

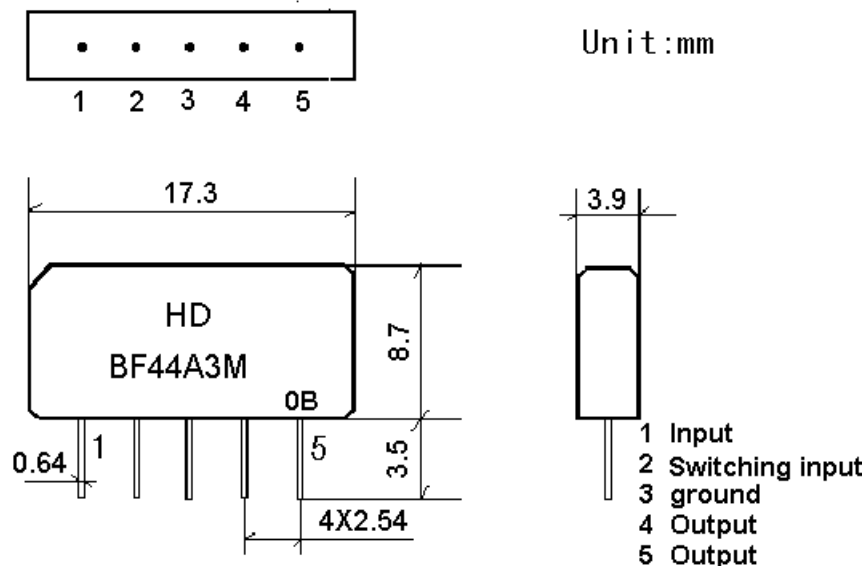
1.SCOPE

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

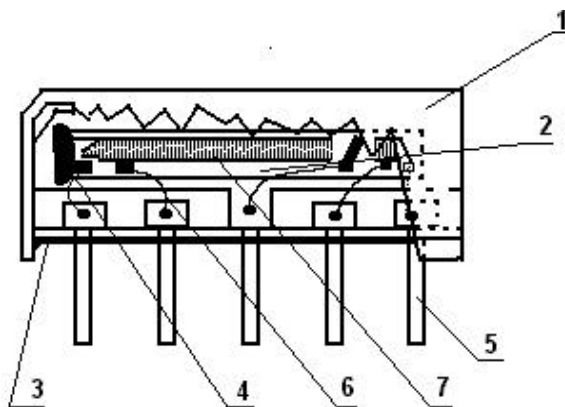
2.1 Dimension and materials

Type : BF44A3M



0: year(0,1,2,3,4,5,6,7,8,9)

B:product in this quarter(A:1~3,B:4~6,C:7~9,D:10~12)



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

3.2 Electrical Characteristics

Characteristics of channel 1 (switching input pin 2 connected to ground pin 1)

Source impedance

$Z_s=50$

Load impedance

$Z_L=2k //3pF$

$T_A=25$

Item	Freq	min	typ	max	
Center frequency	Fo	-	44.00	-	MHz
Insertion attenuation Reference level	44.06MHz	12.5	14.5	16.5	dB
Pass bandwidth	B _{1dB}	-	1.6	-	MHz
	B _{3dB}	-	1.8	-	MHz
	B _{30dB}	-	2.7	-	MHz
Sidelobe	35.06~40.26MHz	35.0	42.0		dB
	40.26~42.56MHz	30.0	38.0		dB
	45.56~48.66MHz	22.0	30.0		dB
	48.66~55.06MHz	32.0	39.0		dB
Temperature coefficient		-72			ppm/k

Characteristics of channel 2 (switching input pin 2 connected to input pin 1)

Source impedance

$Z_s=50$

Load impedance

$Z_L=2k //3pF$

$T_A=25$

Item	Freq	min	typ	max	
Center frequency	Fo	-	44.00	-	MHz
Insertion attenuation Reference level	44.06MHz	13.0	15.0	17.0	dB
Pass bandwidth	B _{1dB}	-	0.8	-	MHz
	B _{3dB}	-	1.2	-	MHz
	B _{30dB}	-	2.4	-	MHz
Sidelobe	35.06~42.66MHz	31.0	39.0		dB
	45.36~47.36MHz	21.0	29.0		dB
	47.36~55.06MHz	31.0	39.0		dB
Temperature coefficient		-72			ppm/k

3.3 Environmental Performance Characteristics

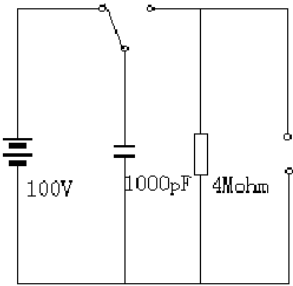
Item Test condition	Allowable change of absolute Level at center frequency(dB)
High temperature test 70 1000H	< 1.0
Low temperature test -40 1000H	< 1.0
Humidity test 40 90-95% 1000H	< 1.0
Thermal shock -20 ==25 ==80 20 cycle	< 1.0

30M 10M 30M	
Solder temperature test Sold temp.260 for 10 sec.	< 1.0
Soldering Immerse the pins melt solder at 260 +5/-0 for 5 sec.	More then 95% of total area of the pins should be covered with solder

3.4 Mechanical Test

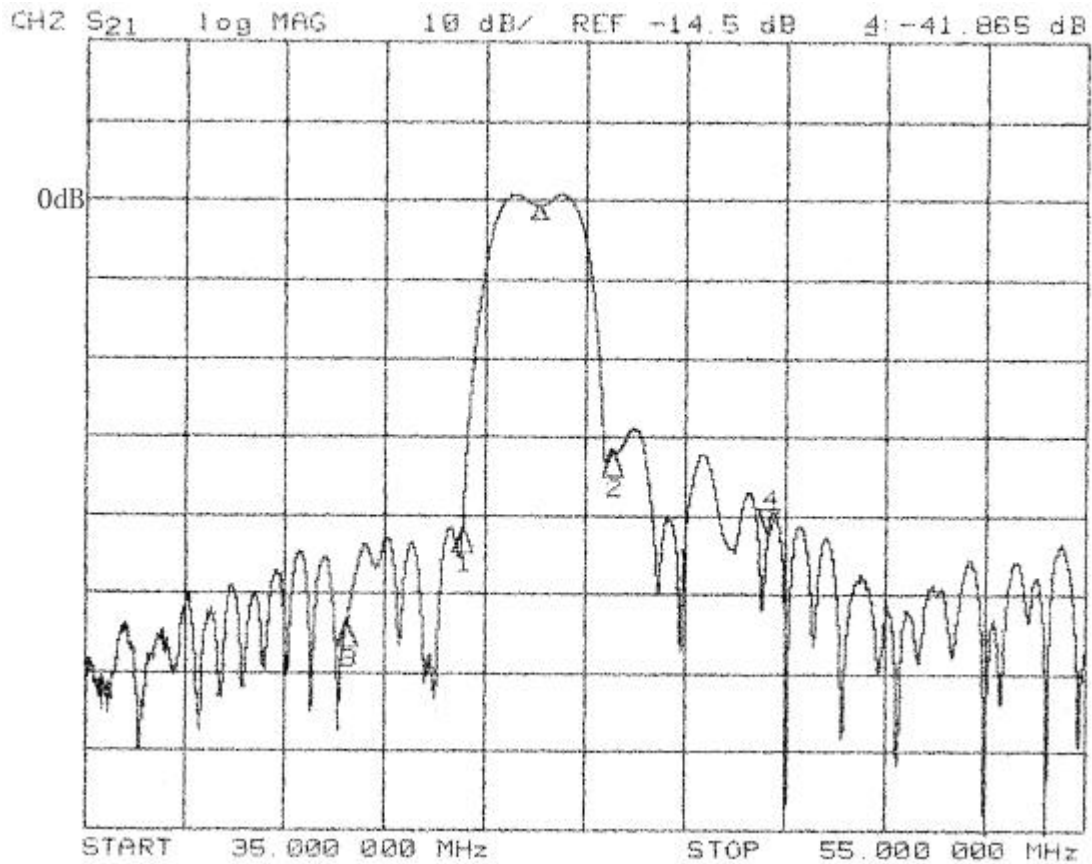
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90° bending with 500g weigh 2 times	<1.0

3.5 Voltage Discharge Test

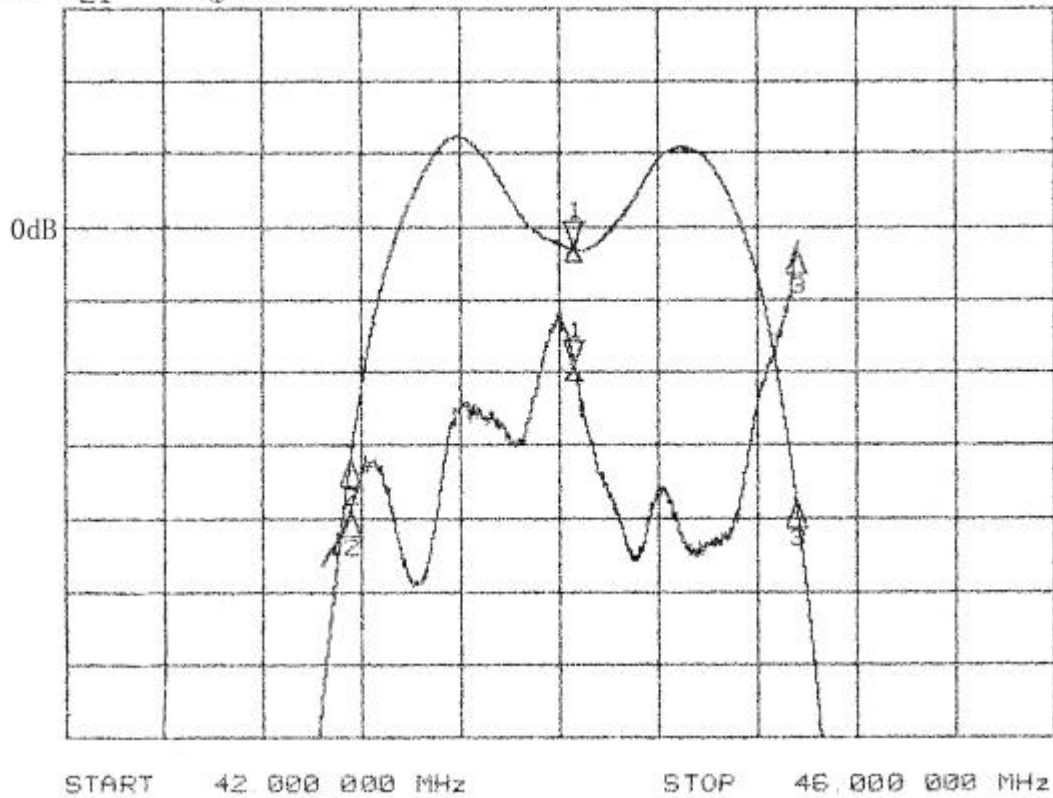
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Surge test Between any two electrode 	<1.0

3.6 Frequency response

Frequency response of channel 1 (switching input pin 2 connected to ground pin 1)

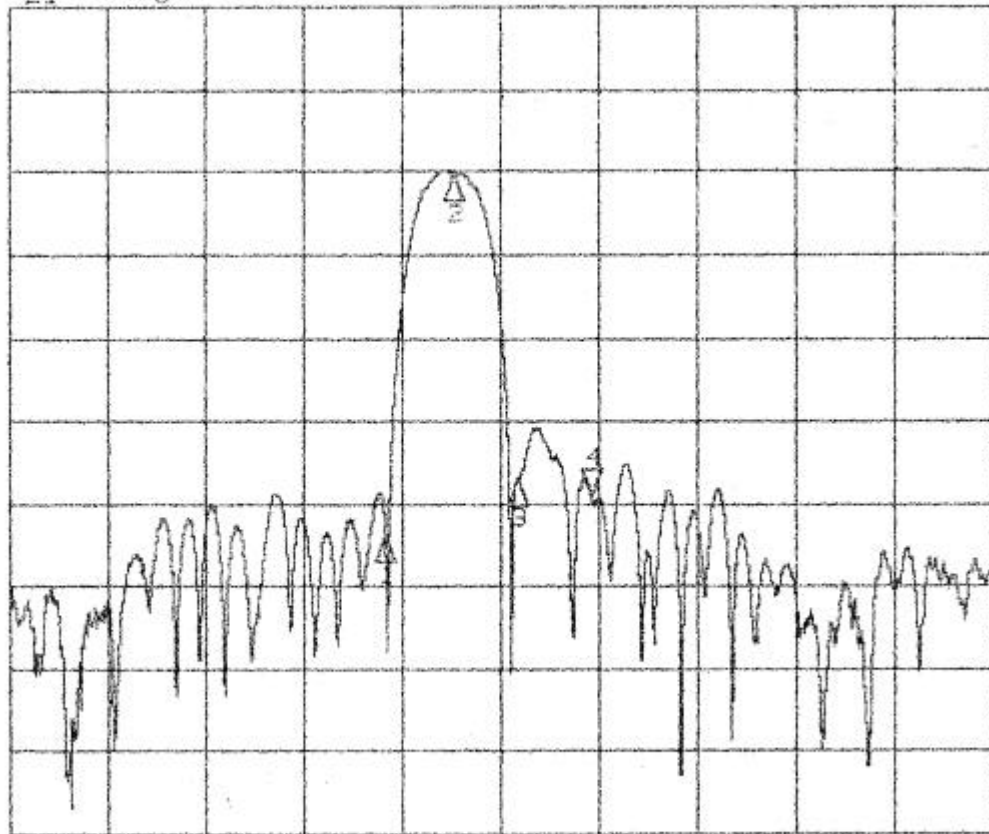


CH1 S21 delay 30 ns/ REF 1.341 ps 1: 143.82 ps
CH2 S21 log MAG 1 dB/ REF -14.5 dB 1: -.0049 dB



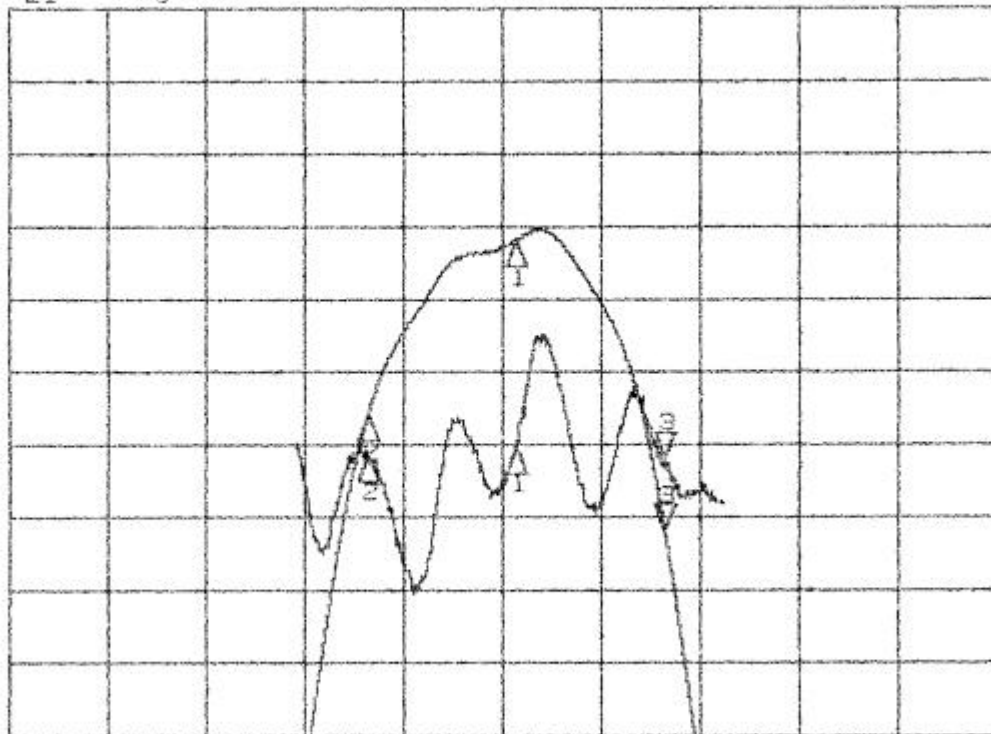
Frequency response of channel 2 (switching input pin 2 connected to input pin 1)

CH2 S21 log MAG 10 dB/ REF -15 dB 4: -54.118 dB



START 35.000 000 MHz STOP 55.000 000 MHz

CH1 S21 delay 30 ns/ REF 1.315 μ s 2: 1.2203 μ s
 CH2 S21 log MAG 1 dB/ REF -15 dB 2: -19.198 dB



START 42.000 000 MHz STOP 46.000 000 MHz

