规格书编号

SPEC NO:

产品规格书
SPECIFICATION

CUSTOMER 客 户：LG INNOTEK CO.,LTD

PRODUCT 产 品：SAW FILTER

MODEL NO 型 号：HDBF36A26F 2.3mm HF

PREPARED 编 制：　　CHECKED 审 核：

APPROVED 批 准：　　D A T E 日 期：2012-4-26

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

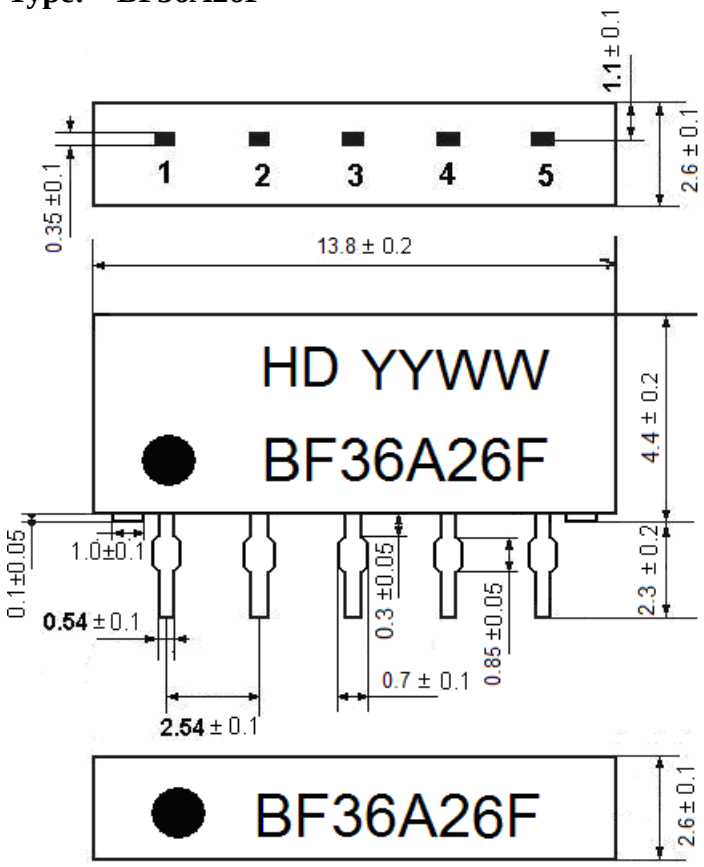
Bandpass filter for digital TV applications

2. Construction

2.1 Dimension and materials

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

Type: BF36A26F



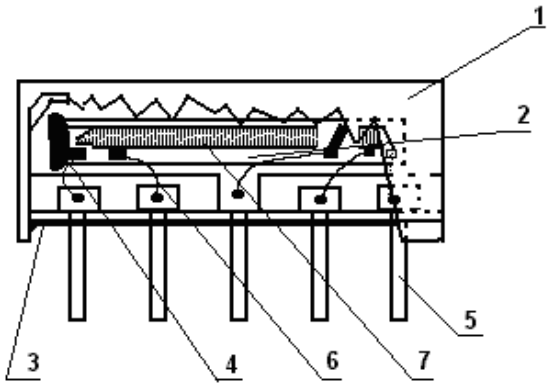
UNIT: mm

PIN configuration

1. Input
2. Input ground
3. Chip-carrier ground
4. Output
5. Output

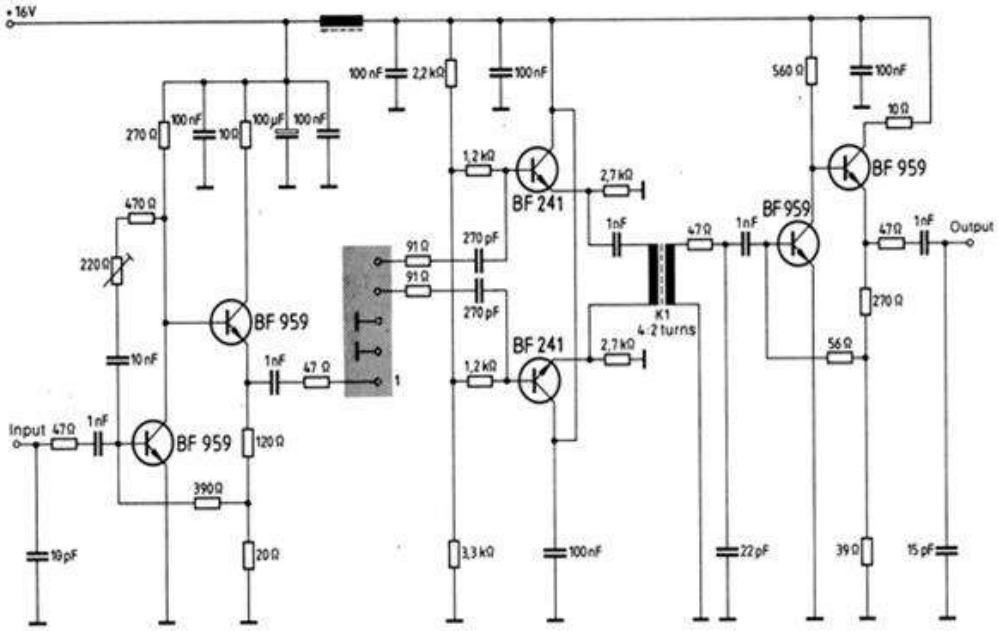
YY: year

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

2.2. Circuit construction, measurement circuit



Test circuit for SIP-5 filter
Input impedance of the symmetrical post-amplifier: 2 kΩ in parallel with 3 pF

3. Characteristics

Items	Conditions	Specifications
Standard atmospheric conditions	Unless otherwise specified, the standard range 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 range	Operating temperature range is the range of ambient temperatures in which the filter can be operated continuously. -20℃ ~ +60℃	
Storage temperature range	Storage temperature range is the range 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

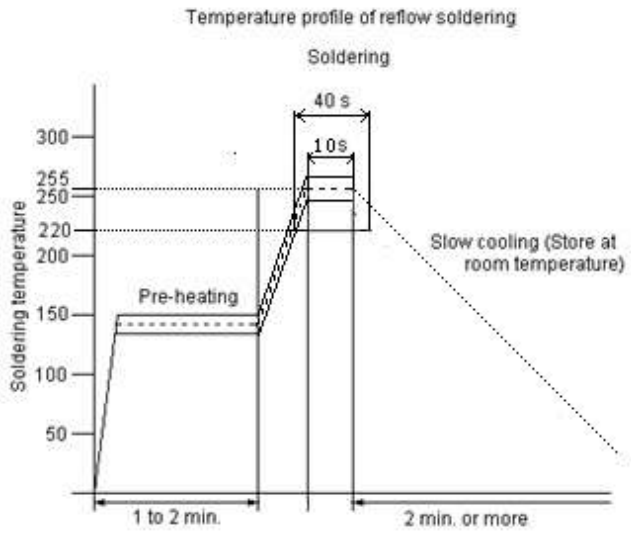
Source impedance Zs=50Ω

Load impedance Z_L=2kΩ//3pF T_A=25℃

Item		Freq	min	typ	max	
Center frequency		Fo	36.00	36.125	36.25	MHz
Insertion attenuation Reference level		36.125MHz	19.3	20.8	22.3	dB
Amplitude ripple(p-p) (32.7~39.5MHz)			-	0.5	0.8	dB
Pass bandwidth		B3dB	7.4	7.7	8.0	MHz
		B15dB	8.2	8.5	8.8	MHz
Relative attenuation		30.750MHz	40.0	50.0	-	dB
		30.875MHz	40.0	50.0	-	dB
		40.250MHz	13.0	17.0	-	dB
		40.375MHz	23.0	31.0	-	dB
Sidelobe	25.00~30.75MHz		36.0	40.0	-	dB
	40.50~42.50MHz		24.0	31.0	-	dB
	42.50~45.00MHz		35.0	41.0	-	dB
Reflected wave signal suppression 1.2 us … 6.0 us after main pulse (test pulse 250 ns , carrier frequency 36.125 MHz)			42.0	50.0	-	dB
Feedthrough signal suppression 1.3us…1.2us before main pulse (test pulse 250 ns , carrier frequency 36.00 MHz)			42.0	60.0	-	dB
Group delay ripple (p-p) 32.3 ~40.0 MHz			-	35.0	80.0	ns
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.	

<table>
<tr><td>Low temperature</td><td>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.</td><td rowspan="4">Mechanical characteristics and specifications in electrical characteristics shall be satisfied. There shall be no excessive change in appearance.</td></tr>
<tr><td>Humidity</td><td>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 measurement shall be made within 1h.</td></tr>
<tr><td>Thermal shock</td><td>The specimen shall be subjected to 100 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>-40 ℃</td><td>0.5h</td></tr>
<tr><td>2</td><td>+85 ℃</td><td>0.5h</td></tr>
</table></td></tr>
<tr><td>Resistance to Soldering heat</td><td>Reflow soldering method for lead and body
Peak: 255 ±5 ℃ for ROHS
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></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>

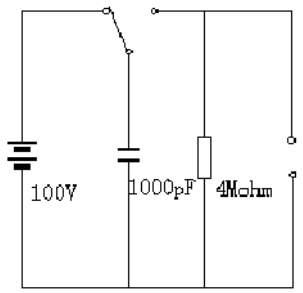
The reliability test result as below:

Test Name	Test Condition	Test Sample Q'ty	Test Result	
			PASS	NG.
HDBF36A26F				
	High temperature test	30Pcs	30Pcs	
	80±2℃ for 96±4h			
	Low temperature test	30Pcs	30Pcs	
	-20±3℃ for 96±4h			
	Humidity Test	30Pcs	30Pcs	
	40±2℃ 90% to 96% for 96±4h			
	Thermal shock	30Pcs	30Pcs	
	-40℃/30min~+85℃/30min 100cycle			
	Soldering heat	30Pcs	30Pcs	
	255 ±5 ℃, 220 ±5 ℃, for 5 sec			
	Solderability	30Pcs	30Pcs	
	Immerse the melt solder at 260℃+5/-0℃ for 5 sec. Surface of the pins shall be covered with solder sufficiently.			

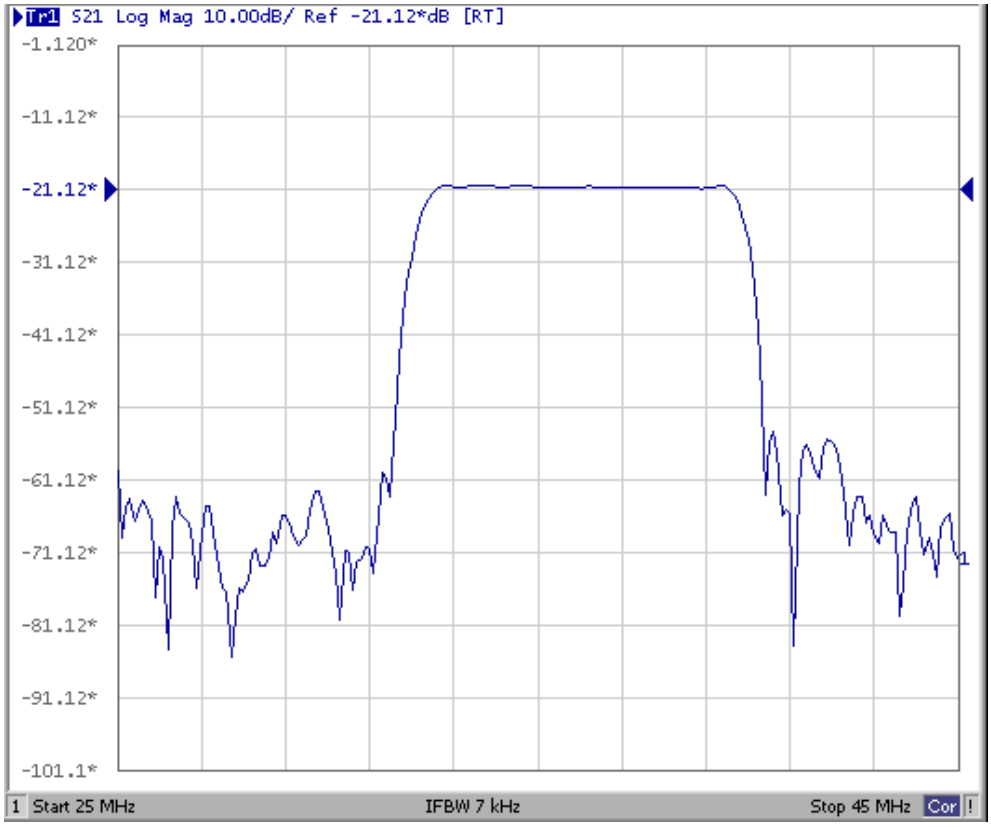
3.4 Mechanical Test

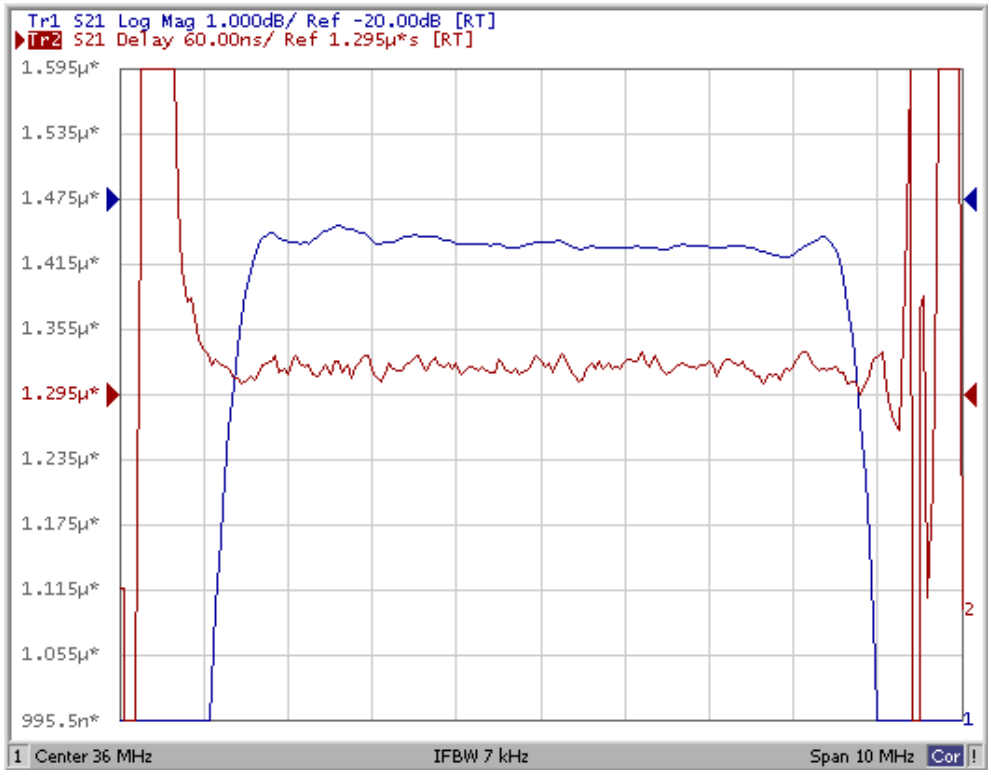
Items	Conditions	Specifications
Vibration	600-3300rpm amplitude 1.5mm 3 directions 2 H each	There shall be no damage.
Drop	On maple plate from 1 m high 3 times	
Lead pull	Pull with 1 kg force for 30 seconds	
Lead bend	90^{o} bending with 500g weigh 2 times	

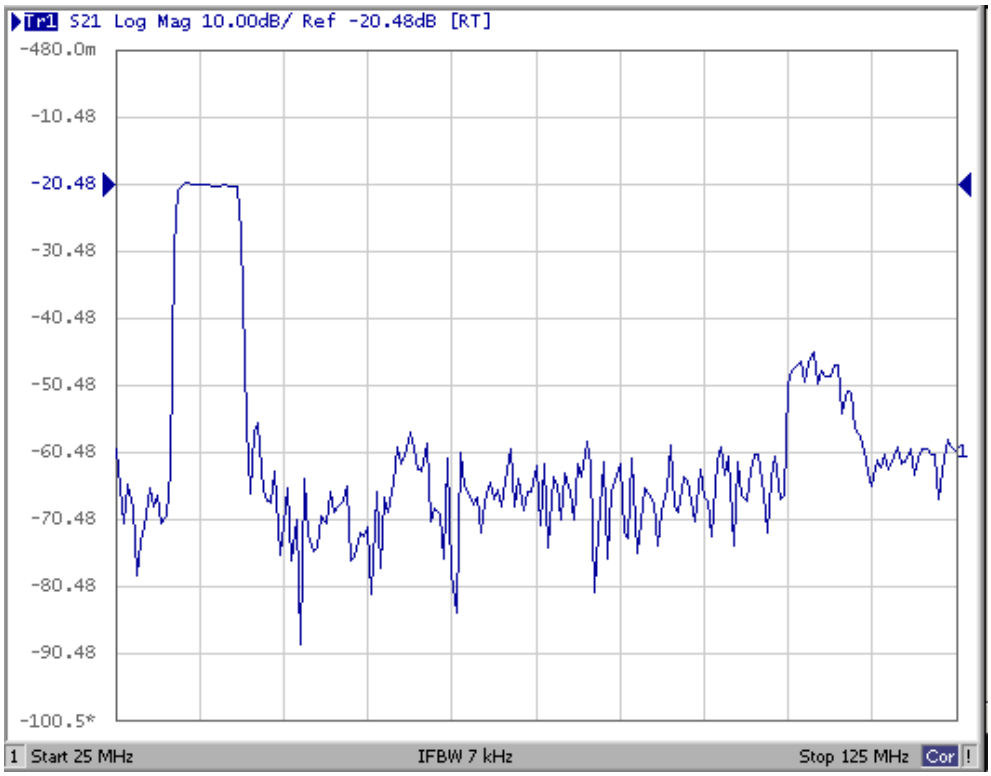
3.5 Voltage Discharge Test

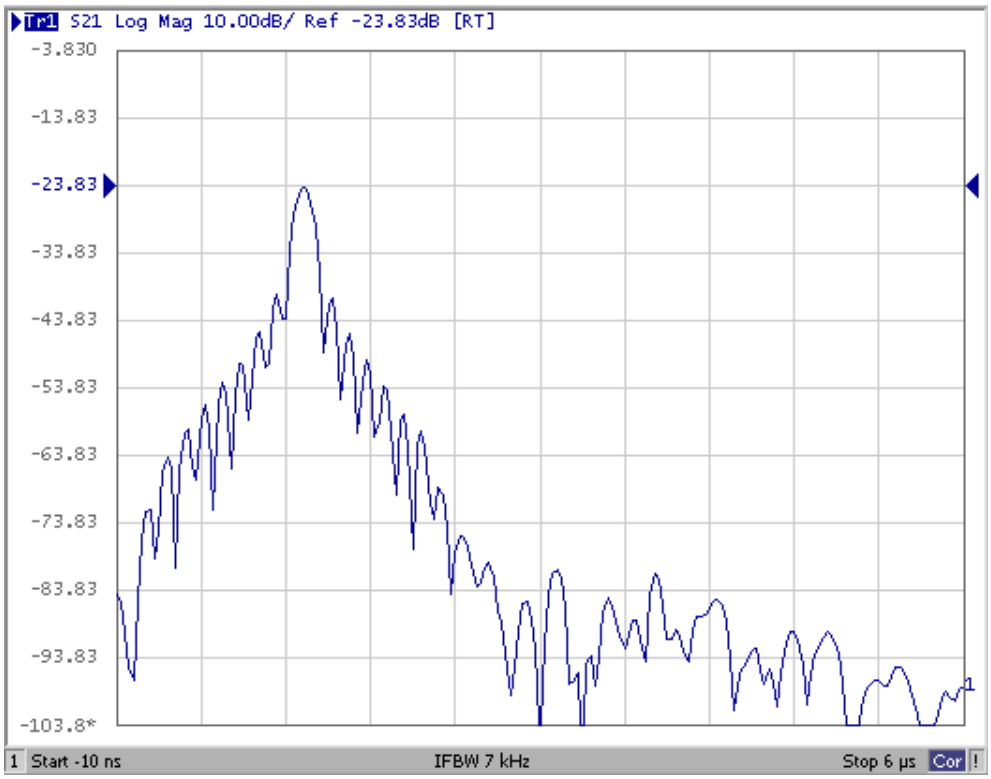
Item	Condition	Specifications
Surge	Between any two electrode 	There shall be no damage

3.6 Frequency response:






Tr1 S21 Log Mag 10.00dB/ Ref -20.48dB [RT]
-480.0m
-10.48
-20.48
-30.48
-40.48
-50.48
-60.48
-70.48
-80.48
-90.48
-100.5*
1
1 Start 25 MHz
IFBW 7 kHz
Stop 125 MHz
Cor

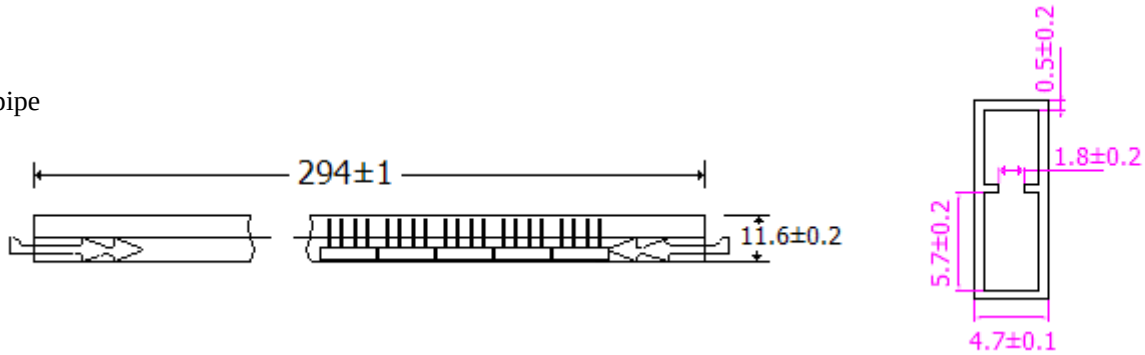

Tr1 S21 Log Mag 10.00dB/ Ref -23.83dB [RT]
-3.830
-13.83
-23.83
-33.83
-43.83
-53.83
-63.83
-73.83
-83.83
-93.83
-103.8*
1
1 Start -10 ns
IFBW 7 kHz
Stop 6 µs
Cor

3.7package

Unit: mm

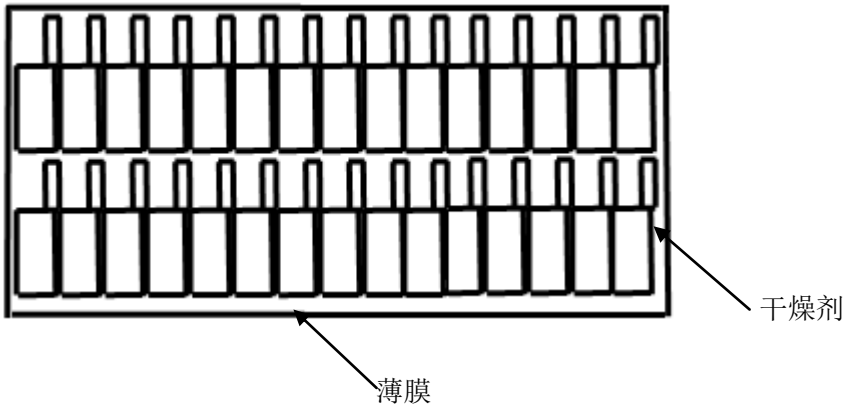
Pipe

20PCS /pipe



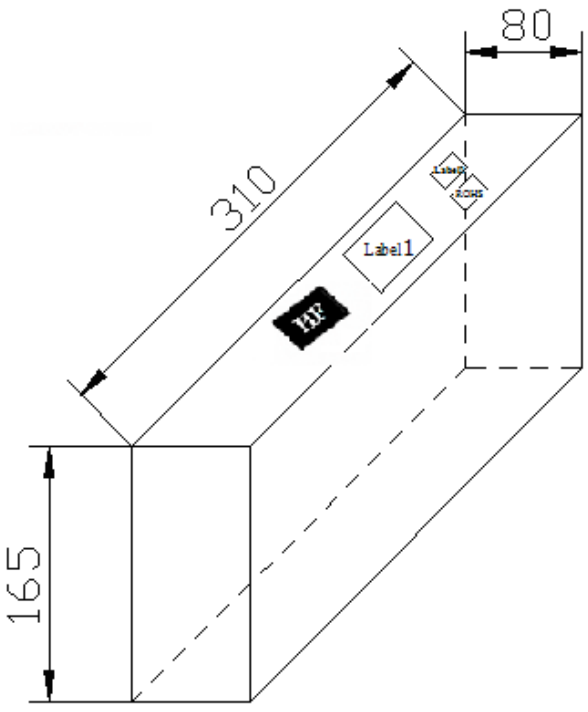
Pipes

20×30PCS



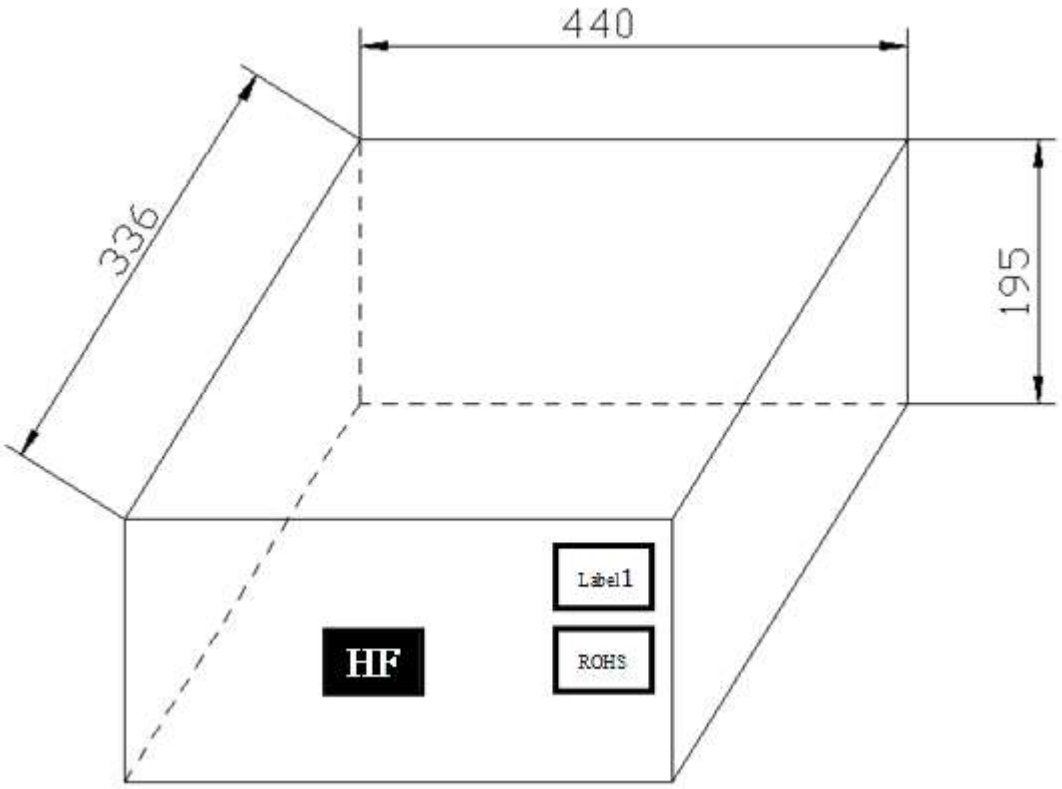
Inside Box

600×5PCS



Outside Box

3000×5PCS



Label 2:

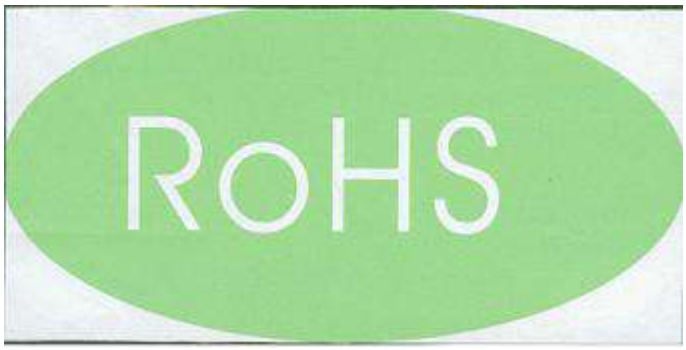
HDBF36A26F
3000PCS

Label 1:

ROHS

Vendor Name SHOULDER ELECTORNICS LTD	
Item No	2FS3890……(LGIT CODE)
Qty	15000PCS
Lot No	

ROHS：



HF: