

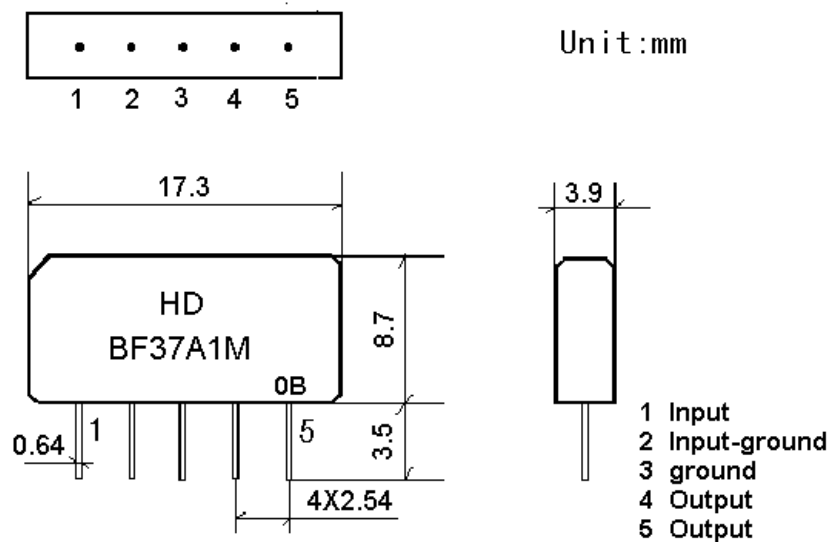
1.SCOPE

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

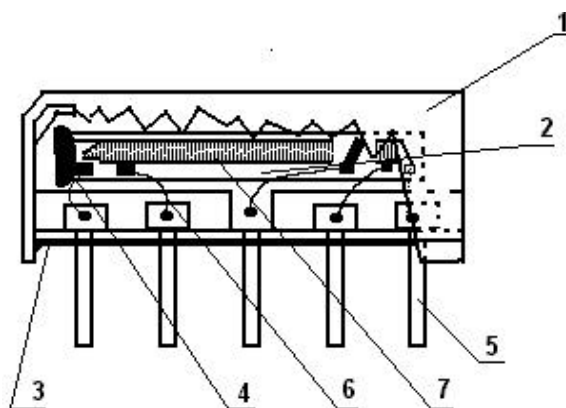
2.1 Dimension and materials

Type : BF37A1M



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

3.1 Maximum Rating

3.2 Electrical Characteristics

Source impedance

$Z_s = 50$

Load impedance

$Z_L = 2k \quad // 3pF$

$T_A = 25$

Item	Freq	min	typ	max	
Center frequency	Fo	-	37.0	-	MHz
Insertion attenuation Reference level	37.00MHz	13.5	15.5.0	18.5	dB
Pass bandwidth	B _{3dB}	6.0	6.2	-	MHz
	B _{30dB}	-	8.0	8.2	MHz
Sidelobe	25.00~32.80MHz	33.0	39.0		dB
	41.20~45.00MHz	33.0	39.0		dB
Temperature coefficient		-72			ppm/k

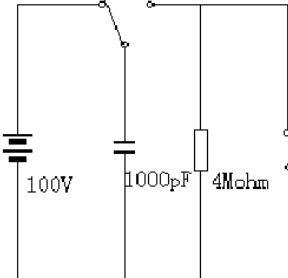
3.3 Environmental Performance Characteristics

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 30M 10M 30M	< 1.0
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

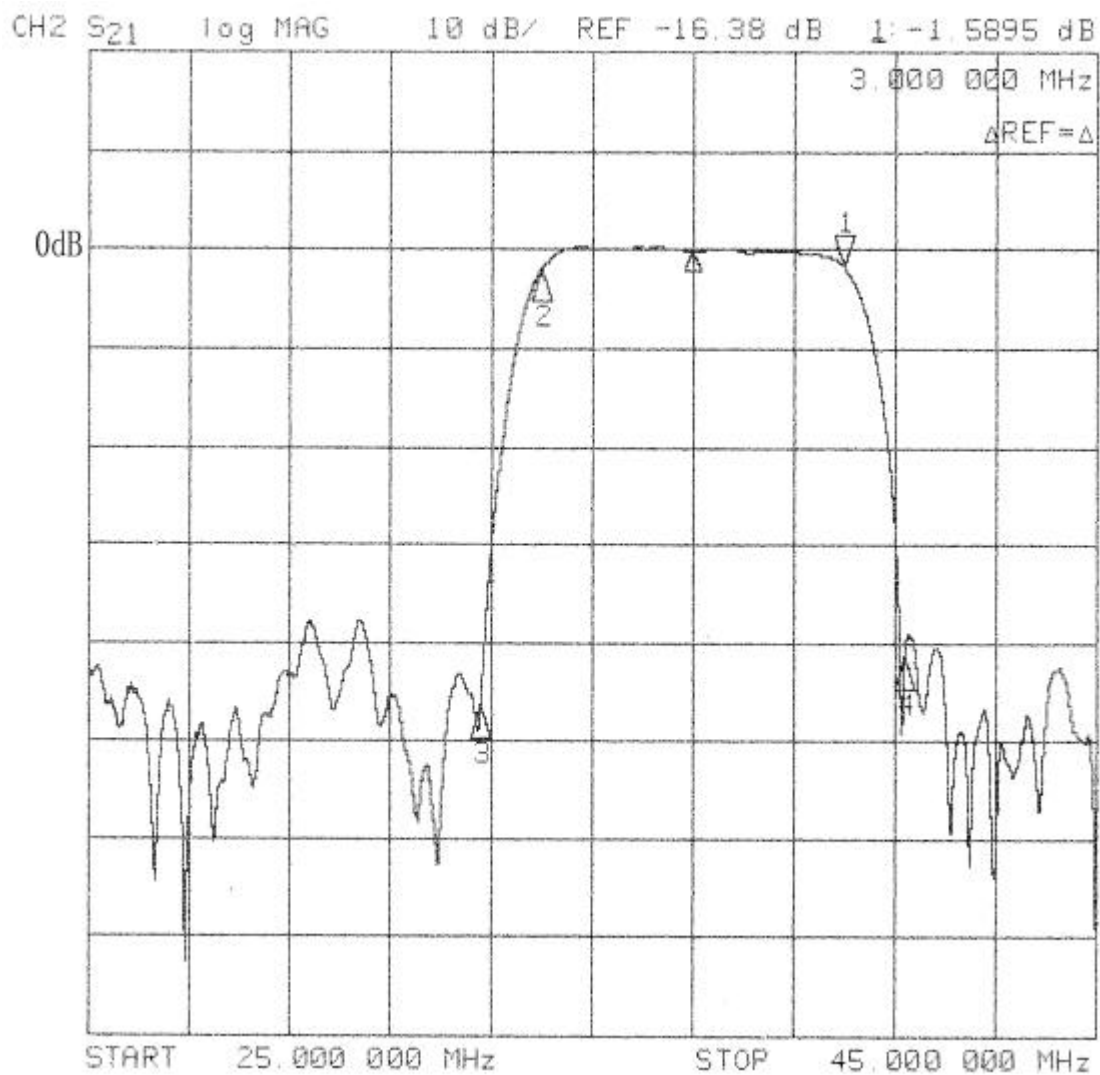
3.4 Mechanical Test

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

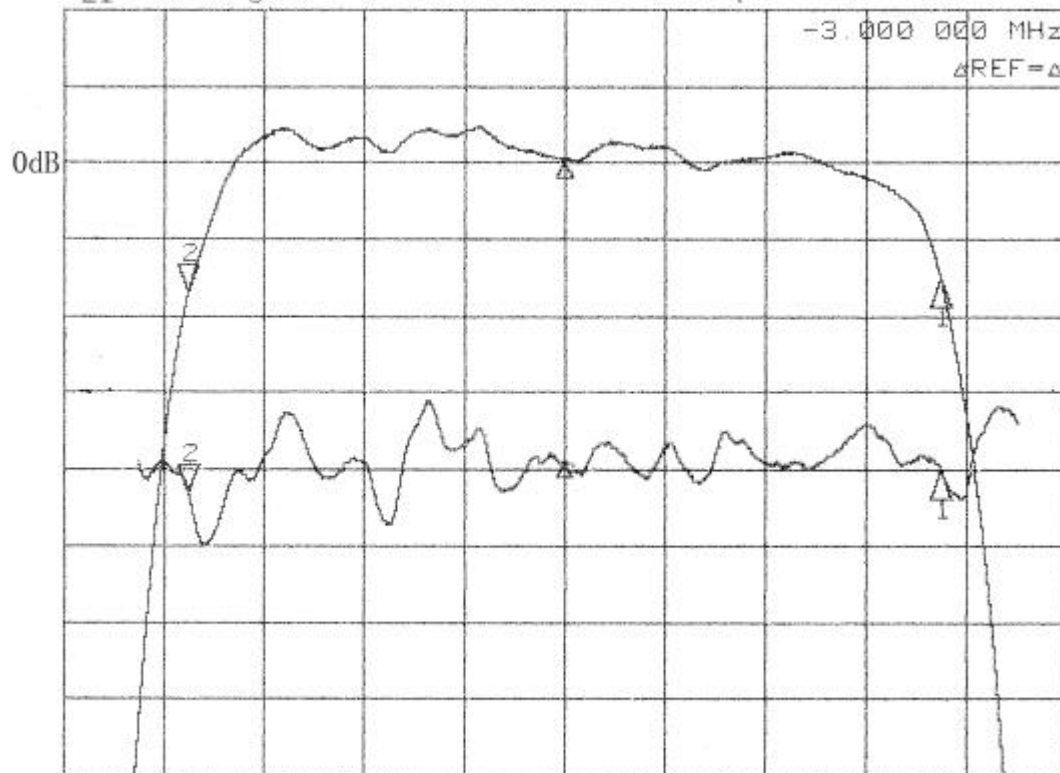
3.5 Voltage Discharge Test

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

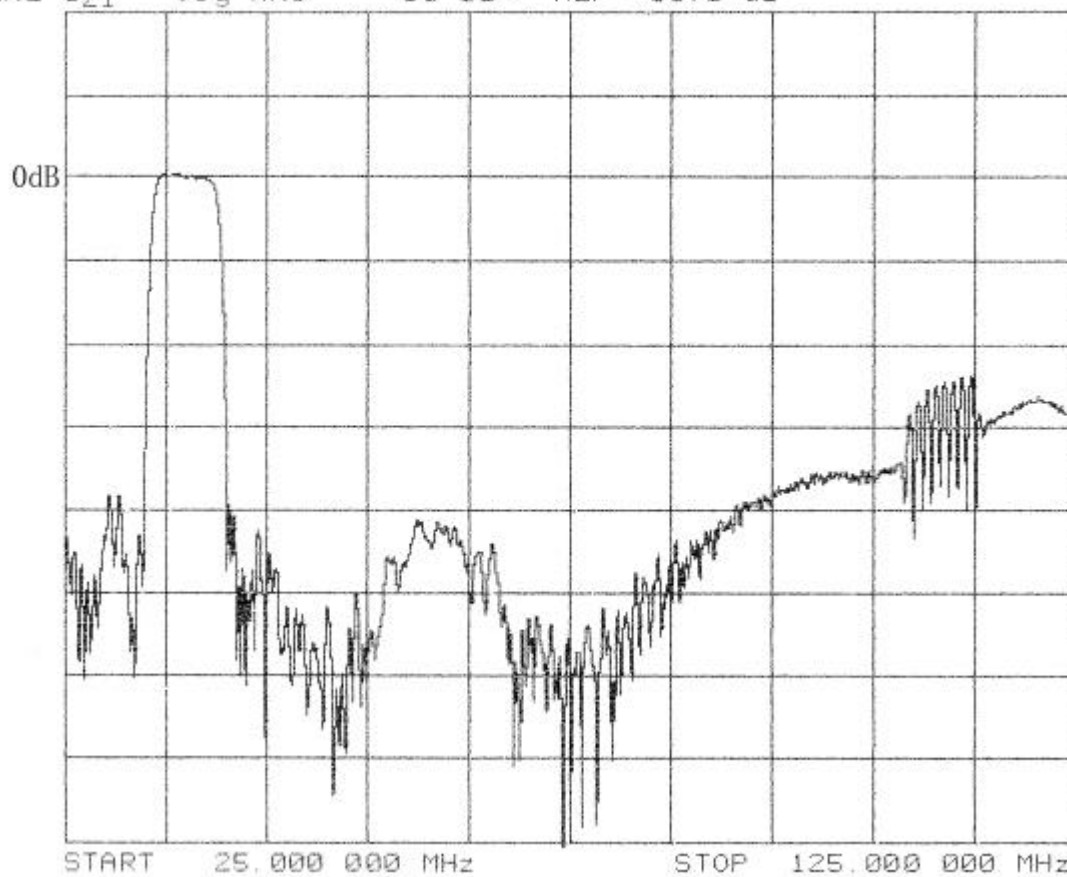
3.6 Frequency response:



CH1 S21 log MAG 1 dB/ REF -16.67 dB 2 -1.698 dB
 CH2 S21 delay 50 ns/ REF 1.355 μ s 2: -19.455 ns



START 33.000 000 MHz STOP 41.000 000 MHz
 CH2 S21 log MAG 10 dB/ REF -16.6 dB



Time domain response:

