规格书编号

SPEC NO :

产品规格书
SPECIFICATION

CUSTOMER 客 户：

PRODUCT 产 品：**SAW FILTER**

MODEL NO 型 号：**HDQSF45A7Dc SIP5Dc**

PREPARED 编 制： CHECKED 审 核：

APPROVED 批 准： D A T E 日 期：2008-3-6

客户确认 CUSTOMER RECEIVED:		
审核 CHECKED	批准 APPROVED	日期 DATE

无锡市好达电子有限公司
Shoulder Electronics Limited

更改历史记录
History Record

更改日期 Date	规格书编号 Spec. No.	产品型号 Part No.	客户产品型号 Customer No.	更改内容描述 Modify Content	备注 Remark

1.SCOPE

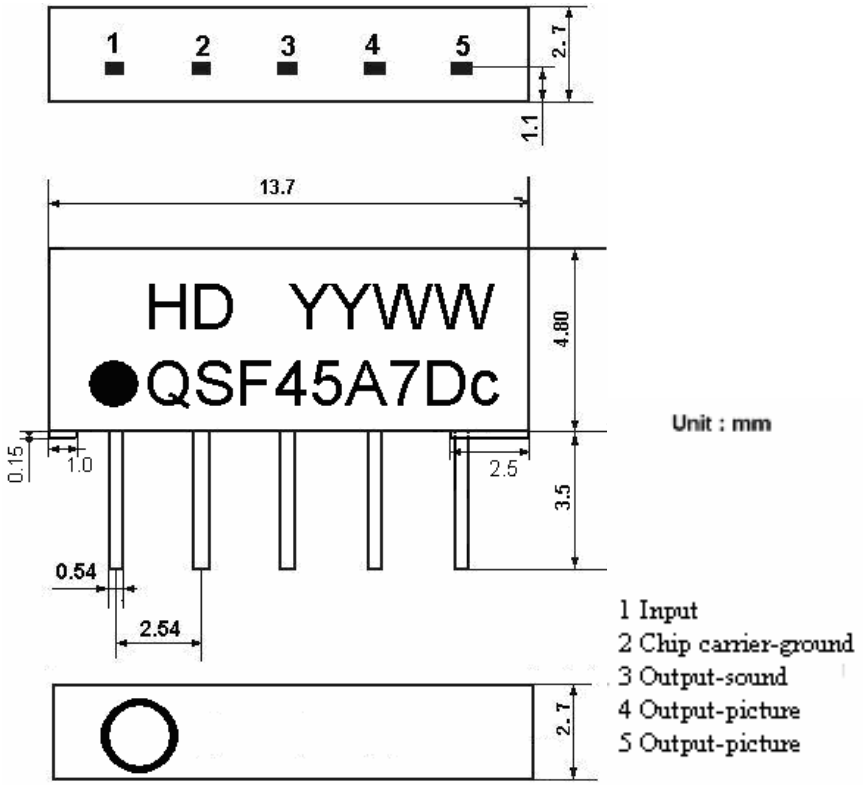
SHOULDER's SAW filter series have broad line up products meeting all broadcast standard including NTSC,PAL and SECAM systems. These filters are composed of two interdigital transducers on a single-crystal. piezoelectrical chip. they are used in electronic equipments such as TV and so on.

2.Construction

2.1 Dimension and materials

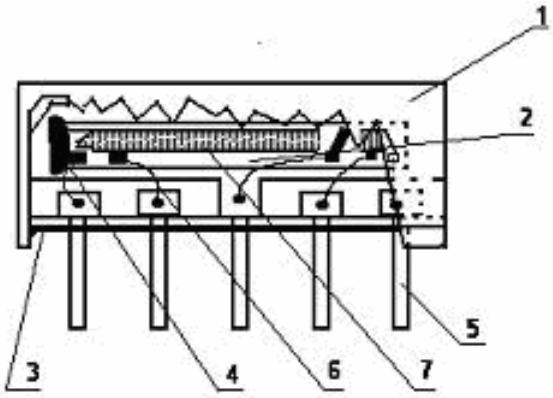
Manufacturer's name : SHOULDER ELECTRONICS Co. LTD(CHINA)

Type : QSF45A7Dc



YY:year

WW:week



Components	Materials
1.Outer casing	PPS
2.Substrate	Lithium niobate
3.Base	Epoxy resin
4.Absorber	Epoxy resin
5.Lead	Cu alloy+Au plate
6.Bonding wire	AlSi alloy
7.Electrode	Al

3.Characteristics

Items	Conditions	Specifications
Standard atmospheric conditions	Unless otherwise specified , the standard rang of atmospheric conditions for making measurements and tests is as follows; Ambient temperature : 15℃ to 35℃ Relative humidity : 25% to 85% Air pressure : 86kPa to 106kPa	There shall be no damage.
Operating temperature rang	Operating temperature rang is the rang of ambient temperatures in which the filter can be operated continuously. -10℃ ~ +60℃	
Storage temperature rang	Storage temperature rang is the rang of ambient temperatures at which the filter can be stored without damage. Conditions are as specified elsewhere in these specifications. -40℃ ~ +70℃	
Reference temperature	+25℃	

3.1 Maximum Rating

DC voltage	**VDC**	**12**	**V**	**Between any terminals**
AC voltage	**Vpp**	**10**	**V**	**Between any terminals**

3.2 Electrical Characteristics

Characteristics of picture channel

Source impedance Zs=50Ω

Load impedance Z_L=2kΩ//3pF T_A=25℃

Item		Freq	min	typ	max	
Insertion attenuation Reference level		44.06MHz	12.8	14.3	15.8	dB
Relative attenuation		45.81MHz	5.1	6.1	7.1	dB
		42.23MHz	-0.7	0.3	1.3	dB
		41.31MHz	24.0	36.0	-	dB
		39.81MHz	45.0	59.0	-	dB
		47.31MHz	42.0	50.0	-	dB
Sidelobe	35.06~39.81MHz		40.0	46.0		dB
	47.31~55.06MHz		35.0	41.0		dB

Reflected wave signal suppression 1.3 us … 6.0 us after main pulse (test pulse 250 ns , carrier frequency 44.06 MHz)	42.0	52.0		dB
Feedthrough signal suppression 1.3 us … 1.2 us before main pulse (test pulse 250 ns , carrier frequency 44.06 MHz)		56.0		dB
Group delay predistortion (reference frequency 45.81 MHz) 43.26MHz 42.23MHz		-40 0		ns ns
Temperature coefficient	-72			ppm/k

Characteristics of sound channel

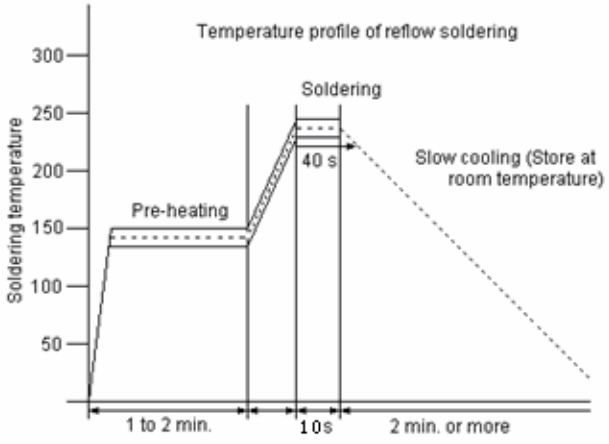
Source impedance Zs=50Ω

Load impedance Z_L=2kΩ//3pF T_A=25℃

		Freq	min	typ	max	
Insertion attenuation Reference level		41.31MHz	9.9	11.4	12.9	dB
Relative attenuation		42.23MHz	23.0	32.0	-	dB
		45.81MHz	38.0	45.0	-	dB
		39.81MHz	35.0	41.0	-	dB
		47.31MHz	40.0	43.0	-	dB
Sidelobe	35.06~39.81MHz		35.0	40.0		dB
	47.31~55.06MHz		34.0	39.0		dB
Temperature coefficient			-72			ppm/K

3.3 Environmental Performance Characteristics

Item	Condition	Specifications
High temperature	The specimen shall be store at a temperature of 80±2℃ for 96±4h. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	Mechanical characteristics and specifications in electrical characteristics shall be satisfied. There shall be no excessive change in
Low temperature	The specimen shall be store at a temperature of -20±3℃ for 96±4h. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	
Humidity	The specimen shall be store at a temperature of 40±2℃ with relative humidity of 90% to 96% for 96±4h. Then it shall be subjected to standard atmospheric conditions for 1h, after which	

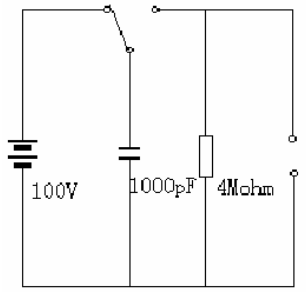
<table>
<tr><td></td><td>measurement shall be made within 1h.</td><td>appearance.</td></tr>
<tr><td>Thermal shock</td><td>The specimen shall be subjected to 8 continuous cycles each as shown below. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.
<table>
<tr><td></td><td>Temperature</td><td>Duration</td></tr>
<tr><td>1</td><td>+25 ℃=>−40 ℃</td><td>0.5h</td></tr>
<tr><td>2</td><td>-40 ℃</td><td>4h</td></tr>
<tr><td>3</td><td>-40 ℃=>+85 ℃</td><td>2h</td></tr>
<tr><td>4</td><td>+85 ℃</td><td>4h</td></tr>
<tr><td>5</td><td>+85 ℃=>+25 ℃</td><td>0.5h</td></tr>
<tr><td>6</td><td>+25 ℃</td><td>1h</td></tr>
</table></td><td></td></tr>
<tr><td>Resistance to Soldering heat</td><td>Reflow soldering method
Peak: 255 ±5 ℃, 220 ±5 ℃, 40s
At electrode temperature of the specimen.


The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time.
The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.</td><td></td></tr>
<tr><td>Solder ability</td><td>Immerse the pins melt solder at 260℃+5/-0℃ for 5 sec.</td><td>More then 95% of total area of the pins should be covered with solder</td></tr>
</table>

3.4 Mechanical Test

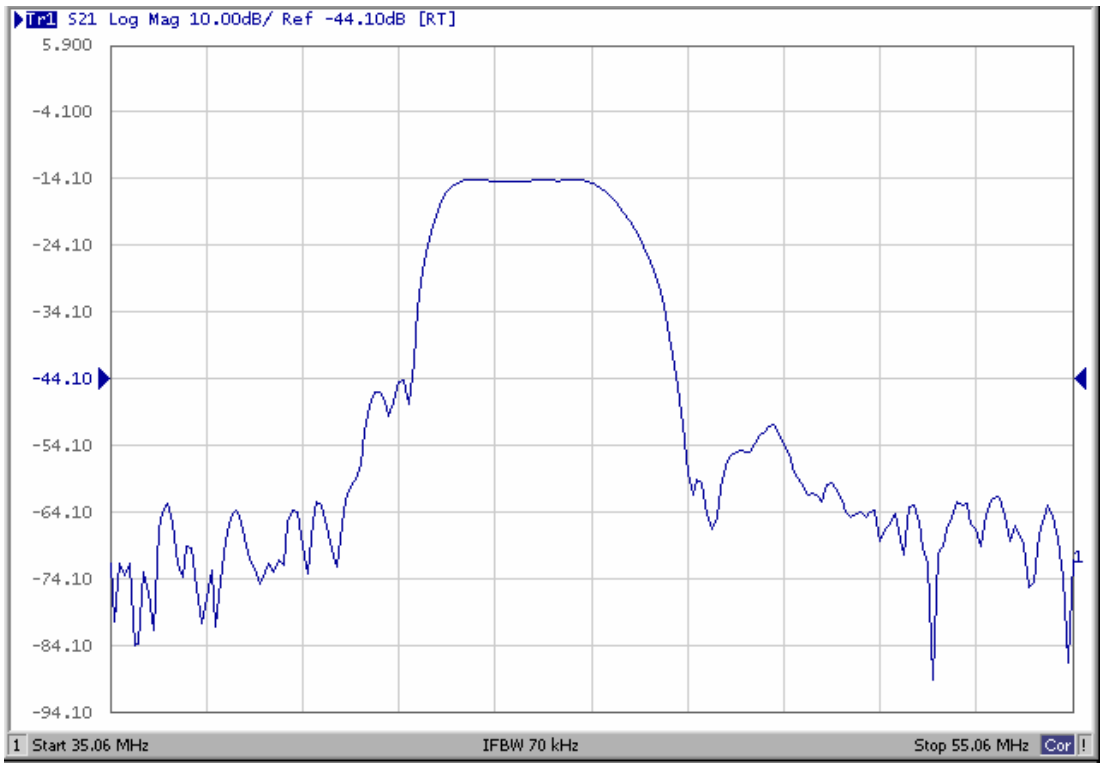
Items	Conditions	Specifications
Vibration	600-3300rpm amplitude 1.5mm 3 directions 2 H each	There shall be no damage.
Drop	On maple plate from 1 m high 3 times	
Lead pull	Pull with 1 kg force for 30 seconds	
Lead bend	90^{o} bending with 500g weigh 2 times	

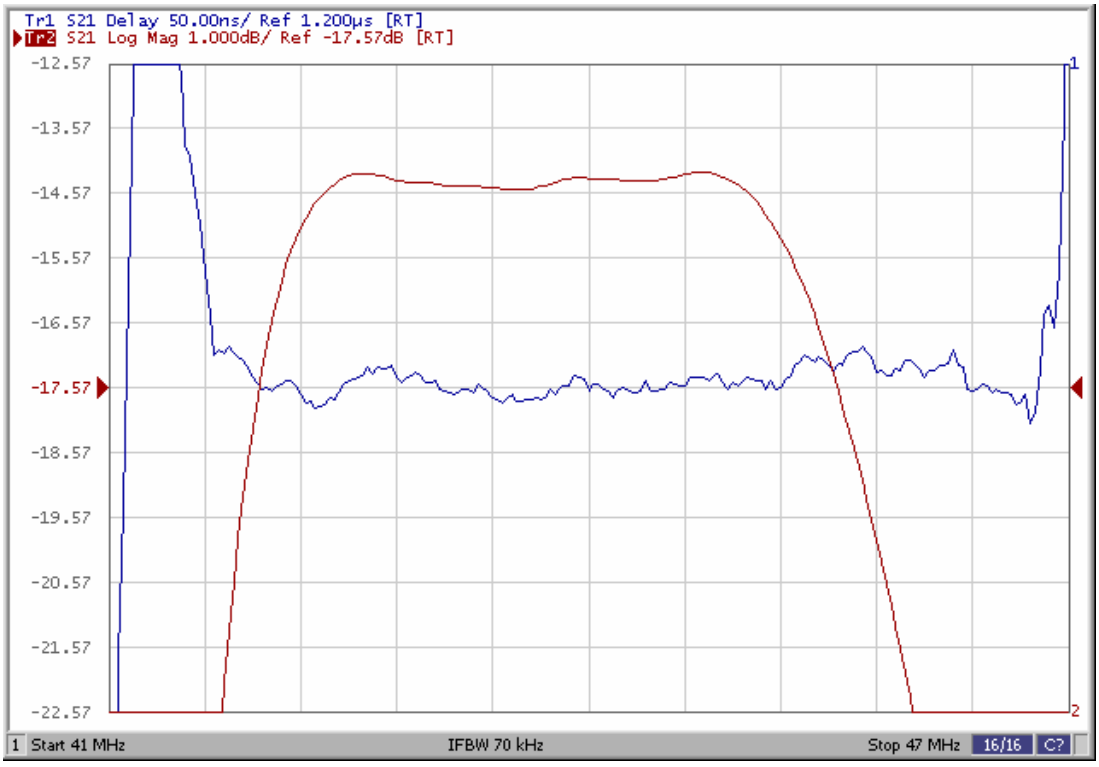
3.5 Voltage Discharge Test

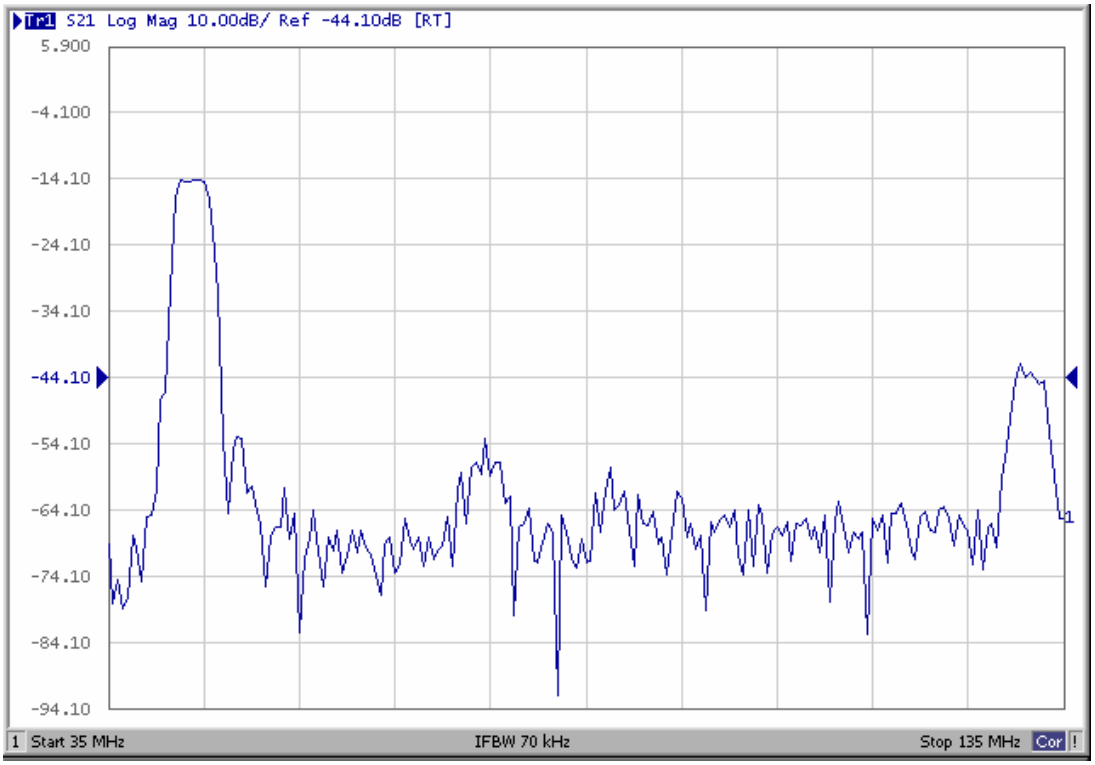
Item	Condition	Specifications
Surge	Between any two electrode 	There shall be no damage

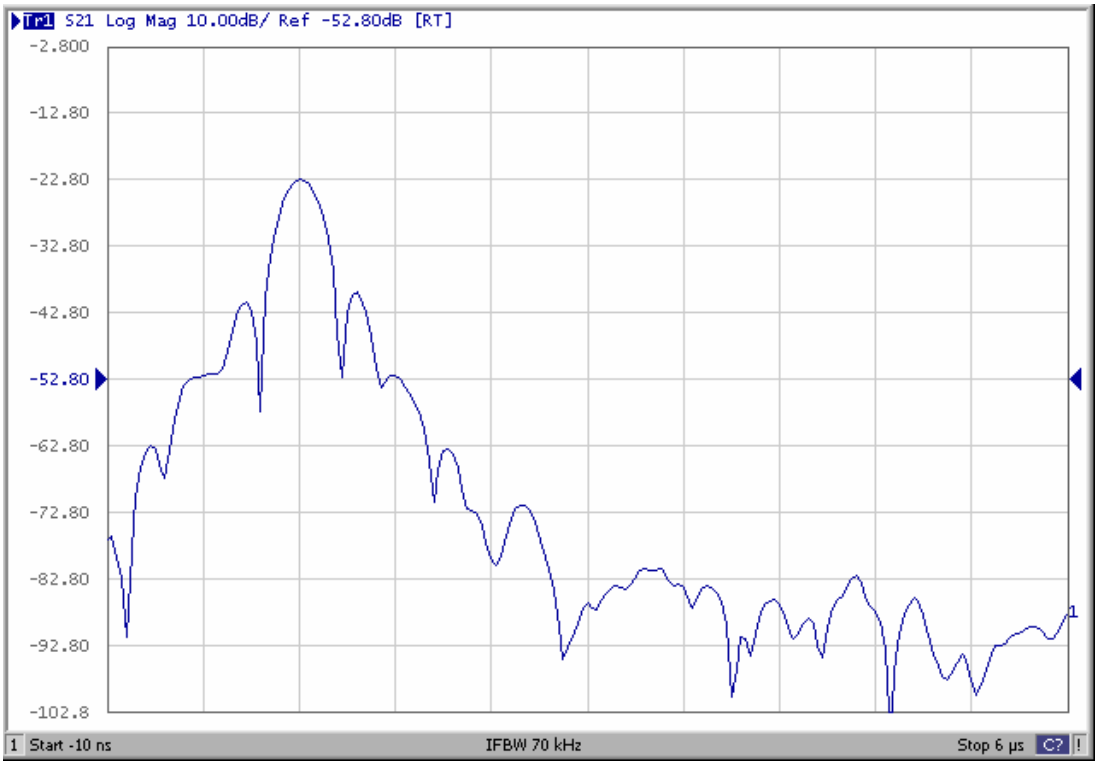
3.6 Frequency response

Frequency response of picture channel

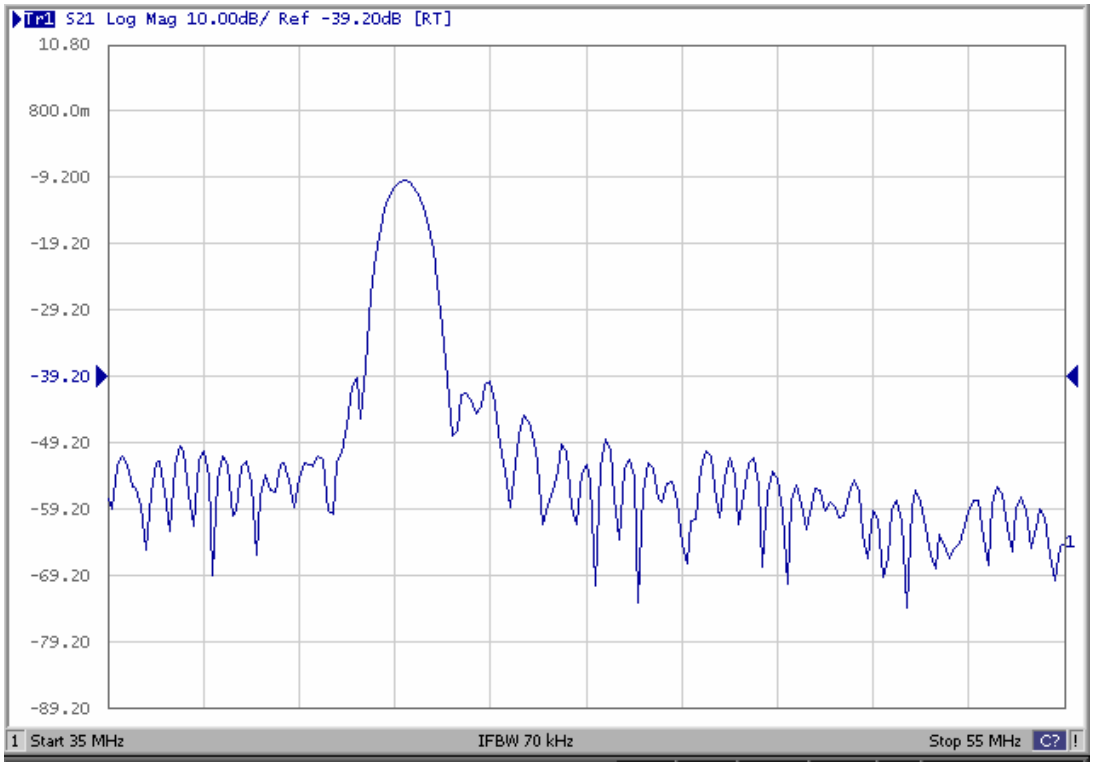


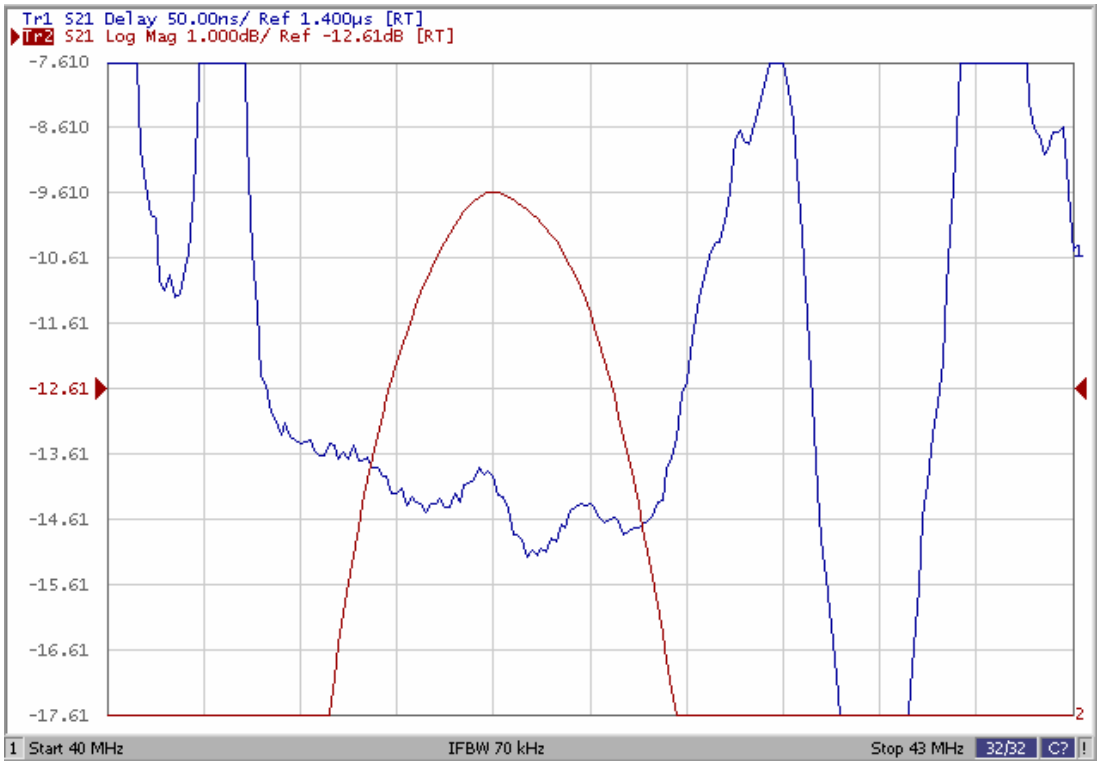


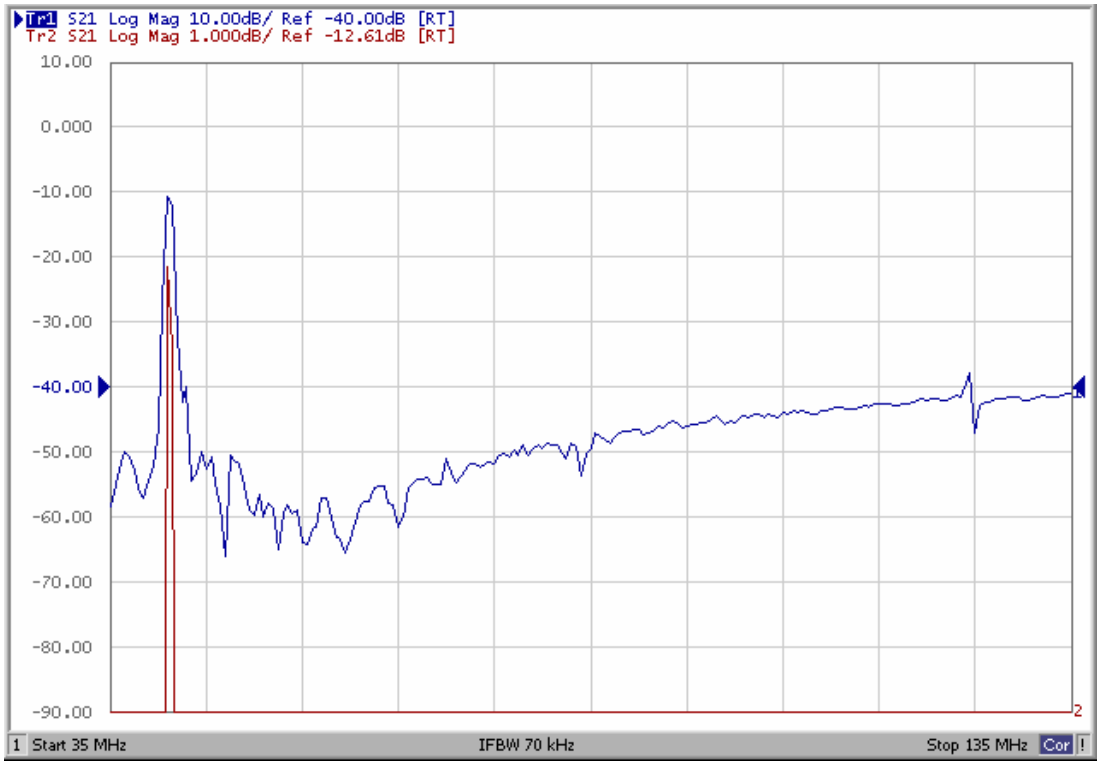

Tr1 S21 Log Mag 10.00dB/ Ref -44.10dB [RT]
5.900
-4.100
-14.10
-24.10
-34.10
-44.10
-54.10
-64.10
-74.10
-84.10
-94.10
1 Start 35 MHz
IFBW 70 kHz
Stop 135 MHz
Cor

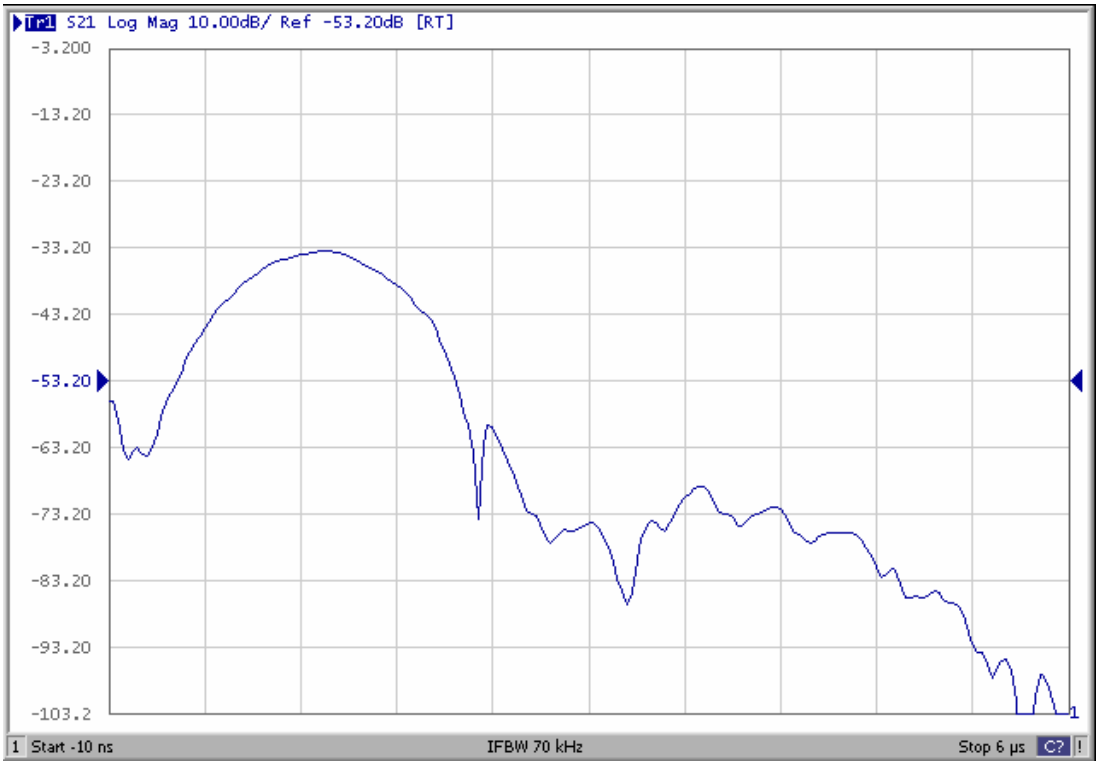

Tr1 S21 Log Mag 10.00dB/ Ref -52.80dB [RT]
-2.800
-12.80
-22.80
-32.80
-42.80
-52.80
-62.80
-72.80
-82.80
-92.80
-102.8
1 Start -10 ns
IFBW 70 kHz
Stop 6 µs
C?

Frequency response of sound channel






Tr1 S21 Log Mag 10.00dB/ Ref -40.00dB [RT]
Tr2 S21 Log Mag 1.000dB/ Ref -12.61dB [RT]
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
1 Start 35 MHz
IFBW 70 kHz
Stop 135 MHz
Cor


Tr1 S21 Log Mag 10.00dB/ Ref -53.20dB [RT]
-3.200
-13.20
-23.20
-33.20
-43.20
-53.20
-63.20
-73.20
-83.20
-93.20
-103.2
1 Start -10 ns
IFBW 70 kHz
Stop 6 µs
C?