

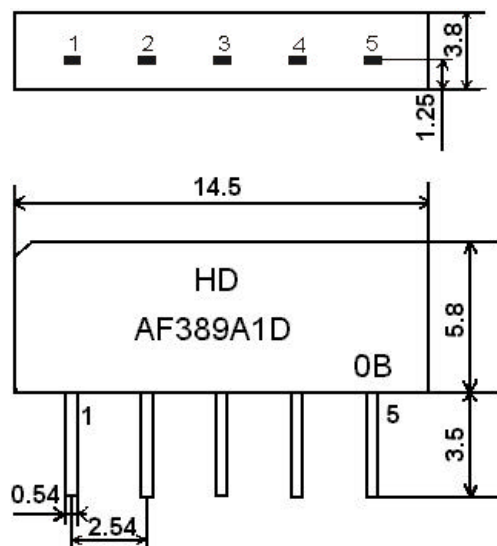
1. SCOPE

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: AF389A1D

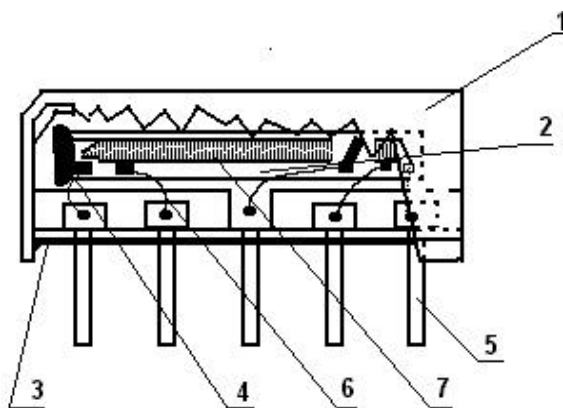


Unit : mm

- 1 Input channel 1/ Input ground
- 2 Input ground / Input channel 2
- 3 Chip carrier - ground
- 4 Output
- 5 Output

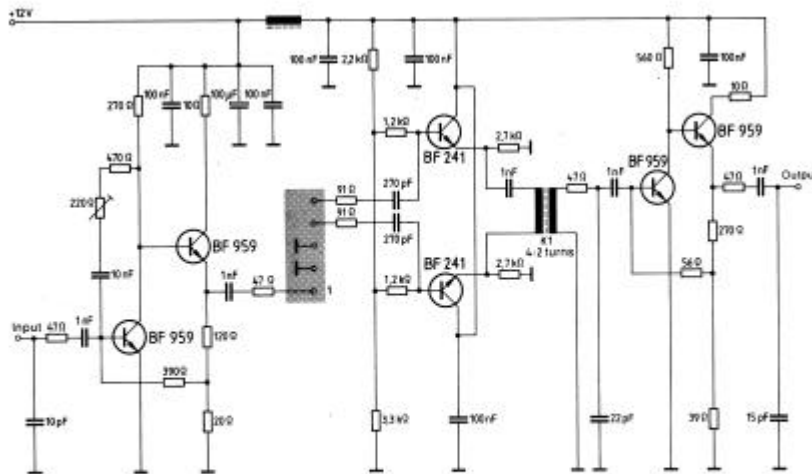
0: year(0,1,2,3,4,5,6,7,8,9)

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: $2\text{ k}\Omega$ 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 : 15 to 35
- 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. $-10 \sim +60$

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. $-40 \sim +70$

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**Characteristics of channel 1**Source impedance $Z_s=50$ Load impedance $Z_L=2k //3pF$ $T_A=25$

Item	Freq	min	typ	max	
Insertion attenuation Reference level	40.40MHz	12.2	14.2	16.2	dB
Relative attenuation	33.90MHz	40.0	47.0	-	dB
	38.40MHz	40.0	50.0	-	dB
	41.90MHz	36.0	42.0	-	dB
	32.40MHz	40.0	47.0	-	dB
Sidelobe	25.00~38.40MHz	36.0	42.0	-	dB
	41.90~45.00MHz	31.0	36.0	-	dB
Temperature coefficient		-72			ppm/k

Characteristics of channel 2Source impedance $Z_s=50$ Load impedance $Z_L=2k //3pF$ $T_A=25$

Item	Freq	min	typ	max	
Insertion attenuation Reference level	33.40MHz	13.0	15.0	17.0	dB
Relative attenuation	33.05MHz	-1.8	-0.3	1.2	dB
	32.90MHz	-1.4	0.1	1.6	dB
	32.40MHz	-1.7	-0.2	1.3	dB
	38.90MHz	37.0	45.0	-	dB
	34.47MHz	24.0	30.0	-	dB
	30.90MHz	30.0	36.0	-	dB
	40.40MHz	34.0	40.0	-	dB
	40.90MHz	35.0	42.0	-	dB
Sidelobe	25.00~30.50MHz	36.0	42.0	-	dB
	40.40~45.00MHz	31.0	38.0	-	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

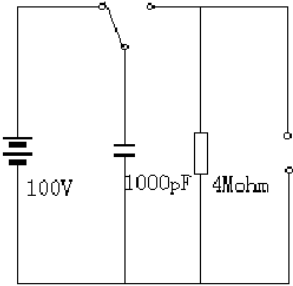
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30M 10M 30M	
Solder temperature test Sold temp.260 for 10 sec.	< 1.0
Soldering Immerse the pins melt solder at 260 +5/-0 for 5 sec.	More then 95% of total area of the pins should be covered with solder

3.4 Mechanical Test

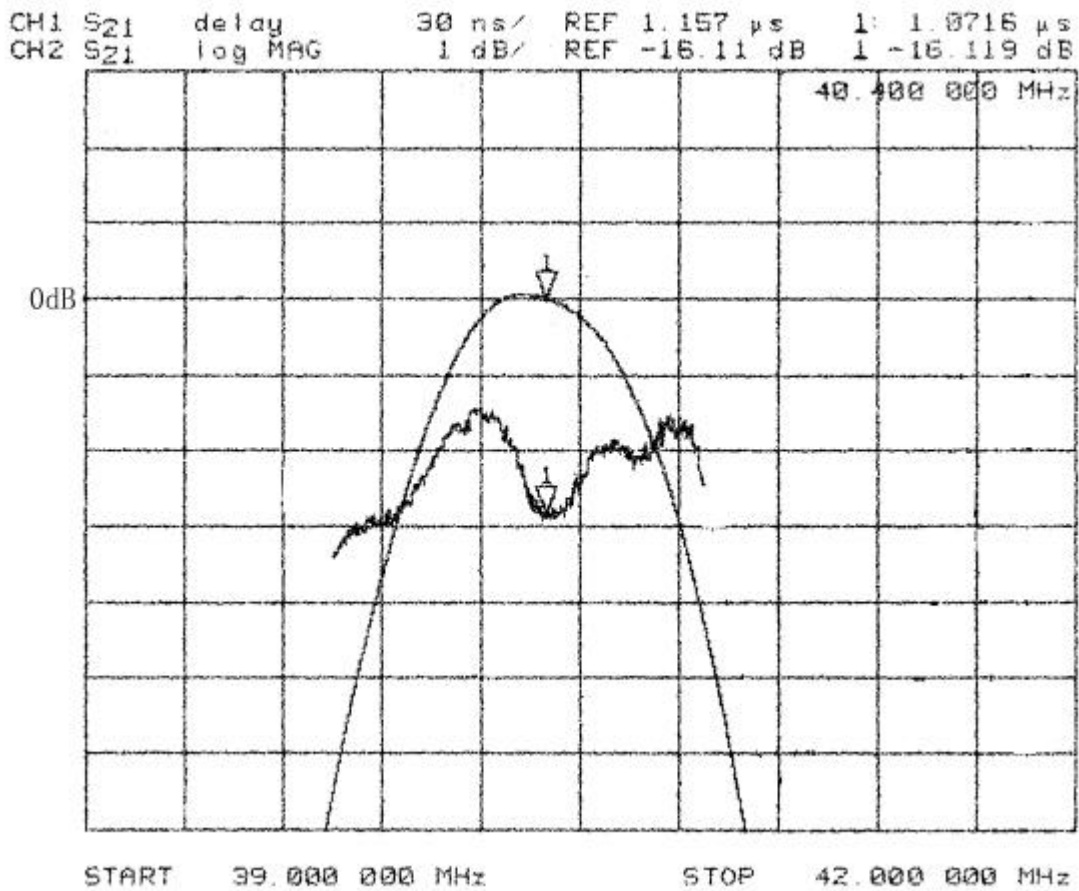
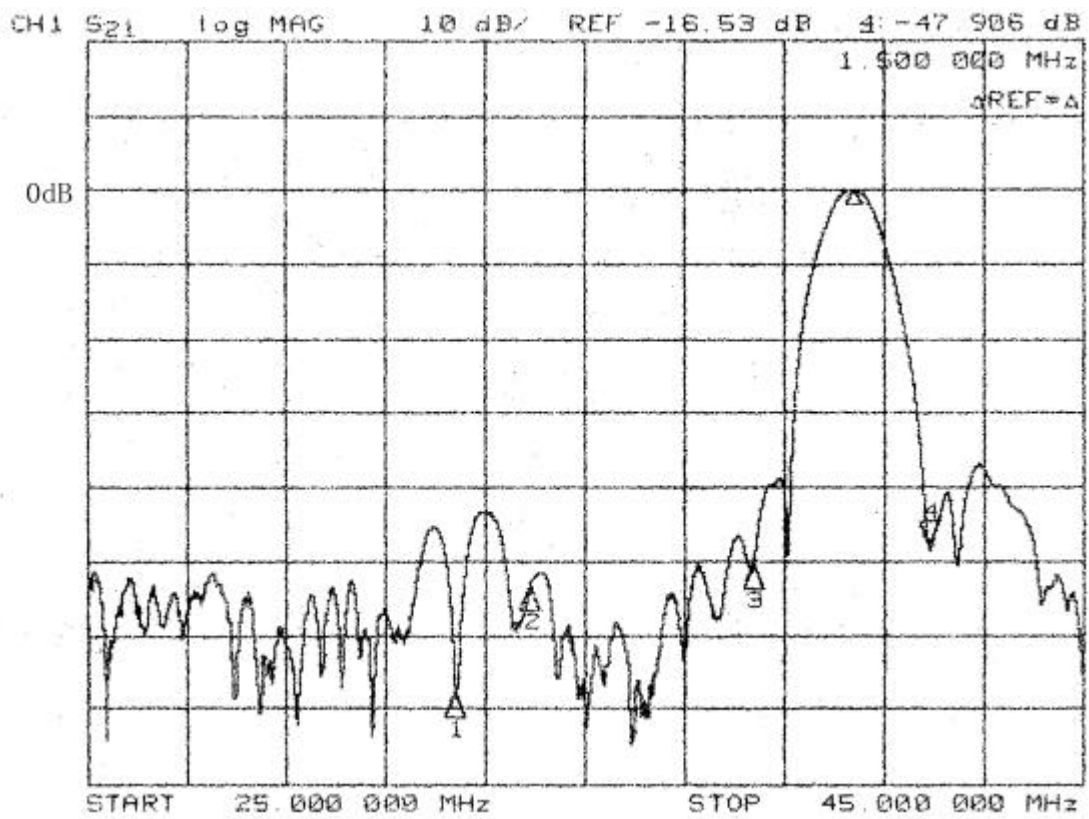
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90° bending with 500g weigh 2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



Frequency response of channel 2

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