

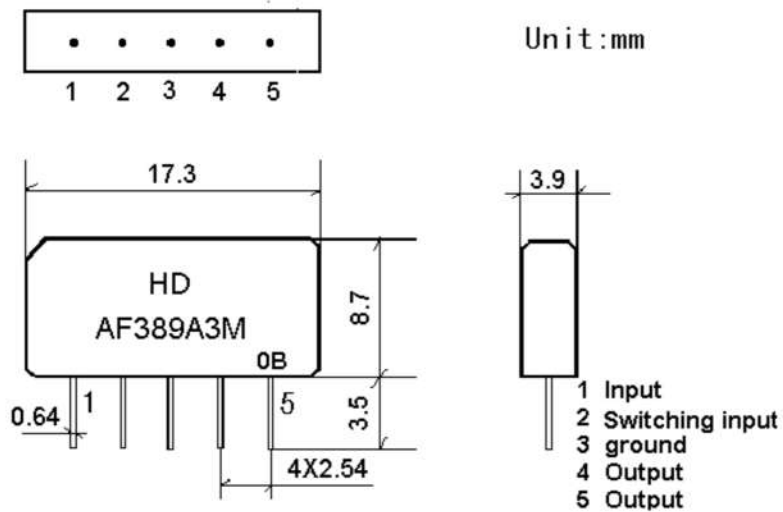
1.SCOPE

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

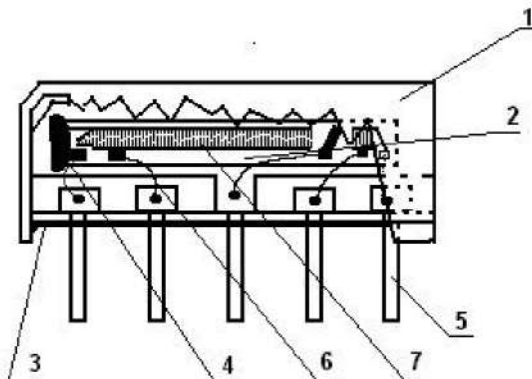
2.1 Dimension and materials

Type: AF389A3M



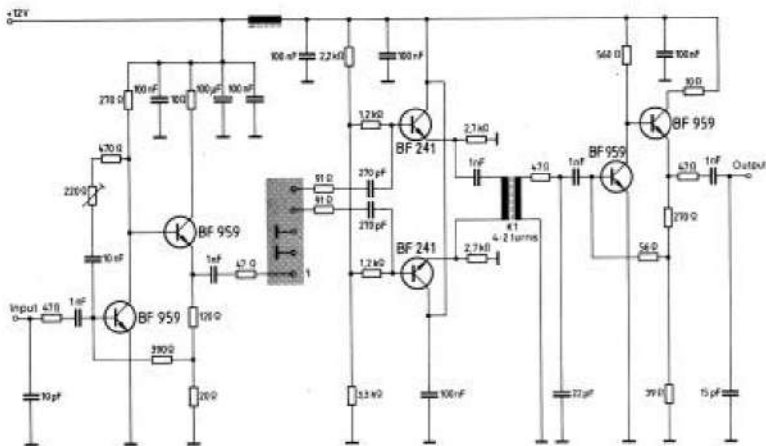
0: year (0,1,2,3,4,5,6,7,8,9)

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 range of atmospheric conditions for making measurements and tests is as follows;

- Ambient temperature : 15°C to 35°C
- 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°C ~ +60°C

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°C ~ +70°C

Reference temperature +25°C

3.1 Maximum Rating

DC voltage	VDC	12	V	Between any terminals
AC voltage	V _{pp}	10	V	Between any terminals

3.2 Electrical Characteristics

Source impedance

$Z_s=50\ \Omega$

Load impedance

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

$T_A=25^\circ C$

Item	Freq	min	typ	max	
Insertion attenuation Reference level	38.90MHz	15.5	17.5	19.5	dB
Relative attenuation	32.40MHz	0.3	1.5	2.7	dB
	32.90MHz	-	0.5	-	dB
	33.40MHz	-0.7	0.3	1.3	dB
	34.40MHz	0.1	1.6	3.1	dB
	30.90MHz	32.0	38.0	-	dB
	40.40MHz	35.0	48.0	-	dB
Sidelobe	25.00~30.90MHz	32.0	37.0	-	dB
	40.40~45.00MHz	33.0	39.0	-	dB
Temperature coefficient		-72			ppm/k

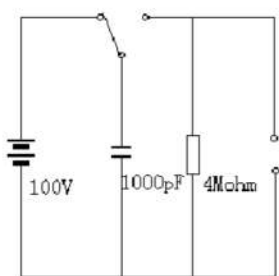
3.3 Environmental Performance Characteristics

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

3.4 Mechanical Test

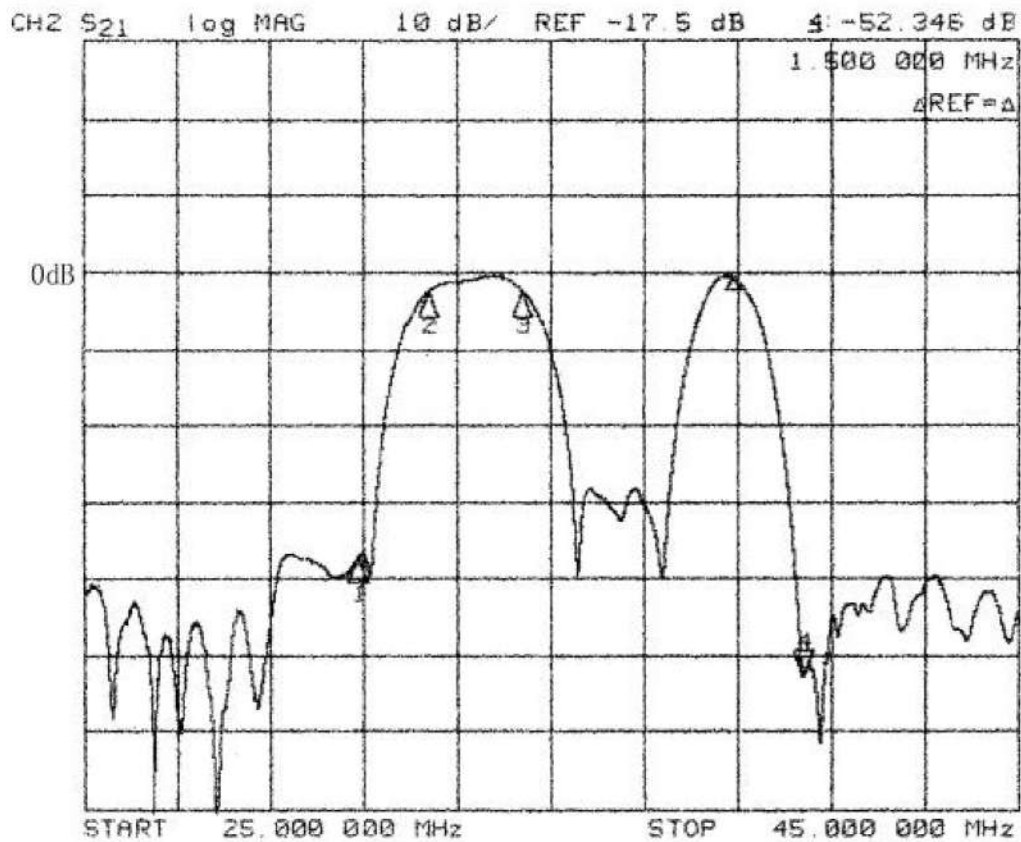
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90° bending with 500g weigh 2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

3.5 Voltage Discharge Test

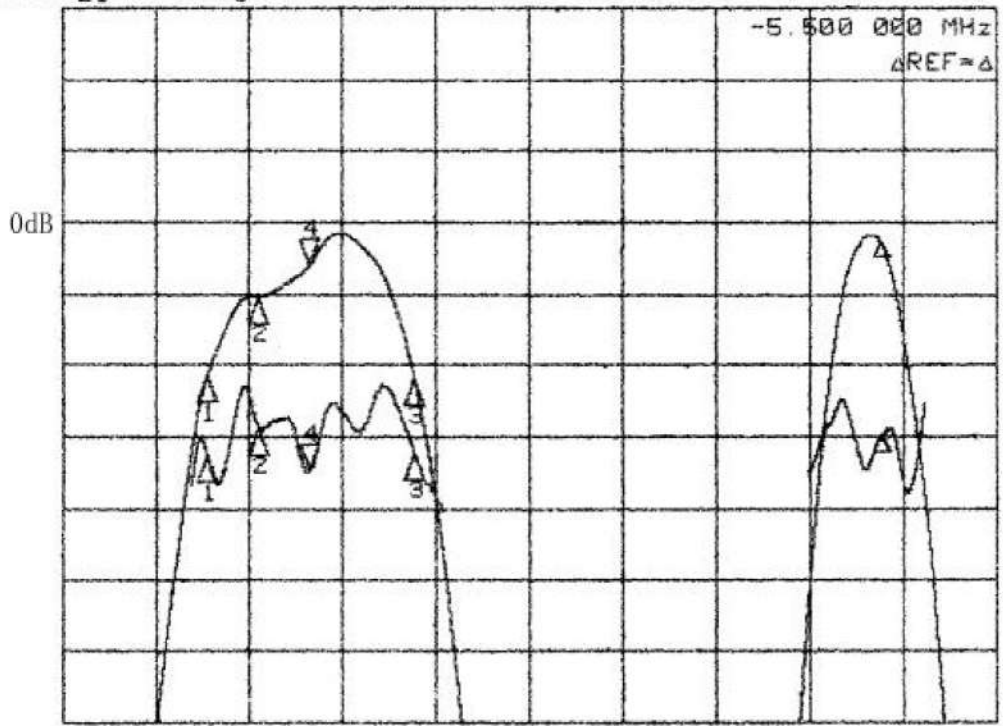
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Surge test Between any two electrode 	<1.0

3.6 Frequency response

Frequency response :



CH1 S21 log MAG 1 dB/ REF -17.5 dB 4 -.3117 dB
CH2 S21 delay 30 ns/ REF 1.205 μ s 4: -13.676 ns



START 31.000 000 MHz

STOP 40.000 000 MHz