

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: \_\_\_\_\_ HDBF44A12F 1.8mm \_\_\_\_\_  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ D A T E 日期: \_\_\_\_\_ 2012-8-2 \_\_\_\_\_

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

无锡市好达电子股份有限公司  
Shoulder Electronics Limited



**1. SCOPE**

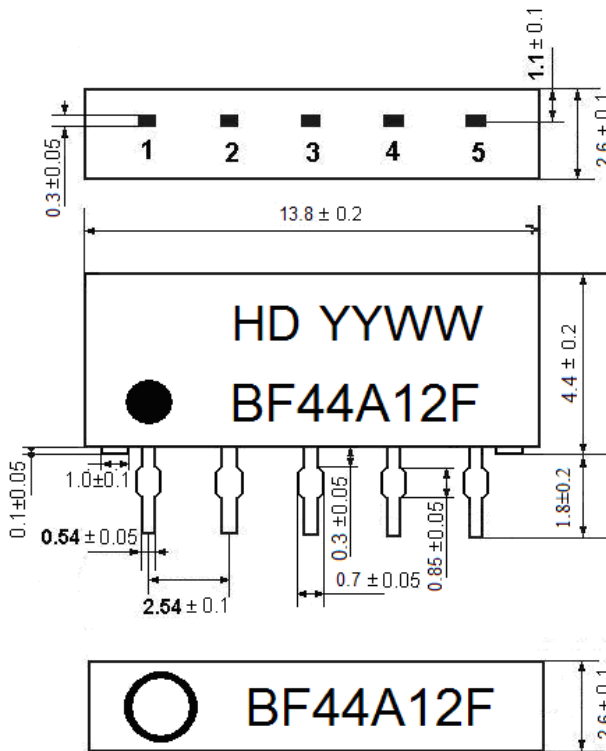
SHOULDER’s SAW filter series have broad line up products meeting all broadcast standard including NTSC, PAL and SECAM systems. These filters are composed of two interdigital transducers on a single-crystal. piezoelectrical chip. They are used in electronic equipments such as TV and so on.

**2. Construction**

**2.1 Dimension and materials**

Manufacturer’s name: SHOULDERELECTRONICS LTD

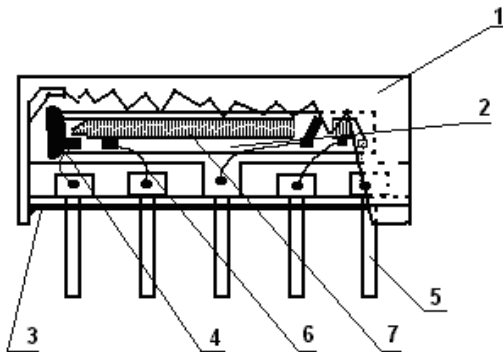
Type: BF44A12F



Unit : mm

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+ Ni plate+ Sn enameled
6.Bonding wire	AlSi alloy
7.Electrode	Al



**3.1 Maximum Rating**

<b>DC voltage</b>	<b>VDC</b>	<b>12</b>	<b>V</b>	<b>Between any terminals</b>
<b>AC voltage</b>	<b>Vpp</b>	<b>10</b>	<b>V</b>	<b>Between any terminals</b>

**3.2 Electrical Characteristics**

Source impedance

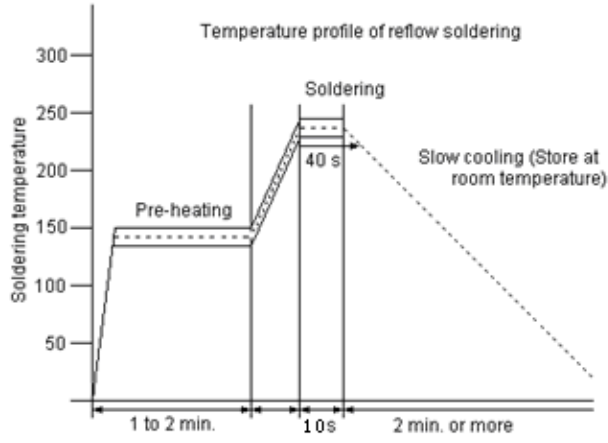
 $Z_s = 50\Omega$ 

Load impedance

 $Z_L = 2k\Omega // 3pF$ 
 $T_A = 25^\circ C$ 

Center frequency	Fo	-	44.00	-	MHz
Insertion attenuation Reference level	44.06MHz	14.0	15.5	17.0	dB
Pass bandwidth	B3dB	-	5.5	-	MHz
Relative attenuation	39.81MHz	30.0	42.0	-	dB
	41.06MHz	-	9.5	-	dB
	41.37MHz	1.3	2.3	3.3	dB
	46.75MHz	1.4	2.4	3.4	dB
	47.06MHz	-	9.5	-	dB
	47.31MHz	17.0	23.0	-	dB
Sidelobe	35.06~37.06MHz	35.0	42.0	-	dB
	37.06~39.41MHz	30.0	42.0	-	dB
	47.71~50.06MHz	24.0	30.0	-	dB
	50.06~55.06MHz	32.0	40.0	-	dB
Amplitude ripple(41.66~46.46MHz)-		-	0.8	-	dB
Group delay ripple(41.37~46.75MHz)		-	60.0	-	ns
Reflected wave signal suppression 1.2 us ... 6.0 us after main pulse (test pulse 250 ns, carrier frequency 44.06 MHz)		-	50.0	-	dB
Temperature coefficient of frequency		-	-72	-	ppm/k

**3.3 Environmental Performance Characteristics**

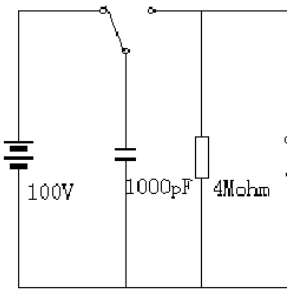
Item	Condition	Specifications																					
High temperature	The specimen shall be store at a temperature of $80 \pm 2^\circ\text{C}$ for $96 \pm 4\text{h}$ . Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	Mechanical characteristics and specifications in electrical characteristics shall be satisfied. There shall be no excessive change in appearance.																					
Low temperature	The specimen shall be store at a temperature of $-20 \pm 3^\circ\text{C}$ for $96 \pm 4\text{h}$ . 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 $40 \pm 2^\circ\text{C}$ with relative humidity of 90% to 96% for $96 \pm 4\text{h}$ . Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.																						
Thermal shock	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 border="1"> <thead> <tr> <th></th> <th>Temperature</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>+25^\circ\text{C} \Rightarrow -40^\circ\text{C}</math></td> <td>0.5h</td> </tr> <tr> <td>2</td> <td><math>-40^\circ\text{C}</math></td> <td>4h</td> </tr> <tr> <td>3</td> <td><math>-40^\circ\text{C} \Rightarrow +85^\circ\text{C}</math></td> <td>2h</td> </tr> <tr> <td>4</td> <td><math>+85^\circ\text{C}</math></td> <td>4h</td> </tr> <tr> <td>5</td> <td><math>+85^\circ\text{C} \Rightarrow +25^\circ\text{C}</math></td> <td>0.5h</td> </tr> <tr> <td>6</td> <td><math>+25^\circ\text{C}</math></td> <td>1h</td> </tr> </tbody> </table>			Temperature	Duration	1	$+25^\circ\text{C} \Rightarrow -40^\circ\text{C}$	0.5h	2	$-40^\circ\text{C}$	4h	3	$-40^\circ\text{C} \Rightarrow +85^\circ\text{C}$	2h	4	$+85^\circ\text{C}$	4h	5	$+85^\circ\text{C} \Rightarrow +25^\circ\text{C}$	0.5h	6	$+25^\circ\text{C}$	1h
	Temperature		Duration																				
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3	$-40^\circ\text{C} \Rightarrow +85^\circ\text{C}$	2h																					
4	$+85^\circ\text{C}$	4h																					
5	$+85^\circ\text{C} \Rightarrow +25^\circ\text{C}$	0.5h																					
6	$+25^\circ\text{C}$	1h																					
Resistance to Soldering heat	<p>Reflow soldering method                      Peak: <math>255 \pm 5^\circ\text{C}</math>, <math>220 \pm 5^\circ\text{C}</math>, 40s                      At electrode temperature of the specimen.</p>  <p>The graph shows the temperature profile of reflow soldering. The y-axis is 'Soldering temperature' ranging from 0 to 300. The x-axis shows time intervals: '1 to 2 min.' for pre-heating, '10 s' for the start of the soldering phase, and '2 min. or more' for the end of the soldering phase. The profile includes a 'Pre-heating' phase at approximately 140°C, a 'Soldering' phase peaking at 255°C for 40 seconds, and a 'Slow cooling (Store at room temperature)' phase.</p>																						

	<p>The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time.</p> <p>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.</p>	
Solder ability	Immerse the pins melt solder at 260°C+5/-0°C for 5 sec.	More then 95% of total area of the pins should be covered with solder

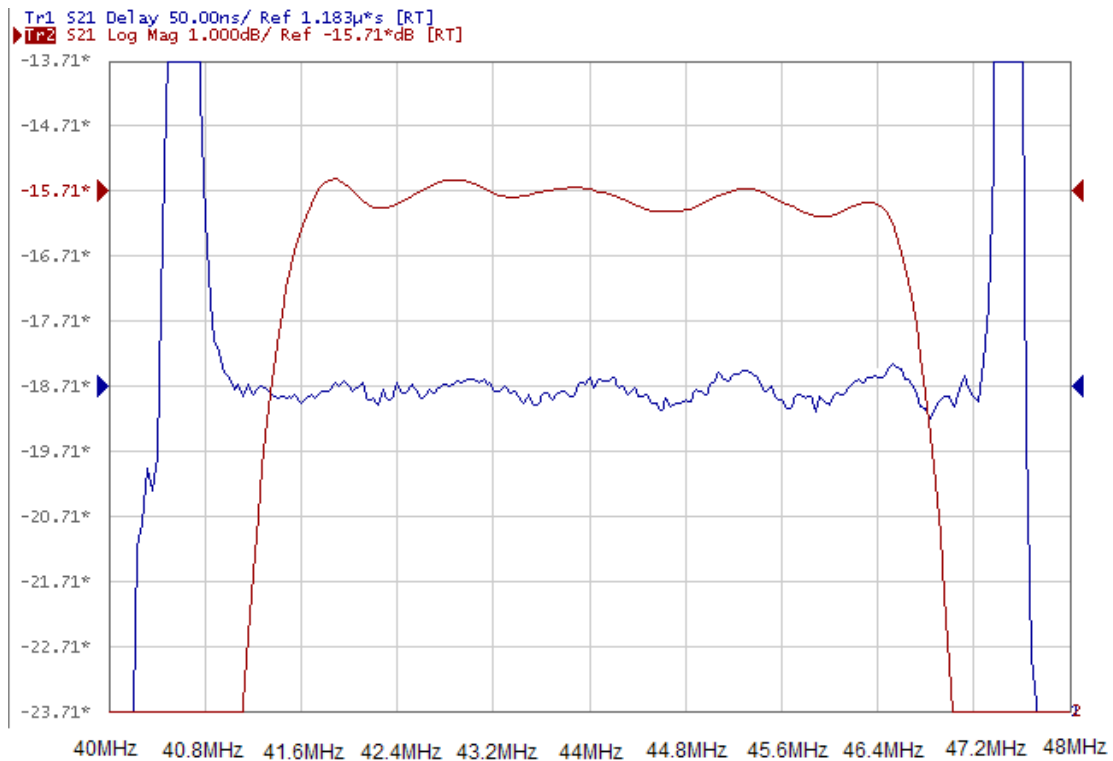
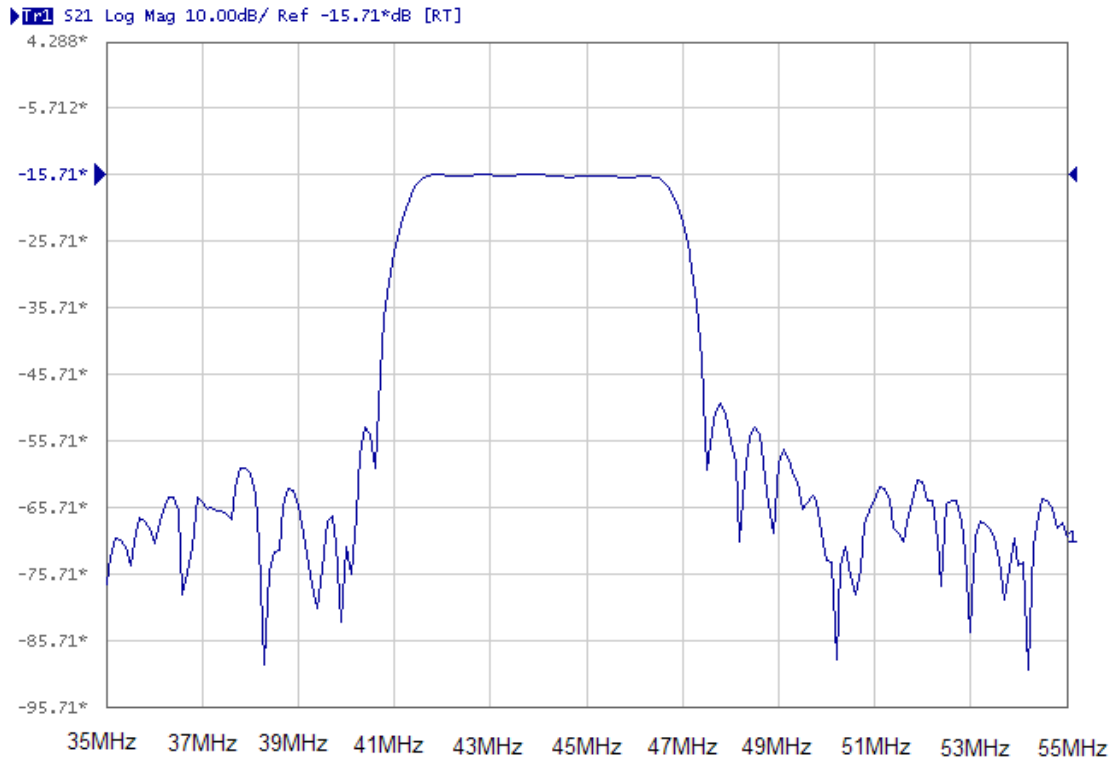
### 3.4 Mechanical Test

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° bending with 500g weigh 2 times	

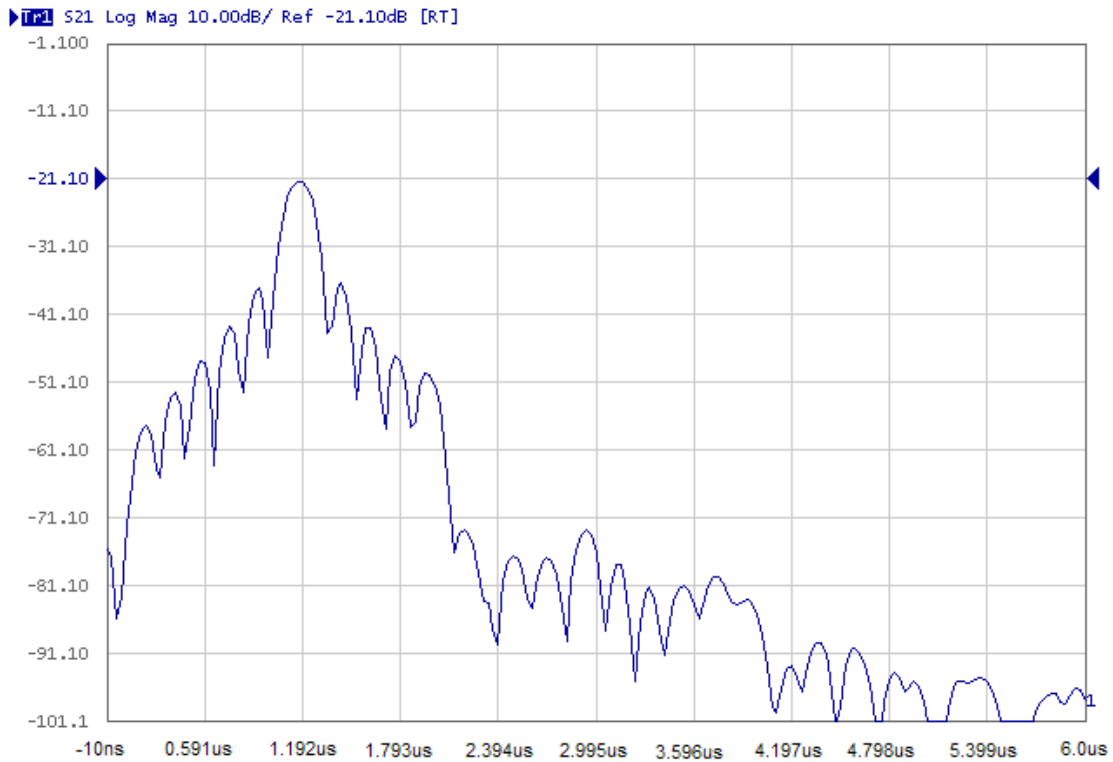
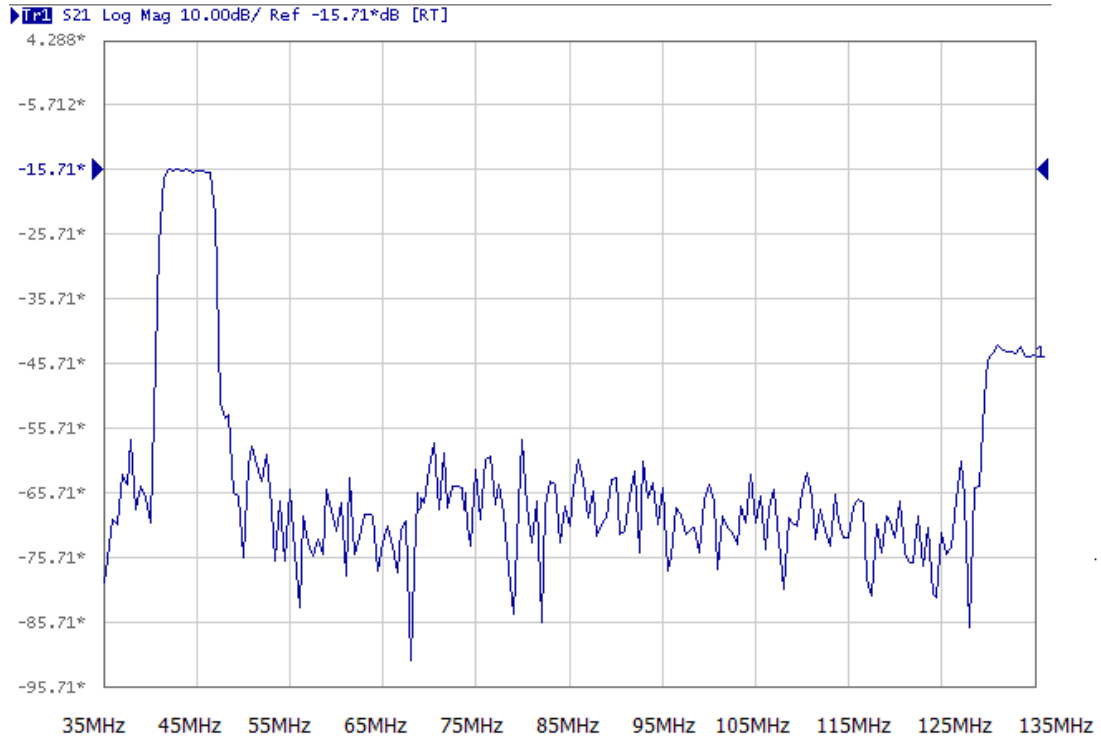
### 3.5 Voltage Discharge Test

Item	Condition	Specifications
Surge	<p>Between any two electrode</p> 	There shall be no damage

### 3.6 Frequency response





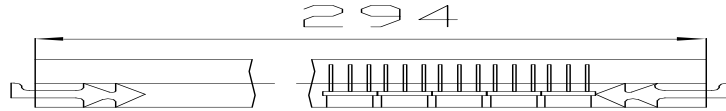


**3.7package**

Unit: mm

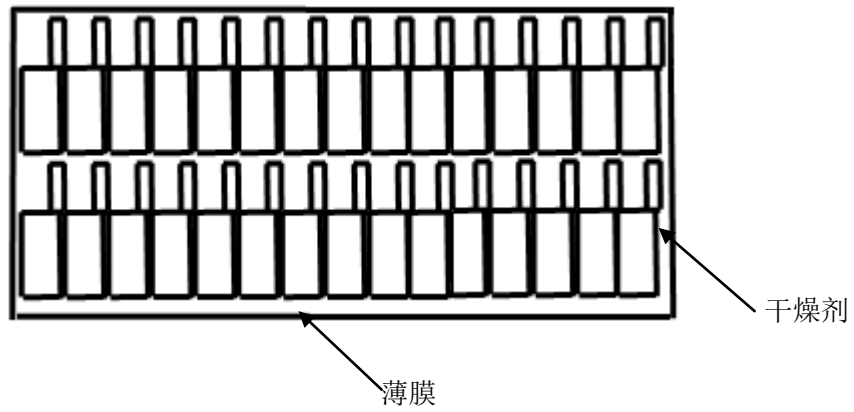
**Pipe**

20PCS /pipe



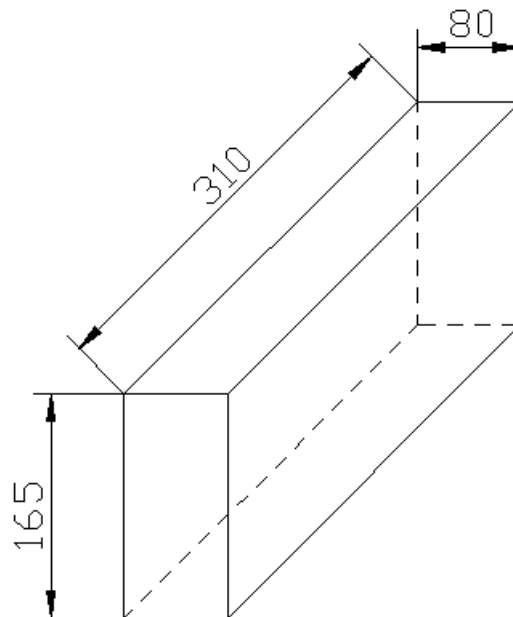
**Pipes**

20×30PCS



**Inside Box**

600×5PCS



### Outside Box

3000×5PCS

