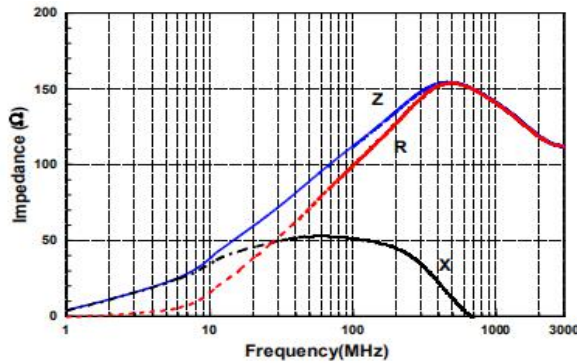
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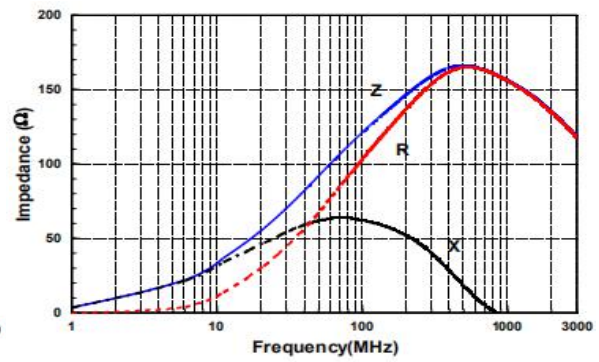
TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性

Z, R, X vs. FREQUENCY CHARACTERISTICS

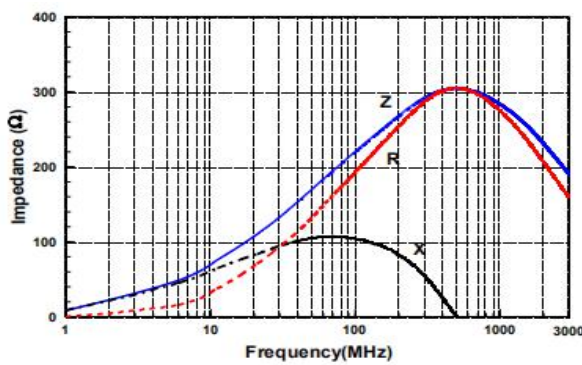
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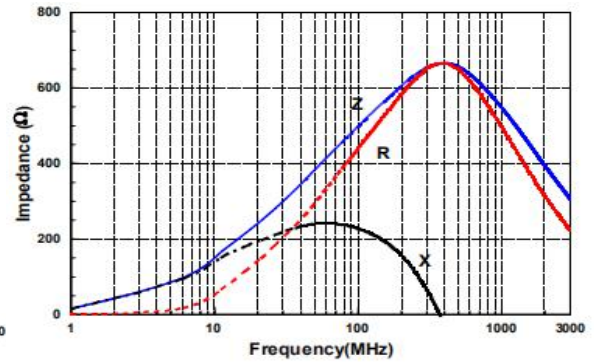
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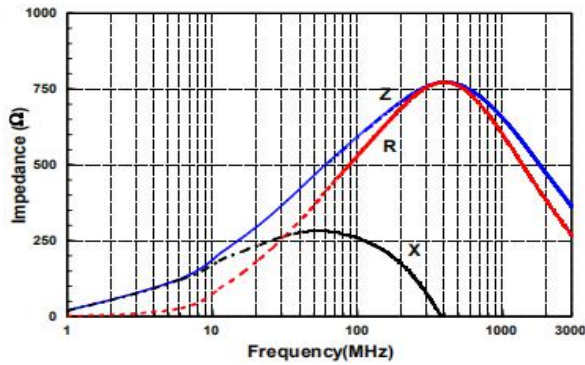
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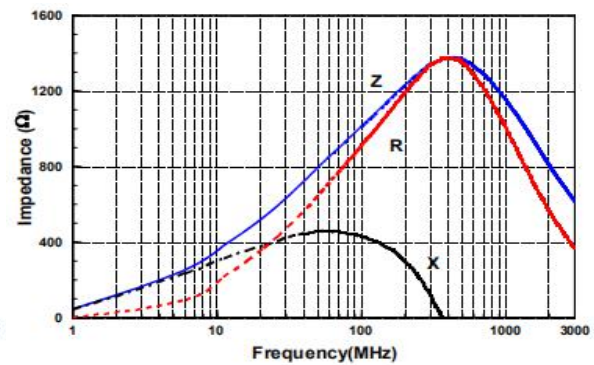
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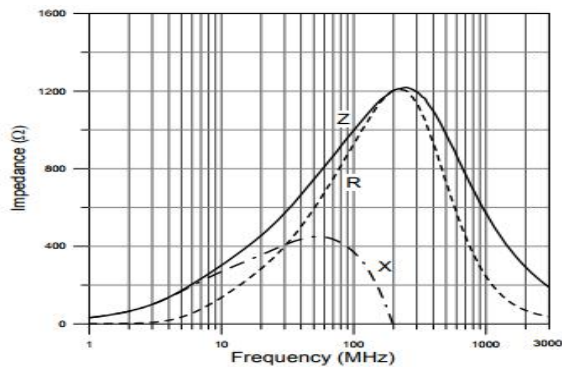
PHPB1608P601TR50



PHPB1608P102TR15



PHPB4532P102TR50



PHPB5650P551T4R0

