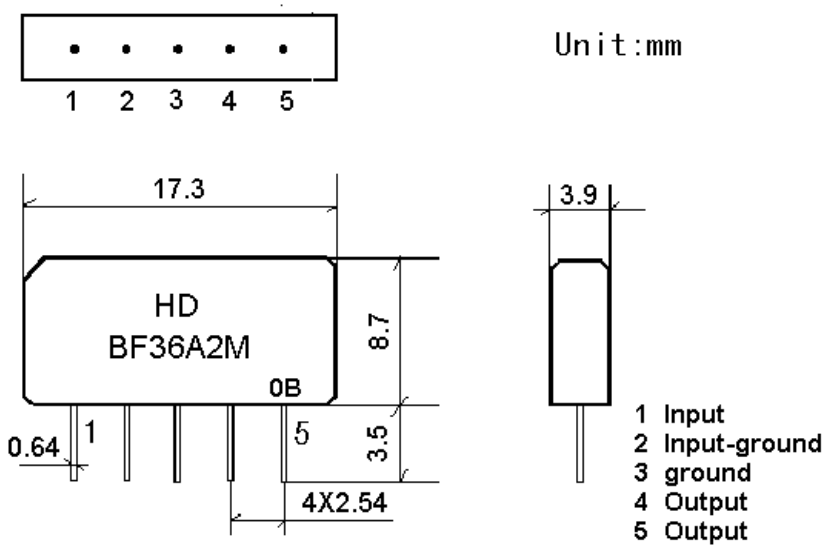
1.SCOPE

The 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.

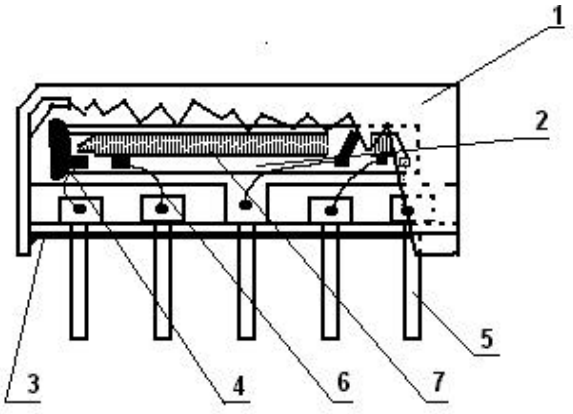
2.Construction

2.1 Dimension and materials

Type: BF36A2M

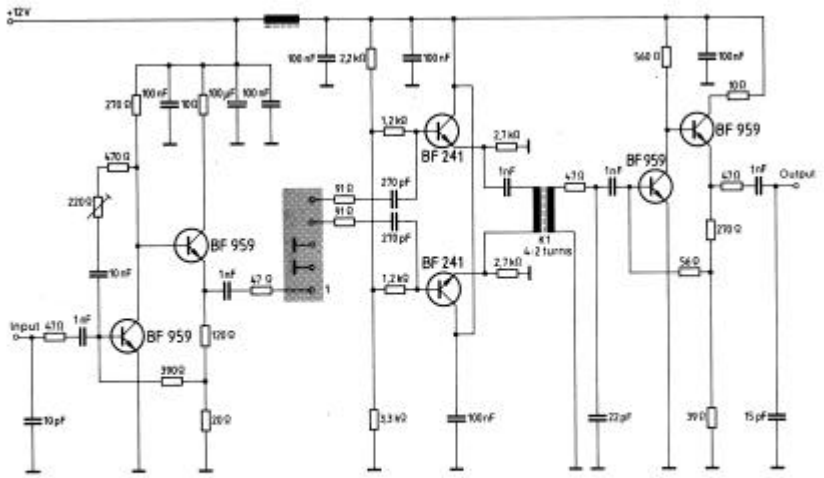


0: year (0,1,2,3,4,5,6,7,8,9)
B:product in this quarter(A:1~3,B:4~6,C:7~9,D:10~12)



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

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

Standard atmospheric conditions

Unless otherwise specified , the standard rang of atmospheric conditions for making measurements and tests is as follows;

Ambient temperature : 15C to 35C
Relative humidity : 25% to 85%
Air pressure : 86kPa to 106kPa

Operating temperature rang

Operating temperature rang is the rang of ambient temperatures in which the filter can be operated continuously. -10C ~ +60C

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. -40C ~ +70C

Reference temperature +25C

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=25C

Item		Freq	min	typ	max	
Center frequency		Fo	-	36.125	-	MHz
Insertion attenuation Reference level		36.125MHz	17.5	19.5	21.5	dB
Pass bandwidth		B3dB	-	7.0	-	MHz
		B30dB	-	7.8	-	MHz
Relative attenuation		32.625MHz	1.7	3.2	4.7	dB
		39.625MHz	1.4	2.4	3.4	dB
		31.625MHz	32.0	41.0	-	dB
		40.625MHz	31.0	37.0	-	dB
Sidelobe	25.00~28.00MHz		34.0	39.0	-	dB
	28.00~31.50MHz		30.0	33.0	-	dB
	40.75~45.00MHz		35.0	42.0	-	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	52.0		dB
Feedthrough signal suppression 1.2 us …6.0 us after main pulse (test pulse 250 ns , carrier frequency 36.125 MHz)			45.0	54.0		dB
Group delay ripple (p-p)			-	50	-	ns
Temperature coefficient			-72			ppm/k

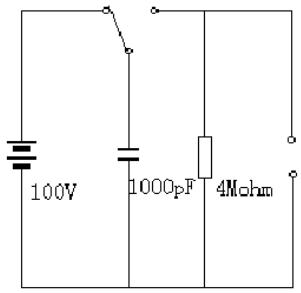
3.3 Environmental Performance Characteristics

Item Test condition	Allowable change of absolute Level at center frequency (dB)
High temperature test 70C 1000H	< 1.0
Low temperature test -40C 1000H	< 1.0
Humidity test 40C 90-95% 1000H	< 1.0
Thermal shock -20C==25C==80C 20 cycle 30M 10M 30M	< 1.0
Solder temperature test Sold temp.260C for 10 sec.	< 1.0
Soldering Immerse the pins melt solder at 260C+5/-0C for 5 sec.	More then 95% of total area of the pins should be covered with solder

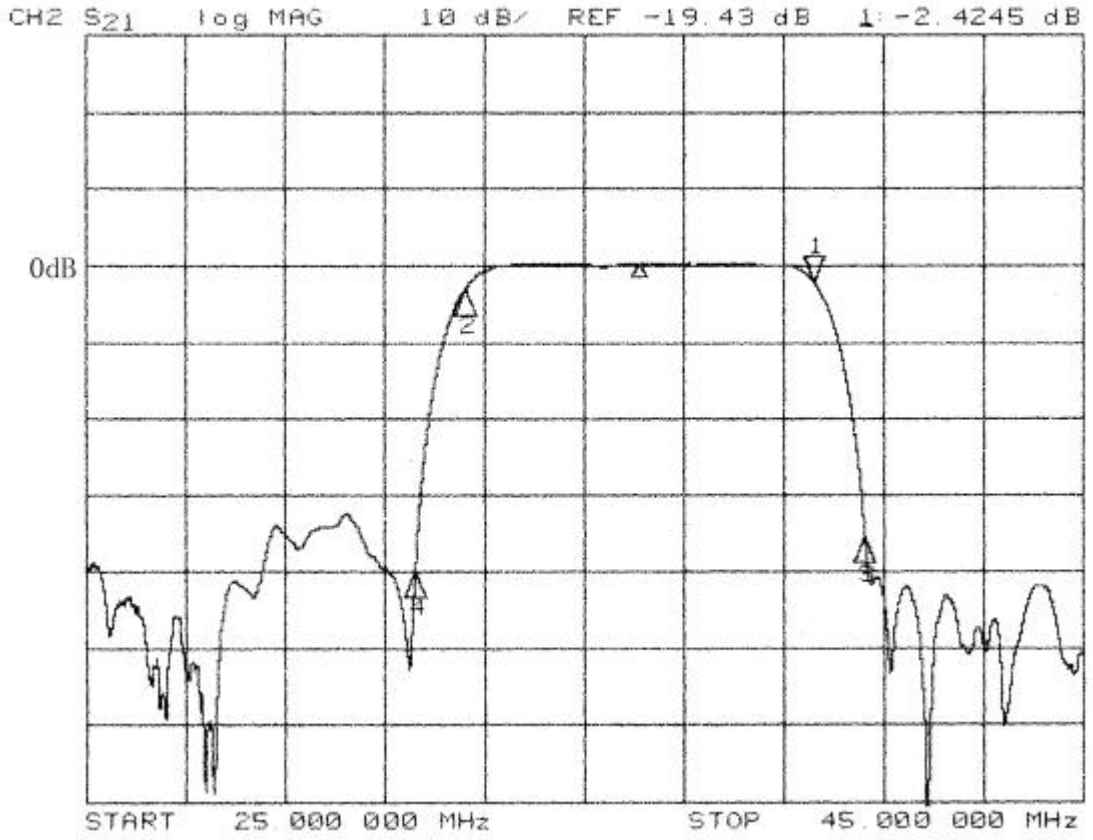
3.4 Mechanical Test

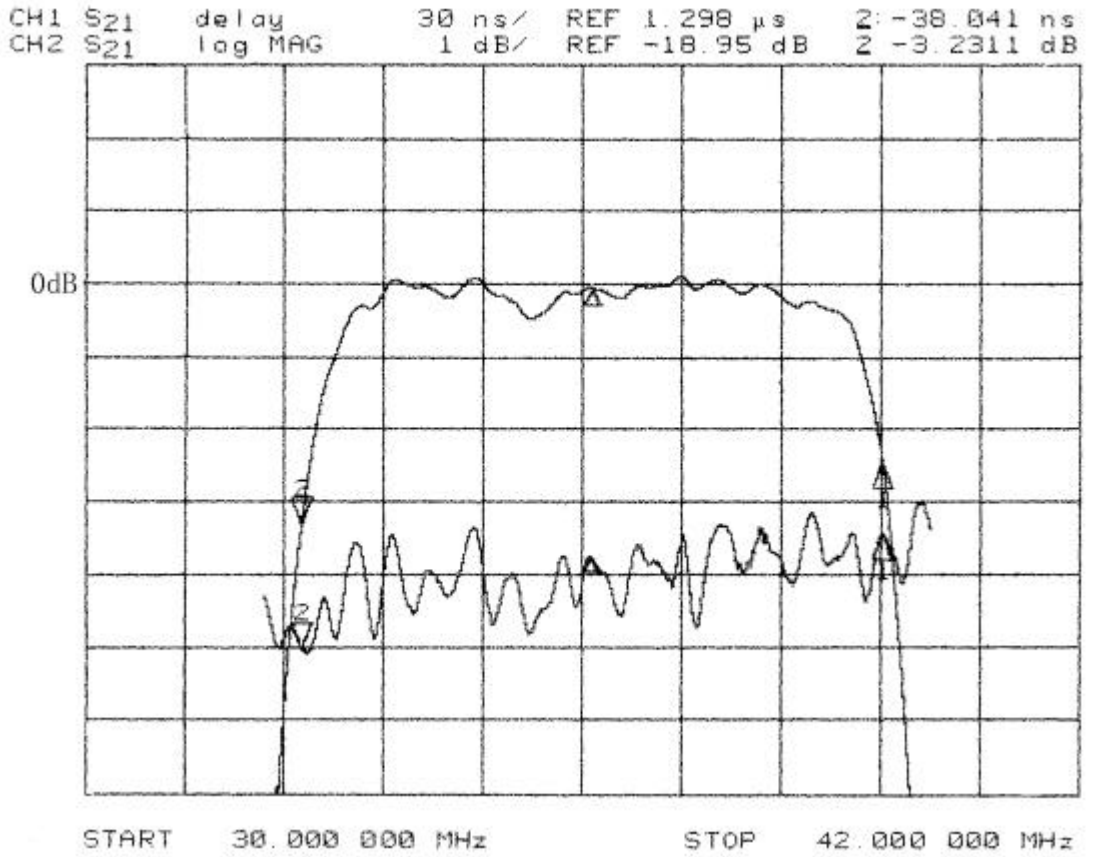
Item Test condition	Allowable change of absolute Level at center frequency (dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90^{o} bending with 500g weigh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

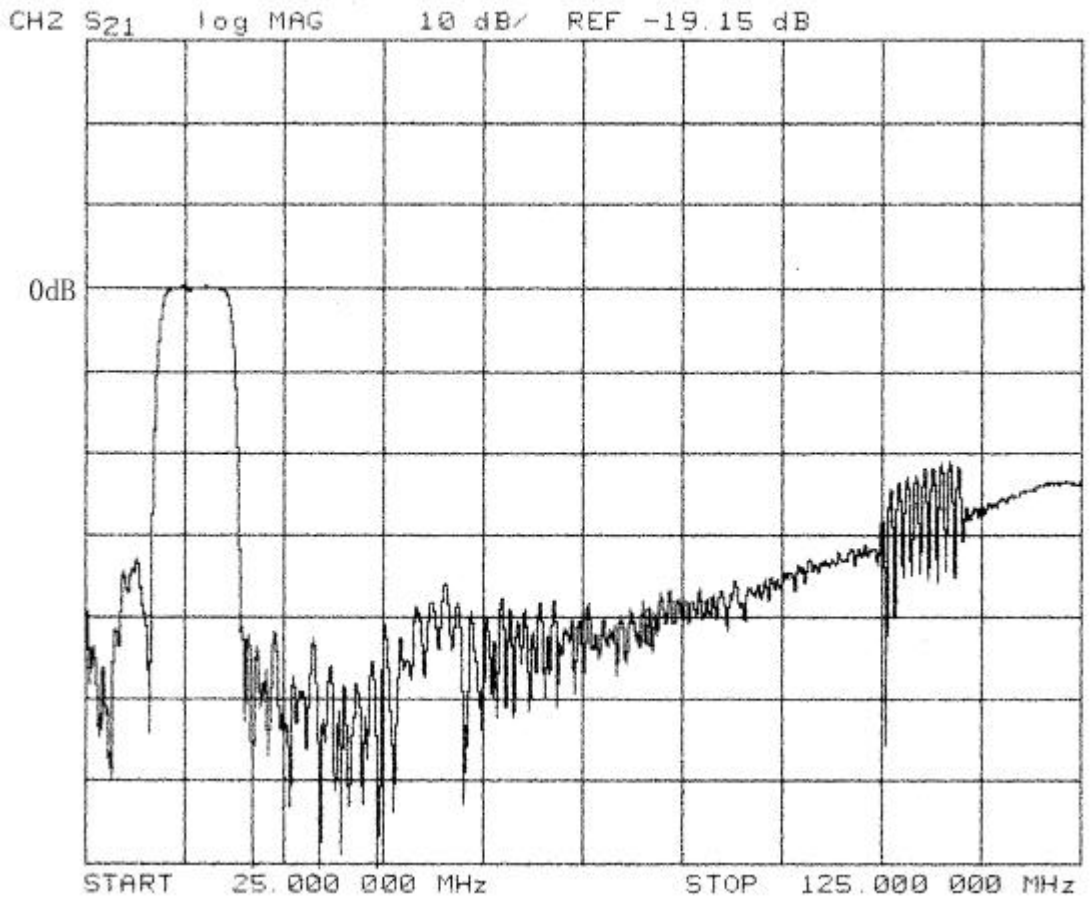
3.5 Voltage Discharge Test

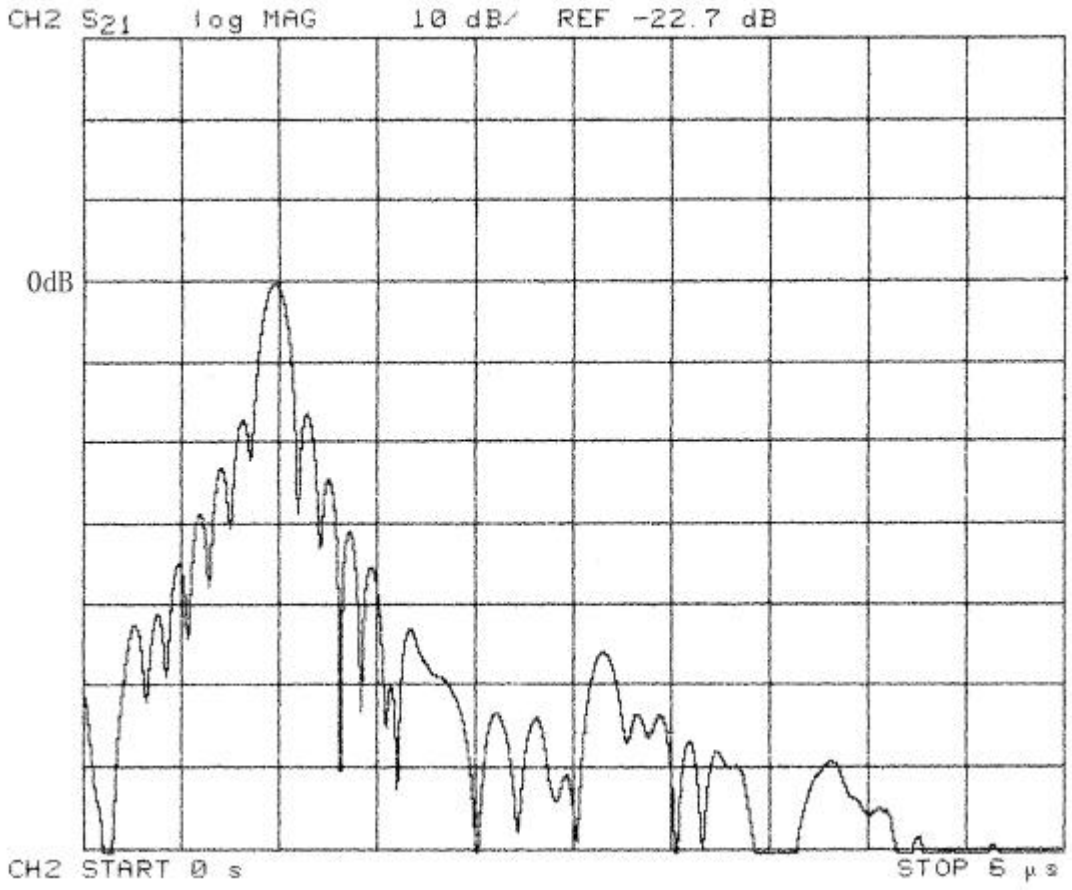
Item Test condition	Allowable change of absolute Level at center frequency (dB)
Surge test Between any two electrode 	<1.0

3.6 Frequency response:






CH2 S21 log MAG 10 dB/ REF -19.15 dB
0dB
START 25.000 000 MHz
STOP 125.000 000 MHz


CH2 S21 log MAG 10 dB/ REF -22.7 dB
0dB
CH2 START 0 s
STOP 6 µs