

3

AC

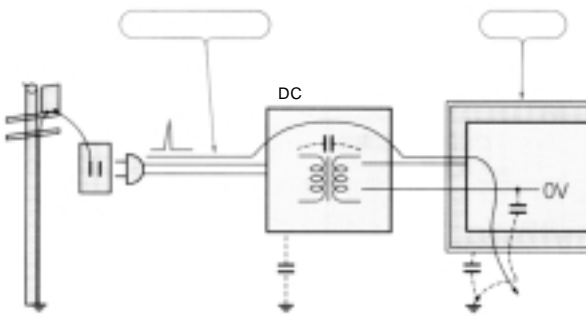
AC

川村 たけよし



AC

1  
가  
가 . 1 AC



1. AC



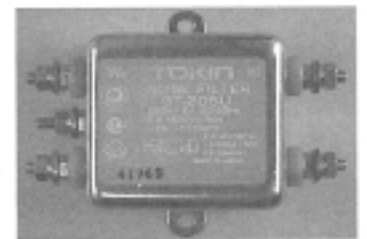
(a) ZHG2203 - 11S [(株)TDK]



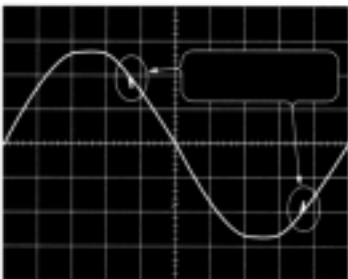
(b) ZCB2203 - M [(株)TDK]



(c) LF - 205A [(株)ト - キン]

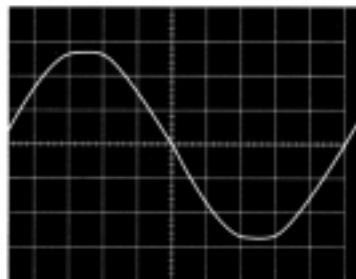


(d) GT - 205U [(株)ト - キン]



(a)

1. AC



(b)

(50 V/div., 2ms/div.)<sup>(2)</sup>

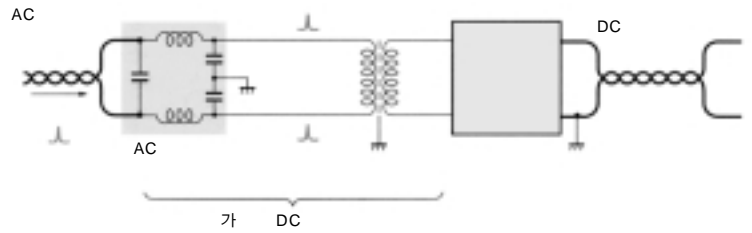
2.

AC 가 ( ) 가 AC (傳) 가 AC ( ) 가

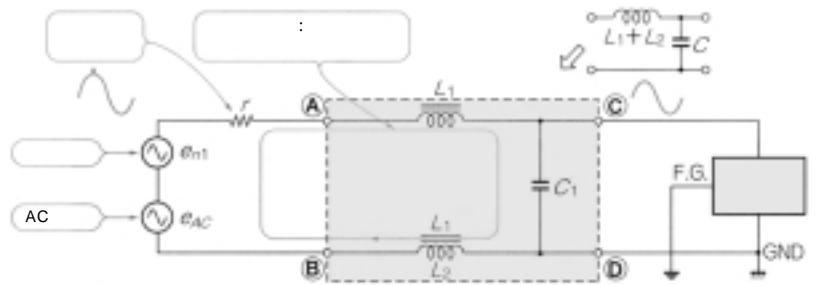
AC 가 k MHz ( 2 )

가 2

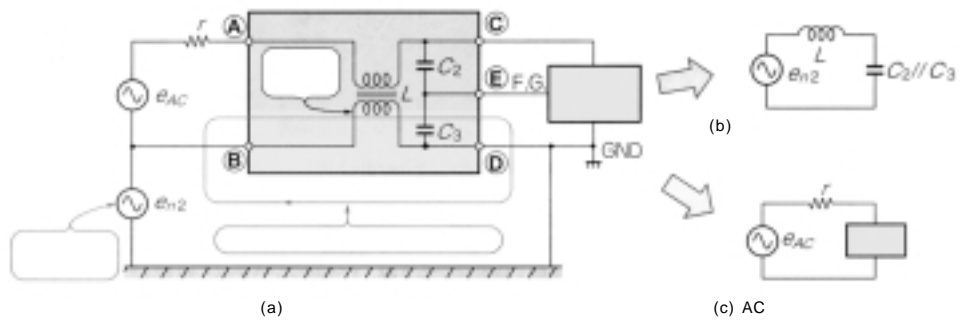
가 3



2. AC



3.



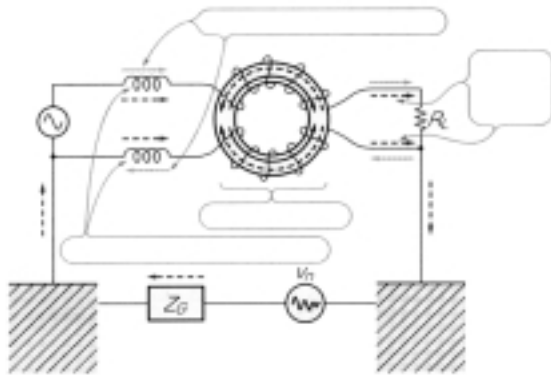
4.

AC

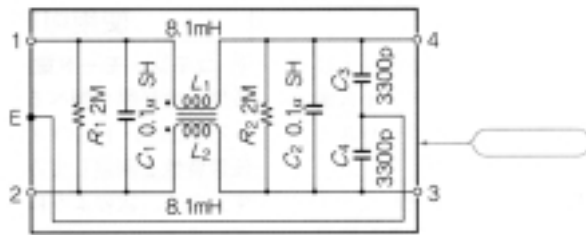
$e_{n1}$

AC

4(a)



5.



ZHG2203 - 11S [(株)TDK]  
(a)

	250	$V_{AC}$
	3	A
( - )	1500	$V_{AC}$
(500V <sub>DC</sub> , 1 )	100	M
(250V, 60Hz)	0.75	mA
	250	m
	40dB	0.4 10
	30dB	0.2 20
	20dB	1
	20dB	2
	150	g

(b)

LC

- 40dB/dec.

4(b)

1

$C_2$   $C_3$

LC

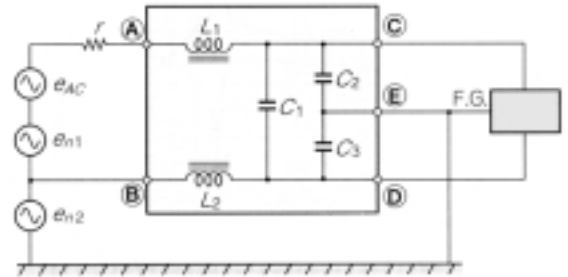
4(c)

AC

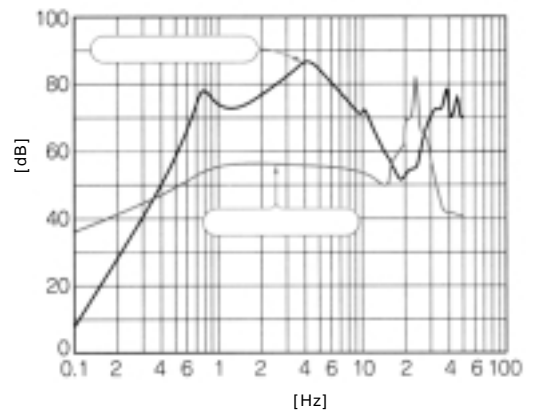
GND

$e_{n2}$

AC

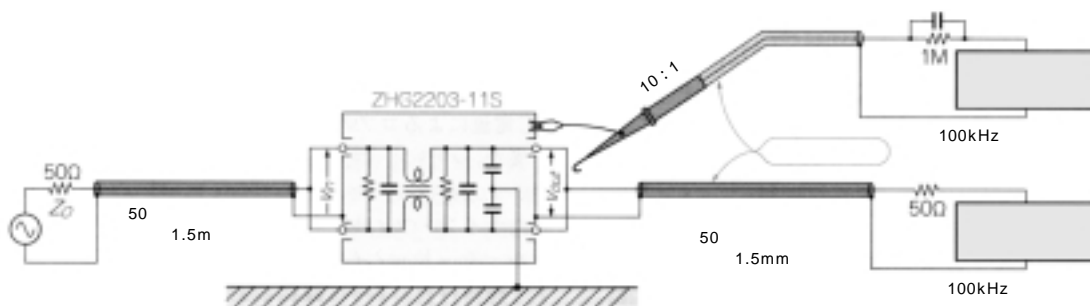


6. /

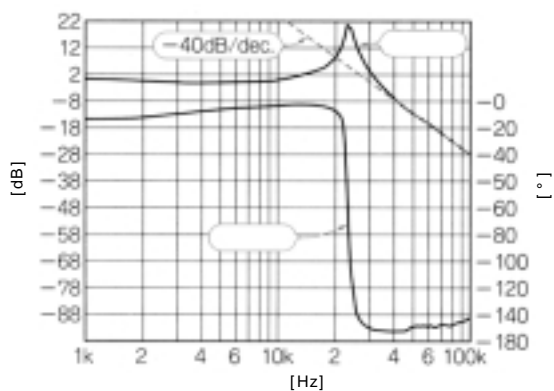


(c)

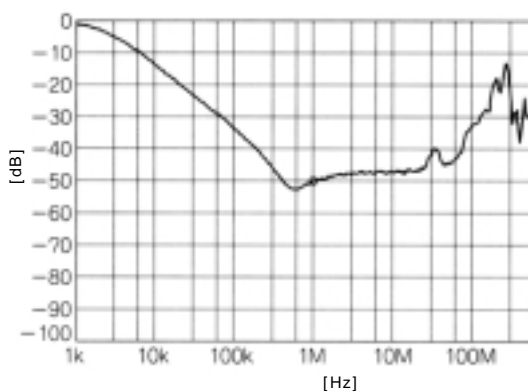
7. ZHG2203 - 11S



8.



9. (1 k 100 kHz)



10. (1 k 500 MHz)

5                    L  
 ,  
 2                    ,  
                     가  
                     AC                    AC  
                     .  
                     .  
                     .  
 6                    . L<sub>1</sub> L<sub>2</sub>  
                     .  
                     e<sub>n1</sub> L<sub>1</sub>+L<sub>2</sub> C<sub>1</sub>  
                     ,  
                     e<sub>n2</sub> L<sub>1</sub>//L<sub>2</sub> C<sub>2</sub>//C<sub>3</sub>  
                     ,  
                     가

가                    LC  
                     .  
                     /  
                     ZHG2203 - 11S                    ,  
                     .  
                     R<sub>1</sub>                    ,  
                     가                    가                    C<sub>1</sub>  
                     .  
                     .  
                     .  
                     C<sub>3</sub>  
                     C<sub>4</sub>  
                     .  
                     .                    C<sub>1</sub> C<sub>2</sub>                    가  
                     가

가

( $Z_{in} = 50 \Omega$ )

가 (1k ~ 500MHz) 1

ZHG2203 - 11S

50

(-40dB/dec.)

, -20dB/dec.

8

2

가

· 1k ~ 100kHz...10 : 1

100kHz

9

FRA(Frequency Response Analyser)

22kHz

( $Z_{in} = 1M \Omega$ )

가

· 100k ~ 500MHz...

7

A ZHG2203 - 11S LC

B 100kHz

1MHz -80dB/dec.

LC 가 2

7

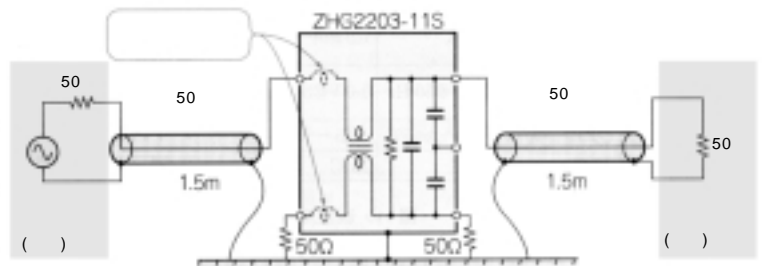
L 가

가

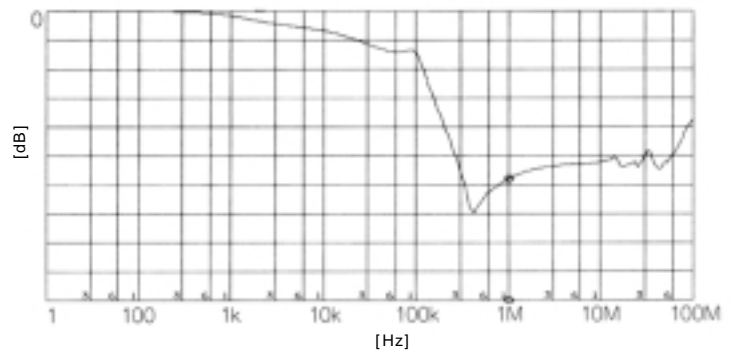
$C_2 = 0.1 \mu F$

$C_3 = C_4 = 6600 pF$  10

A.



B.



1.

	ZCB2203 - M	LF205A	GT - 205U
	250 V <sub>AC</sub>	250 V <sub>AC</sub>	250 V <sub>AC</sub>
	3 A	5 A	5 A
( - )	1500 V <sub>AC</sub>	1500 V <sub>AC</sub>	1500 V <sub>AC</sub>
( - )	100 M	300 M	300 M
(250V/60Hz)	0.75 mA	1 mA	0.5 mA
	500 m	1.5V@50Hz	1.0V@50Hz
	- 25 +85	- 25 +55	- 25 +55
	30	30	35

$$f_0 = \frac{1}{2\pi\sqrt{LC}} = 21.78 \text{ kHz}$$

, L = 8.1mH, C = 6600pF

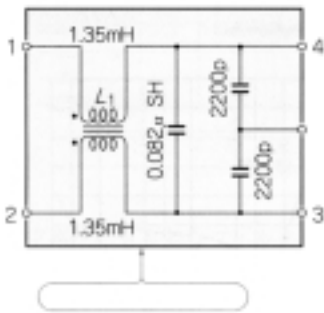
9

, 10kHz

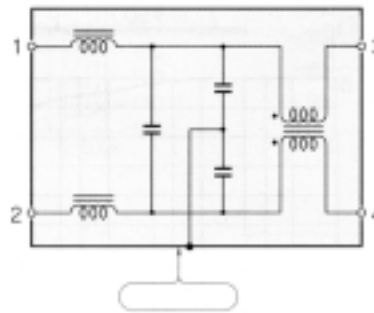
- 40dB/dec.가

ZHG2203 - 11S 10kHz

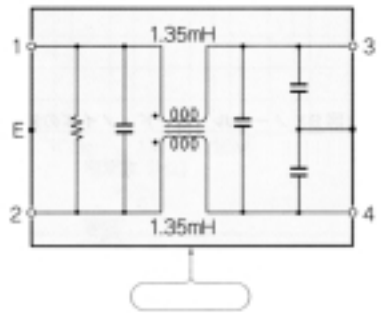
LC



(a) ZCB2203 - M[(株)TDK]



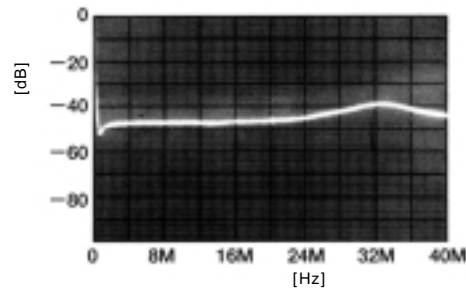
(b) LF - 205A[(株)ト - キン]



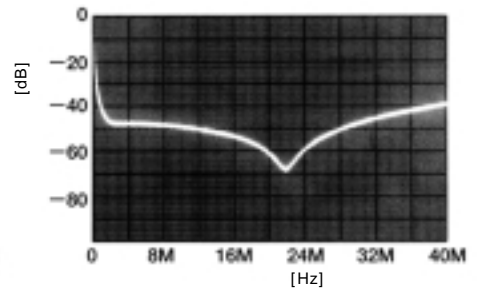
(c) GT - 205U[(株)ト - キン]

11.

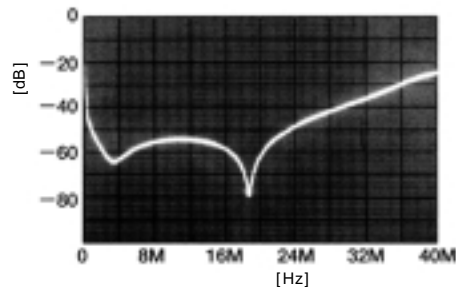
가



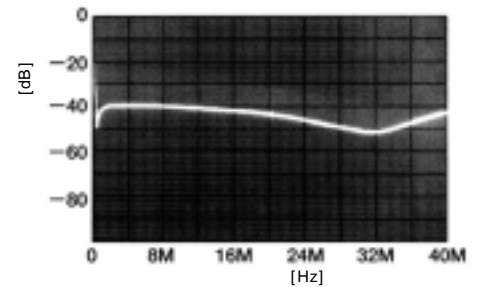
(a) ZHG2203 - 11S[(株)TDK]



(b) ZCB2203 - M[(株)TDK]



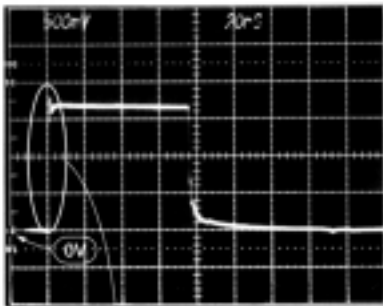
(c) LF - 205A[(株)ト - キン]



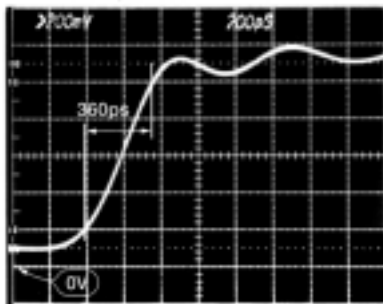
(d) GT - 205U[(株)ト - キン]

3.

100kHz 500MHz  
 50 10  
 - 20dB/dec.  
 600kHz 10 50M 500MHz  
 + 40dB/dec.  
 - 40dB/dec.가  
 6600pF 100kHz 가  
 240  $L_1 // L_2$  50  
 LR 가  
 \*  
 ZHG2203 - 11S  
 10kHz - 40dB/dec. 가  
 10MHz 7(c)  
 가  
 가 ESD(  
 0.  
 $C_3$   $C_4$  가 ESL 가 7ns

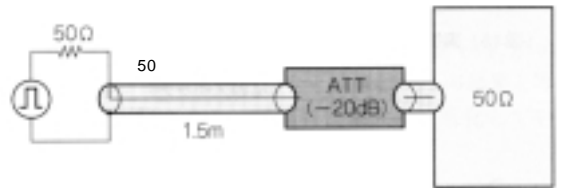


(a) (5V/div., 200ns/div.)

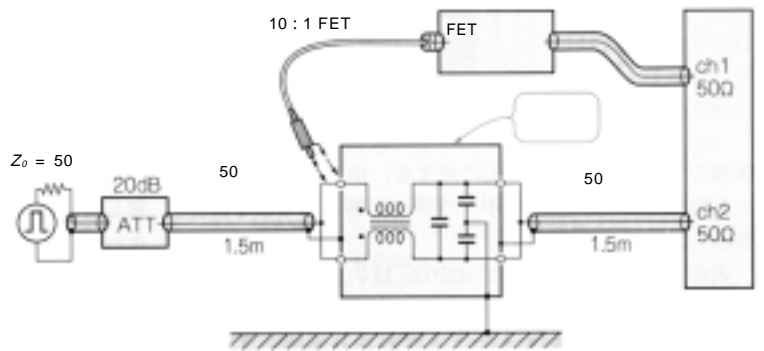


(b) (2V/div., 200ns/div.)

4.

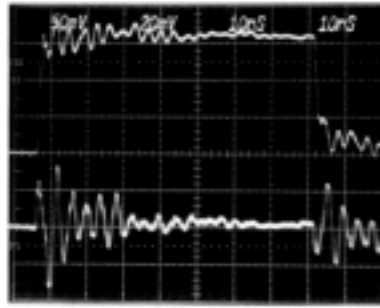


12.

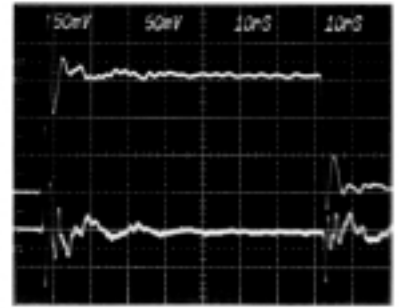


13.

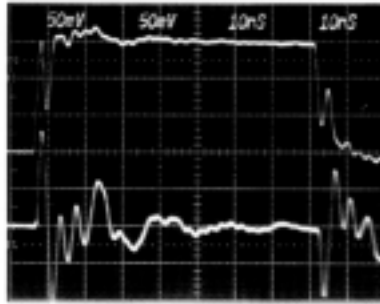
5.



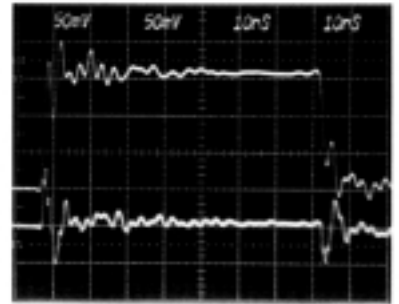
(a) ZHG2203 - 11S( : 0.5V/div., : 0.2V/div., 10ns/div.)



(b) ZCB2203 - M( : 0.5V/div., : 0.5V/div., 10ns/div.)



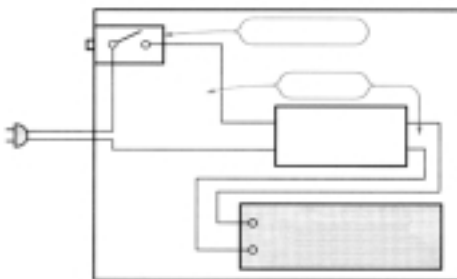
(c) LF - 205A( : 0.5V/div., : 0.5V/div., 10ns/div.)



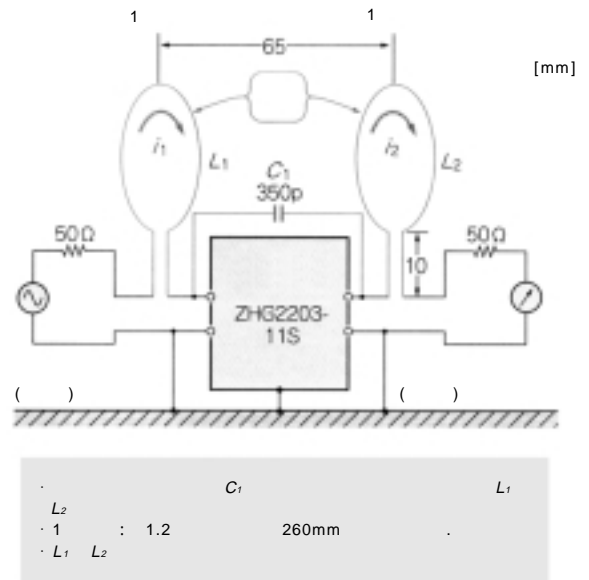
(d) GT - 205U( : 0.5V/div., : 0.5V/div., 10ns/div.)

2.

	$V_{in}$ [V]	$V_{out}$ [V]	[dB] $G = 20\log \frac{V_{out}}{V_{in}}$
ZHG2203 - 11S ( )	1.6	0.032	- 34
ZCB2203 - M	1.6	0.135	- 21.5
LF - 205A	1.6	0.125	- 22.1
GT - 205U	1.6	0.075	- 26.6



15. AC



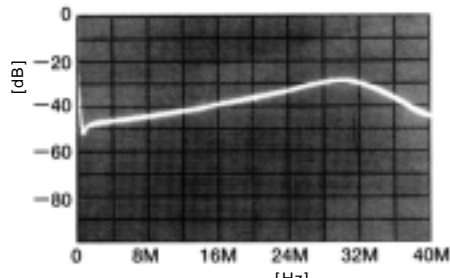
14.

500MHz  
8k 15kV

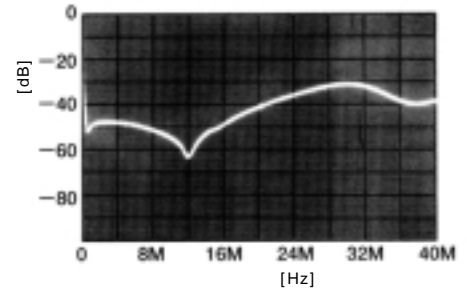
가



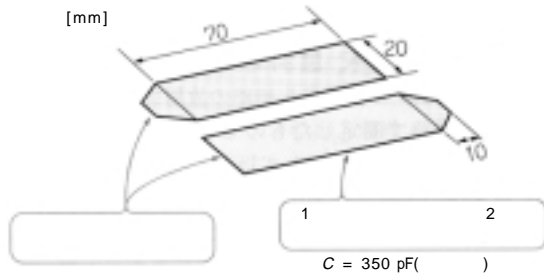
6.



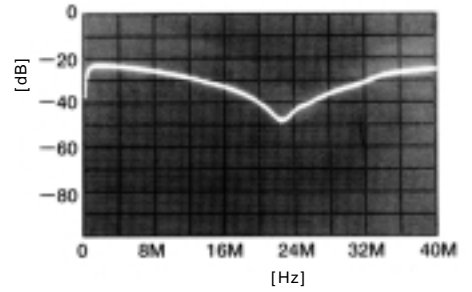
(a)  $L_1$   $L_2$  가



(b)  $L_1$   $L_2$  가



16.



7.



2 가

ZHG2203 - 11S

3가

- ZCB2203 - M
- LF - 205A
- GT - 205U

1 가 , 11

40MHz,

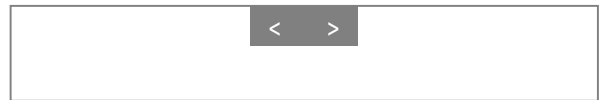
50

3 가  
9 10

2가 가

가

가 , ,  
가 .  
가 .  
가 .



1

4가

4 가  
12

13

5

가 2 가 AC 15 가  
 ZCB2203 - M 가  
 0.135V 가  
 ZHG2203 - 11S 가



가

16 ( )  
 가

7 가 14 3

(a)

14 8  
 가  
 ZHG2203 - 11S 6  
 6(a)  $L_1$   $L_2$   
 6(b)

3(a)

가 가 6(b)

