

MULTILAYER FERRITE CHIP BEAD FOR LARGE CURRENT

片式铁氧体大电流磁珠



PFPB SERIES



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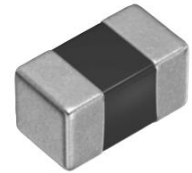
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# Multilayer Ferrite Chip Bead for Large Current-PFPB Series

## 片式铁氧体大电流磁珠-PFPB 系列



### INTRODUCTION AND CHARACTERISTICS 产品介绍及特性

#### INTRODUCTION

◆ 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. Smaller DC resistance and larger rate current than PFGB series.

#### 产品介绍

◆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。相对于 PFGB 系列具有更小的直流电阻和更大的额定电流。

#### CHARACTERISTICS

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

#### 特性

- ◆ 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

- ◆ 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

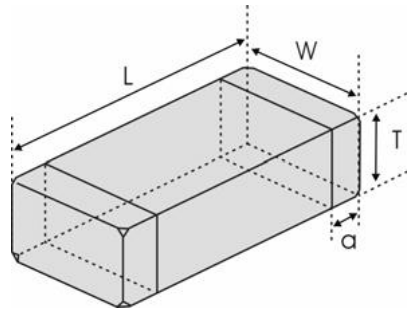
#### 应用产品

- ◆ 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**

**PFPB 1608 M 601 T R15**  
 ① ② ③ ④ ⑤ ⑥

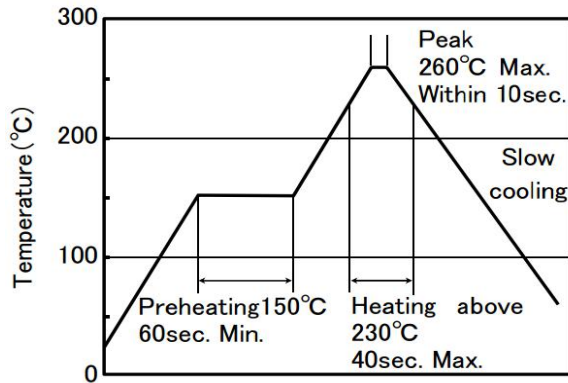
①Product Series Code 产品系列码	PFPB	Multilayer Ferrite Chip Bead for Large Current 片式铁氧体大电流磁珠
②Size Code 尺寸码	1608	长×宽 (L×W) (mm) 1.6×0.8
③Material Code 材质代号	--	P M S
④Nominal Impedance 阻抗	600	60 Ω
	601	600 Ω
⑤Packing 包装形式	T	Tape and Reel 编带
⑥Rated Current 额定电流值	2R0	2000mA
	R15	150mA

**SHAPE AND DIMENSIONS 外观尺寸**


SIZE 尺寸	L 长 mm	W 宽 mm	T 厚 mm	a 银厚 mm
0402(01005)	0.4±0.02	0.2±0.02	0.2±0.02	0.08~0.14
0603(0201)	0.6±0.05	0.3±0.05	0.3±0.05	0.1~0.2
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
2012(0805)	2.0±0.2	1.25±0.2	0.85±0.2	0.2~0.8
3216(1206)	3.2±0.2	1.6±0.2	0.85±0.2	0.2~0.8
			1.1±0.2	
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

**STORAGE AND OPERATING CONDITIONS 储存及操作条件**

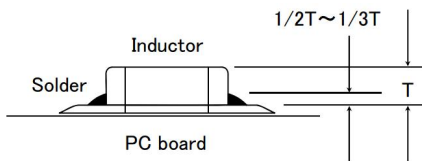
Operating Temperature Range	-55℃~+125℃
Storage Temperature and Humidity Range	-10℃~+40℃, 70%RH max.

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


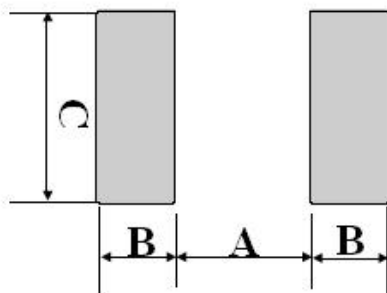
- ① Ceramic chip components should be preheated to within 100 to 130°C of the soldering.
- ② Assured to be reflow soldering for 2 times.

Caution:

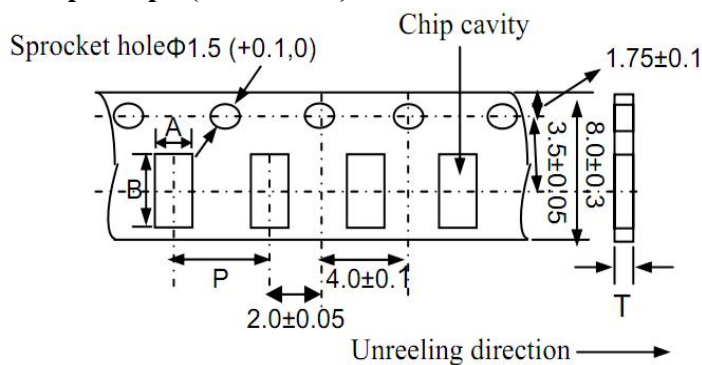
1) The ideal condition is to have solder mass (fillet) controlled to 1/2 to 1/3 of the thickness of the inductor.



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

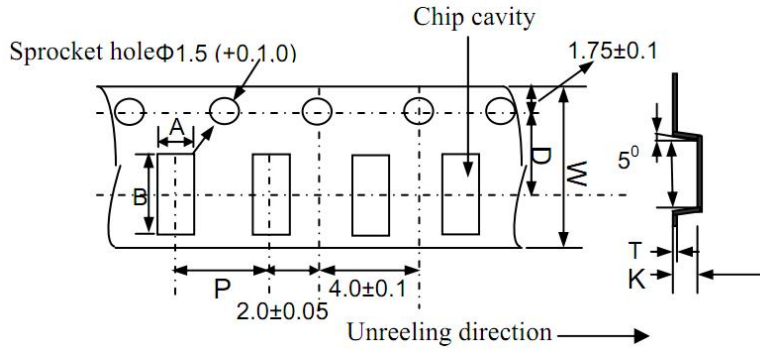
**RECOMMENDED LAND PATTERN 推荐的焊盘尺寸**


Dimension (mm)	A (mm)	B (mm)	C (mm)
0402	0.2	0.15~0.2	0.18~0.2
0603	0.2~0.3	0.2~0.3	0.3~0.35
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
2012	0.8~1.2	0.8~1.2	0.9~1.6
3216	1.8~2.5	1.0~1.5	1.2~2.0
3225	1.9~2.1	1.2~1.5	2.6~2.8
4516	2.8~3.0	1.5~1.8	1.2~2.0
4532	2.8~3.0	1.5~1.8	3.3~3.6

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


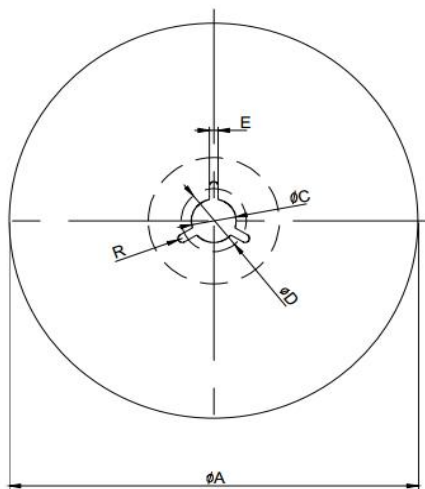
Type	Chip Thickness	A	B	P	T max.	Quantity (pcs/reel)
	(mm)					ø178mm Reel
PFPB0402	0.20	0.26	0.46	2	0.40	20000
PFPB0603	0.30	0.40	0.70	2	0.55	15000
PFPB1005	0.50	0.65	1.15	2	0.80	10000
PFPB1608	0.80	1.00	1.80	4	1.10	4000
PFPB2012	0.85	1.50	2.30	4	1.10	4000
PFPB3216	0.85	1.90	3.50	4	1.10	4000

**Embossed Tape(8mm and 12mm wide)**



Type	Chip Thickness	W	A	B	D	P	K max.	T max.	Quantity (pcs/reel)
	(mm)								ø178mm
PFPB3216	1.10	8	1.88	3.5	3.5	4	1.27	0.30	3000
PFPB3225	1.30	8	2.90	3.6	3.5	4	1.70	0.25	2000
PFPB4516	1.60	12	1.90	4.9	5.5	4	1.93	0.24	2000
PFPB4532	1.50	12	3.60	4.9	5.5	4	2.05	0.30	1000

**◆ 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**
**PFPB 0402(01005) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB0402M100T1R1	0~15	0.05	1100	0.2±0.02
PFPB0402M220TR75	22	0.15	750	0.2±0.02
PFPB0402M330TR55	33	0.20	550	0.2±0.02

**PFPB 0603(0201) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB0603M600TR50	60	0.18	500	0.3±0.05
PFPB0603M800TR50	80	0.20	500	0.3±0.05
PFPB0603M121TR45	120	0.25	450	0.3±0.05
PFPB0603M241TR35	240	0.41	350	0.3±0.05
PFPB0603M601TR25	600	1.00	250	0.3±0.05
PFPB0603M102TR20	1000	1.40	200	0.3±0.05

**PFPB 1005(0402) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB1005M100T1R8	0~15	0.02	1800	0.5±0.15
PFPB1005M700TR80	70	0.10	800	0.5±0.15
PFPB1005M121TR70	120	0.13	700	0.5±0.15
PFPB1005M221TR60	220	0.18	600	0.5±0.15
PFPB1005M601TR45	600	0.34	450	0.5±0.15
PFPB1005P700T1R2	70	0.10	1200	0.5±0.15
PFPB1005P121T1R0	120	0.12	1000	0.5±0.15
PFPB1005P221TR80	220	0.18	800	0.5±0.15
PFPB1005P601TR45	600	0.34	450	0.5±0.15

**PFPB 1608(0603) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB1608M300T3R0	30	0.03	3000	0.8±0.15
PFPB1608M600T2R0	60	0.08	2000	0.8±0.15
PFPB1608M750T1R0	75	0.15	1000	0.8±0.15
PFPB1608M121T1R0	120	0.20	1000	0.8±0.15

PFPB1608M221T1R0	220	0.20	1000	0.8±0.15
PFPB1608M601TR05	600	0.35	500	0.8±0.15
PFPB1608P100T3R0	0~15	0.02	3000	0.8±0.15
PFPB1608P300T3R0	30	0.03	3000	0.8±0.15
PFPB1608P600T2R5	60	0.04	2500	0.8±0.15
PFPB1608P121T2R0	120	0.05	2000	0.8±0.15
PFPB1608P221T1R4	220	0.10	1400	0.8±0.15
PFPB1608P331T1R2	330	0.14	1200	0.8±0.15
PFPB1608P391T1R0	390	0.14	1000	0.8±0.15
PFPB1608P471T1R0	470	0.20	1000	0.8±0.15

**SPECIFICATIONS 规格特性**
**PFPB2012(0805) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB2012M390T4R0	39	0.02	4000	0.85±0.2
PFPB2012M800T3R0	80	0.04	3000	0.85±0.2
PFPB2012M121T2R5	120	0.06	2500	0.85±0.2
PFPB2012M221T1R5	220	0.08	1500	0.85±0.2
PFPB2012M301T1R5	300	0.12	1500	0.85±0.2
PFPB2012M471TR80	470	0.25	800	0.85±0.2
PFPB2012M601TR80	600	0.25	800	0.85±0.2
PFPB2012P300T3R0	30	0.02	3000	0.85±0.2
PFPB2012P300T4R0	30	0.015	4000	0.85±0.2
PFPB2012P600T3R0	60	0.025	3000	0.85±0.2
PFPB2012P121T2R5	120	0.04	2500	0.85±0.2
PFPB2012P221T2R0	220	0.07	2000	0.85±0.2
PFPB2012P301T1R5	300	0.10	1500	0.85±0.2
PFPB2012P421T1R0	420	0.20	1000	0.85±0.2
PFPB2012P601TR80	600	0.25	800	0.85±0.2

**PFPB3216(1206) 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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB3216M190T6R0	19	0.010	6000	0.85±0.2
PFPB3216M380T5R0	38	0.015	5000	0.85±0.2
PFPB3216M600T4R0	60	0.02	4000	0.85±0.2
PFPB3216M121T3R0	120	0.03	3000	0.85±0.2
PFPB3216M501T2R0	500	0.07	2000	0.85±0.2
PFPB3216M601T2R0	600	0.07	2000	0.85±0.2
PFPB3216P300T6R0	30	0.01	6000	0.85±0.2
PFPB3216P600T4R0	60	0.025	4000	0.85±0.2

PFPB3216P121T3R0	120	0.03	3000	0.85±0.2
PFPB3216P221T2R0	220	0.08	2000	0.85±0.2
PFPB3216P301T2R0	300	0.10	2000	0.85±0.2
PFPB3216P391T2R0	390	0.07	2000	0.85±0.2
PFPB3216P601T1R5	600	0.10	1500	0.85±0.2
PFPB3216P102TR50	1000	0.30	500	0.85±0.2

**SPECIFICATIONS 规格特性**
**PFPB3225(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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB3225M190T3R0	19	0.025	3000	1.3±0.2
PFPB3225M190T4R0	19	0.01	4000	1.3±0.2
PFPB3225M260T6R0	26	0.006	6000	1.3±0.2
PFPB3225M310T3R0	31	0.025	3000	1.3±0.2
PFPB3225M310T4R0	31	0.01	4000	1.3±0.2
PFPB3225M500T3R0	50	0.04	3000	1.3±0.2
PFPB3225M500T4R0	50	0.025	4000	1.3±0.2
PFPB3225M600T3R0	60	0.04	3000	1.3±0.2
PFPB3225M600T4R0	60	0.025	4000	1.3±0.2
PFPB3225M700T3R0	70	0.05	3000	1.3±0.2
PFPB3225M800T2R0	80	0.06	2000	1.3±0.2
PFPB3225M800T3R0	80	0.05	3000	1.3±0.2
PFPB3225M900T2R0	90	0.04	2000	1.3±0.2
PFPB3225M121T1R0	120	0.1	1000	1.3±0.2
PFPB3225M121T2R0	120	0.08	2000	1.3±0.2
PFPB3225M151T2R0	150	0.08	2000	1.3±0.2
PFPB3225M181T1R0	180	0.12	1000	1.3±0.2
PFPB3225M181T2R0	180	0.09	2000	1.3±0.2
PFPB3225M221T1R0	220	0.135	1000	1.3±0.2
PFPB3225M221T2R0	220	0.1	2000	1.3±0.2
PFPB3225M301T1R0	300	0.15	1000	1.3±0.2
PFPB3225M301T1R5	300	0.12	1500	1.3±0.2
PFPB3225M301T2R0	300	0.1	2000	1.3±0.2
PFPB3225M421T1R5	420	0.12	1500	1.3±0.2
PFPB3225M501T1R0	500	0.16	1000	1.3±0.2
PFPB3225M501T2R0	500	0.11	2000	1.3±0.2
PFPB3225M601T1R0	600	0.16	1000	1.3±0.2
PFPB3225M601T2R0	600	0.11	2000	1.3±0.2
PFPB3225M751T1R0	750	0.16	1000	1.3±0.2
PFPB3225M102T1R0	1000	0.17	1000	1.3±0.2



**SPECIFICATIONS 规格特性**
**PFPB4516(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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB4516M260T6R0	26	0.006	6000	1.6±0.2
PFPB4516M300T6R0	30	0.006	6000	1.6±0.2
PFPB4516M310T6R0	31	0.006	6000	1.6±0.2
PFPB4516M500T4R0	50	0.02	4000	1.6±0.2
PFPB4516M600T3R0	60	0.035	3000	1.6±0.2
PFPB4516M750T3R0	75	0.035	3000	1.6±0.2
PFPB4516M800T3R0	80	0.035	3000	1.6±0.2
PFPB4516M900T3R0	90	0.035	3000	1.6±0.2
PFPB4516M101T3R0	100	0.035	3000	1.6±0.2
PFPB4516M121T2R0	120	0.05	2000	1.6±0.2
PFPB4516M151T2R0	150	0.06	2000	1.6±0.2
PFPB4516M181T2R0	180	0.06	2000	1.6±0.2
PFPB4516M221T3R0	220	0.045	3000	1.6±0.2
PFPB4516M301T2R0	300	0.10	2000	1.6±0.2
PFPB4516M501T2R0	500	0.12	2000	1.6±0.2
PFPB4516M601T2R0	600	0.12	2000	1.6±0.2
PFPB4516M801T1R0	800	0.18	1000	1.6±0.2
PFPB4516M102T1R0	1000	0.18	1000	1.6±0.2

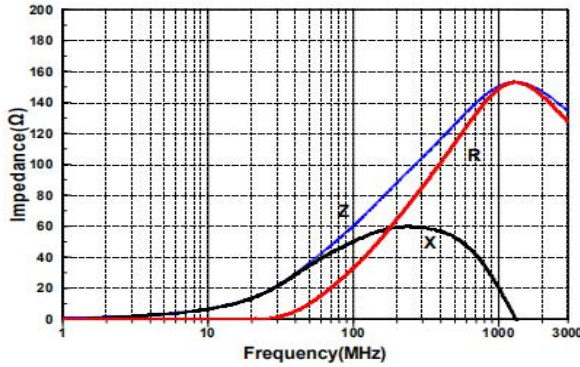
**PFPB4532(1812) TYPE**

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	$\Omega \pm 25\%$	$\Omega$ (Max. )	mA (Max. )	mm
PFPB4532M310T6R0	31	0.006	6000	1.5±0.2
PFPB4532M500T6R0	50	0.006	6000	1.5±0.2
PFPB4532M600T3R0	60	0.015	3000	1.5±0.2
PFPB4532M600T4R0	60	0.01	4000	1.5±0.2
PFPB4532M800T3R0	80	0.015	3000	1.5±0.2
PFPB4532M800T4R0	80	0.01	4000	1.5±0.2
PFPB4532M101T4R0	100	0.015	4000	1.5±0.2
PFPB4532M121T2R0	120	0.035	2000	1.5±0.2
PFPB4532M151T3R0	150	0.025	3000	1.5±0.2
PFPB4532M181T2R0	180	0.035	2000	1.5±0.2
PFPB4532M221T2R0	220	0.045	2000	1.5±0.2
PFPB4532M301T2R0	300	0.045	2000	1.5±0.2
PFPB4532M501T2R0	500	0.08	2000	1.5±0.2
PFPB4532M601T2R0	600	0.08	2000	1.5±0.2

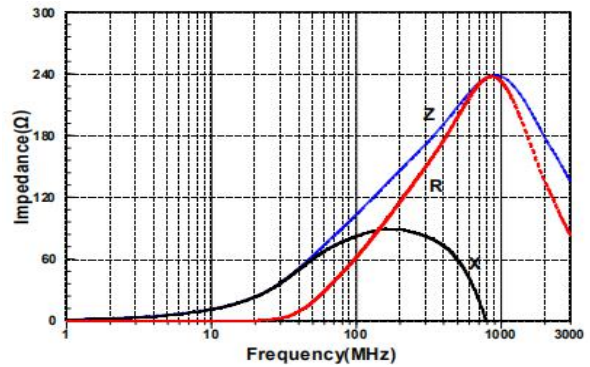
**TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性**

**Z, R, X vs. FREQUENCY CHARACTERISTICS**

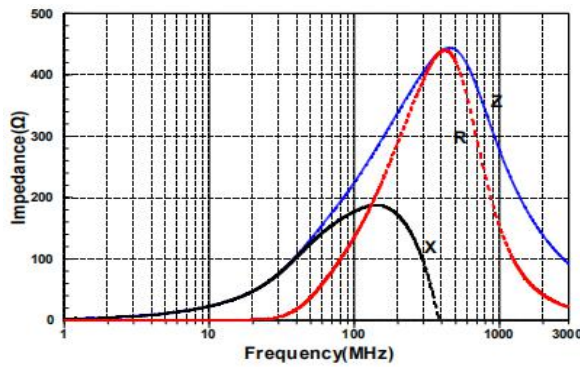
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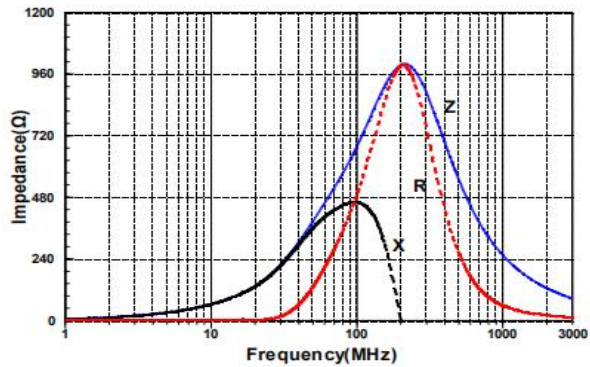
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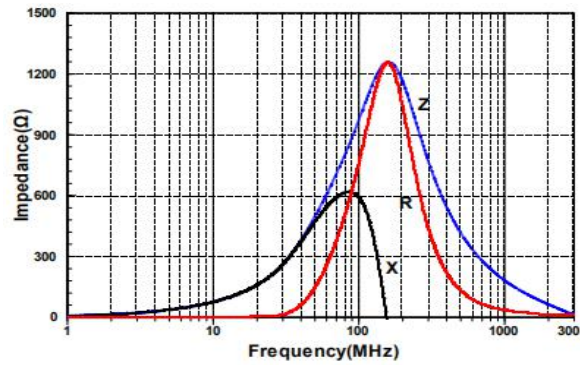
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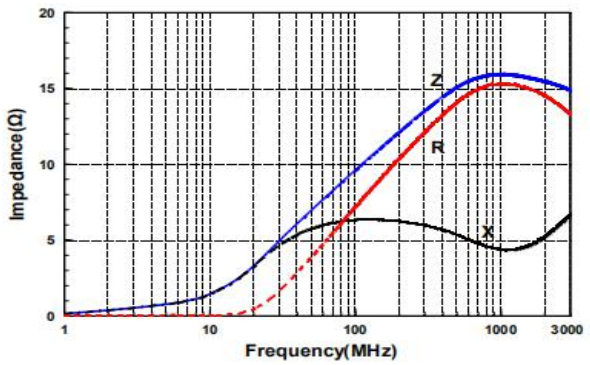
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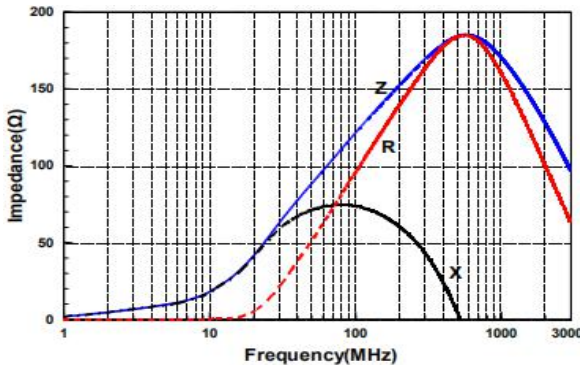
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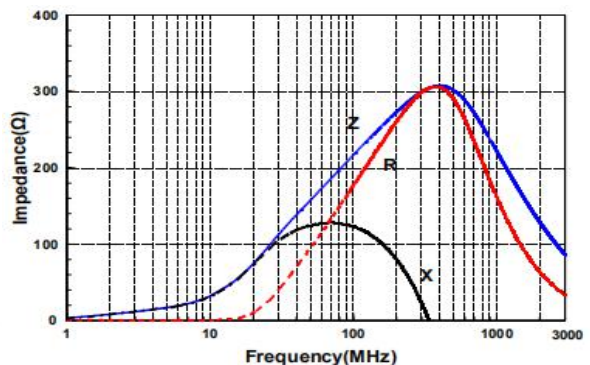
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**PFPB1005M121TR70**



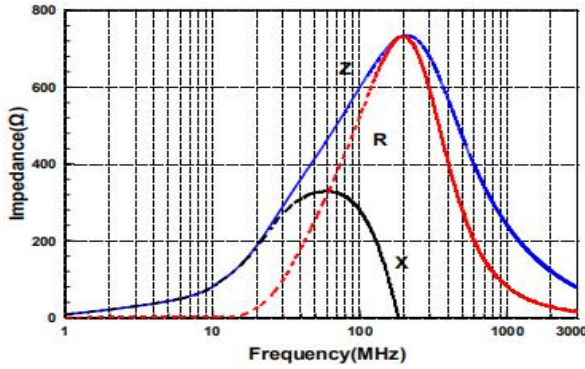
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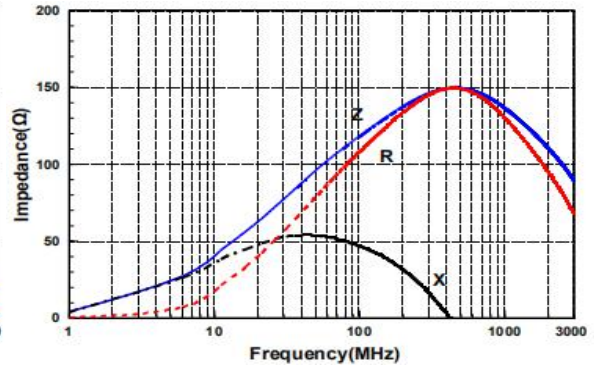
**TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性**

**Z, R, X vs. FREQUENCY CHARACTERISTICS**

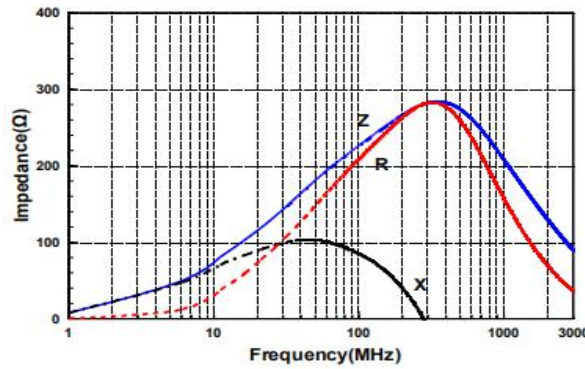
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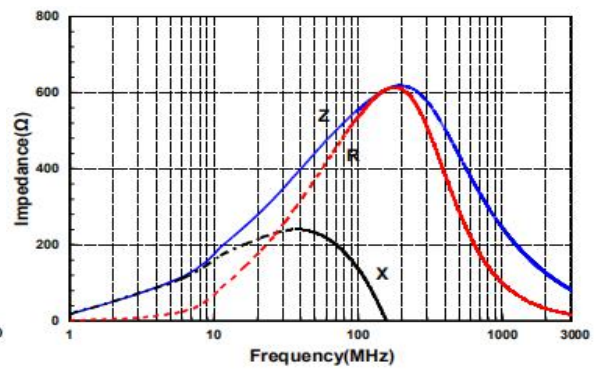
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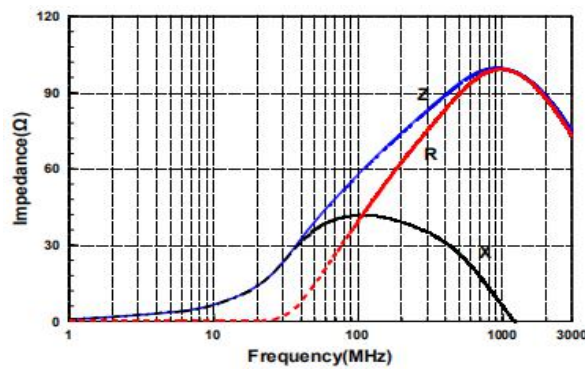
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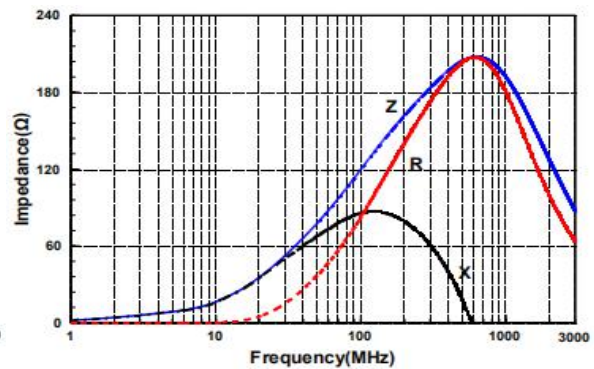
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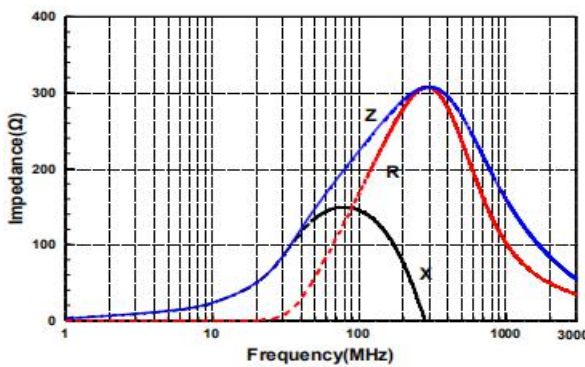
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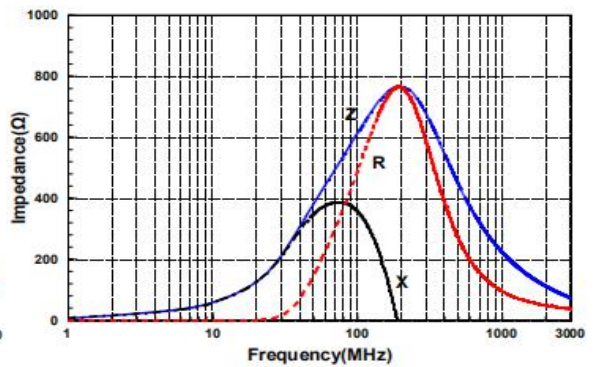
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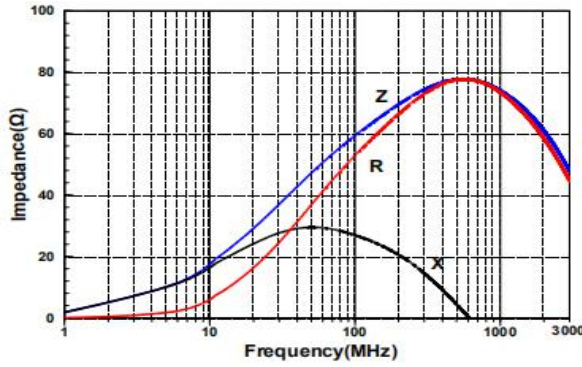
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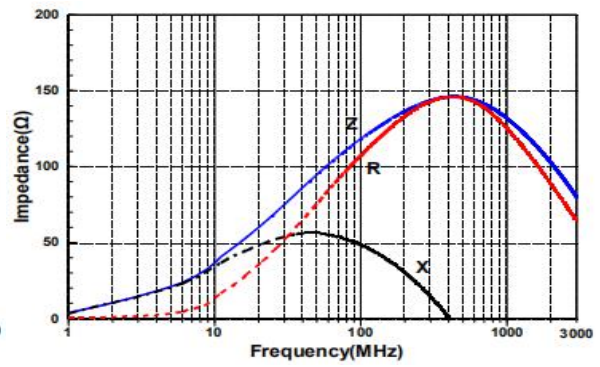
**TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性**

**Z, R, X vs. FREQUENCY CHARACTERISTICS**

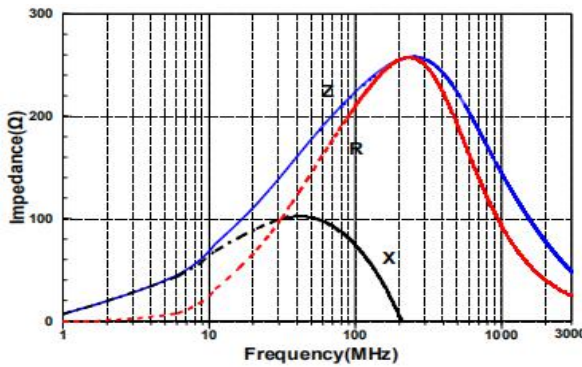
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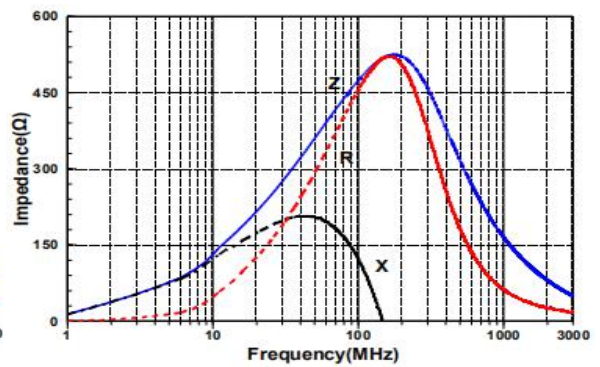
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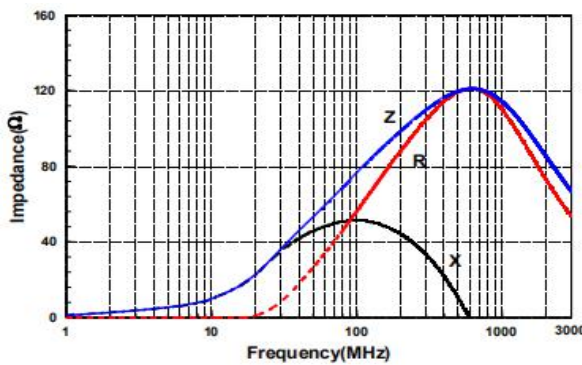
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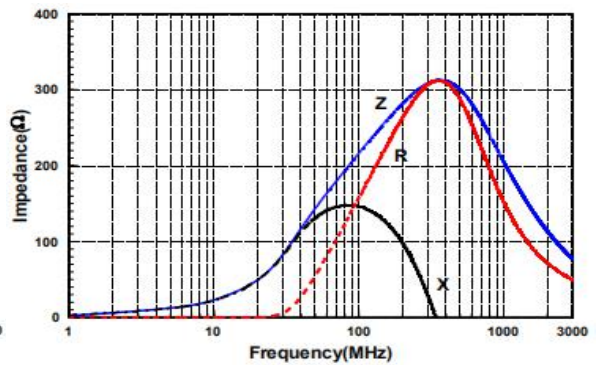
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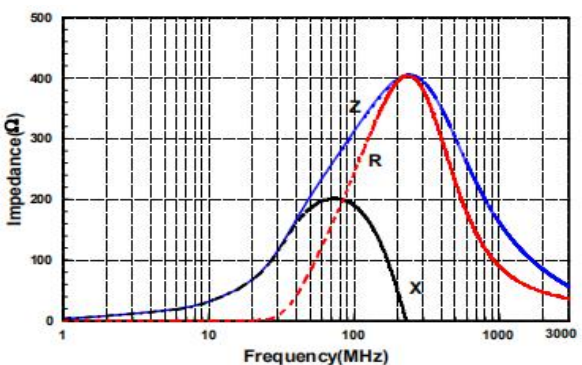
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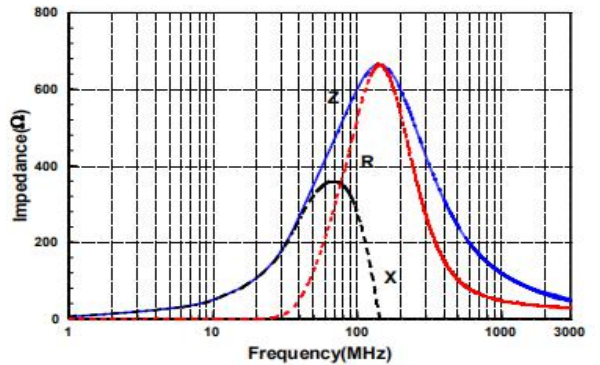
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**PFPB2012M301T1R5**



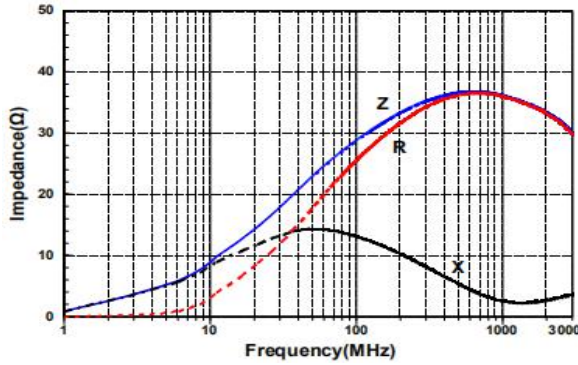
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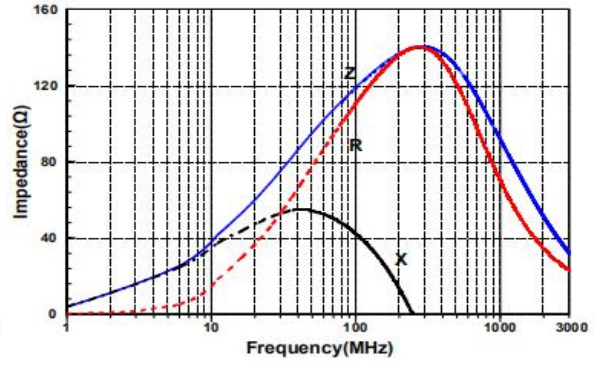
**TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性**

**Z, R, X vs. FREQUENCY CHARACTERISTICS**

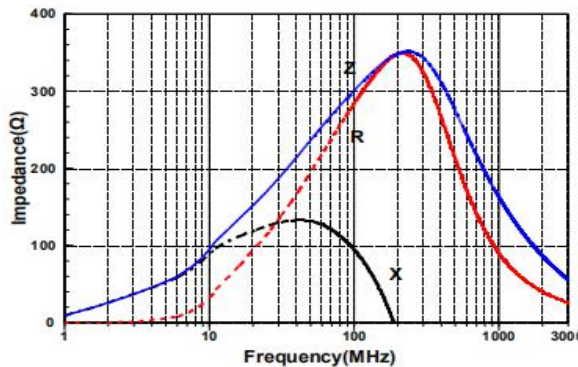
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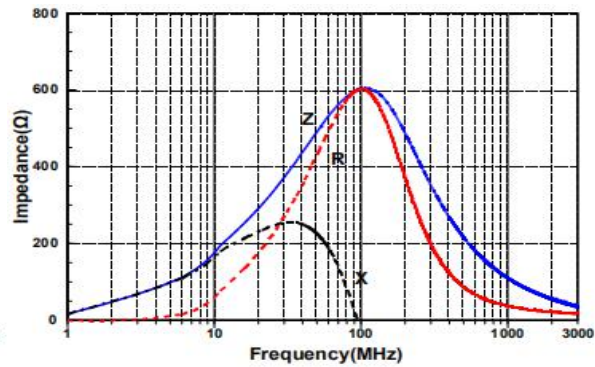
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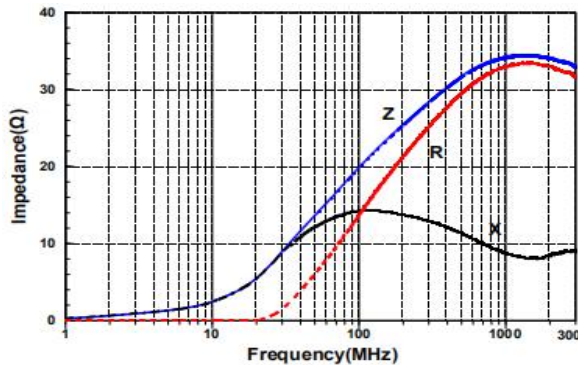
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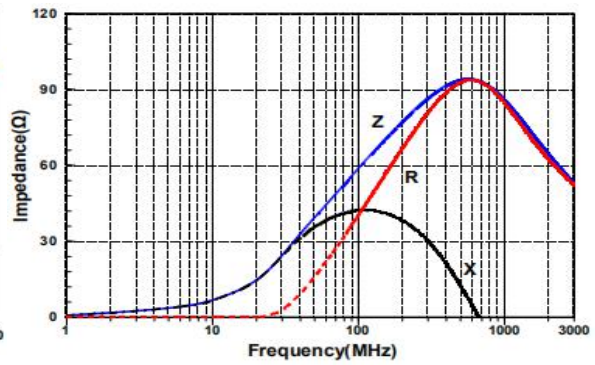
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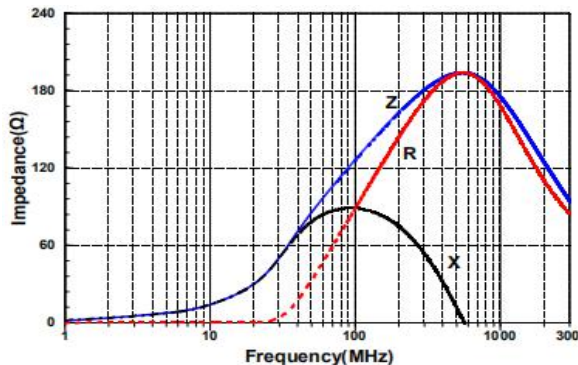
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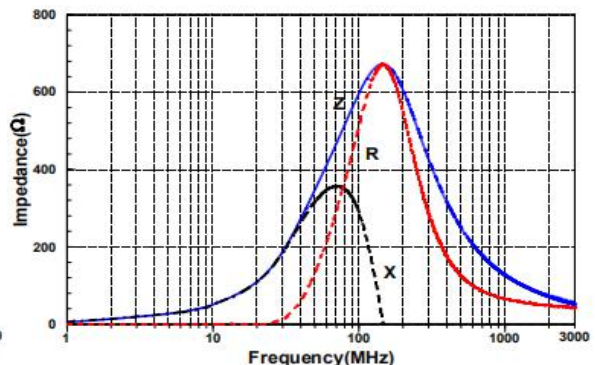
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**PFPB3216M121T3R0**



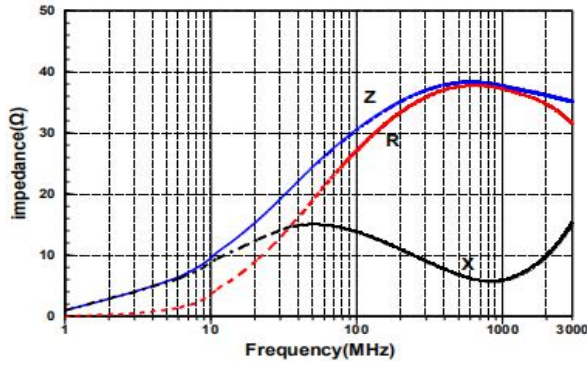
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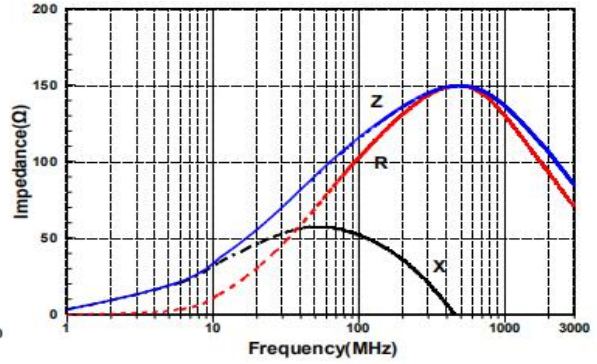
**TYPICAL ELECTRICAL CHARACTERISTICS 典型电气特性**

**Z, R, X vs. FREQUENCY CHARACTERISTICS**

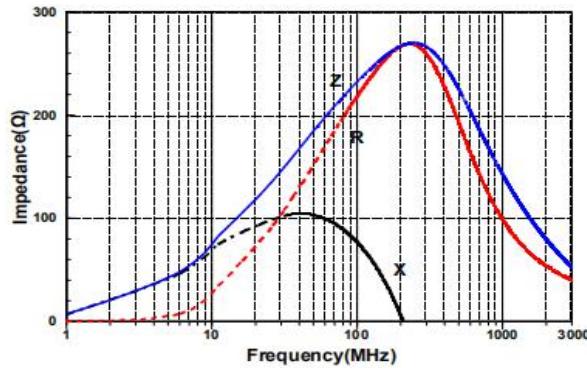
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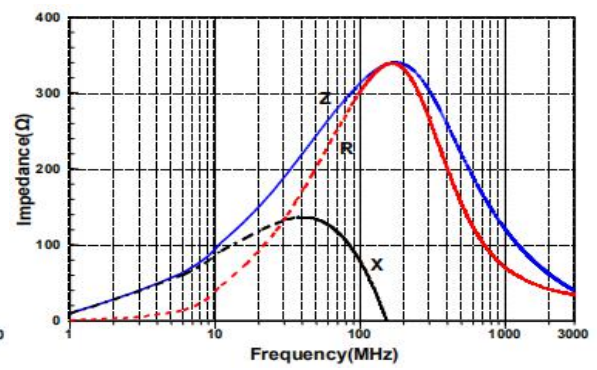
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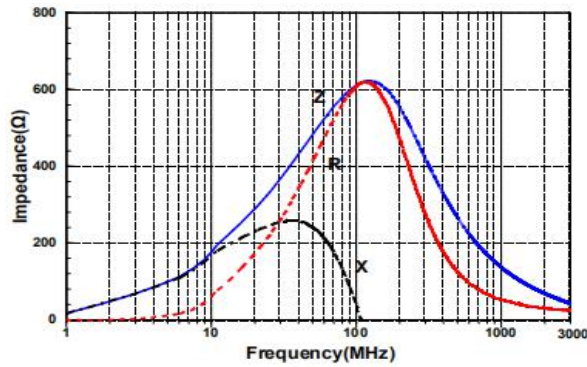
**PFPB3216P221T2R0**



**PFPB3216P301T2R0**



**PFPB3216P601T1R5**



**PFPB3216P102TR50**

