

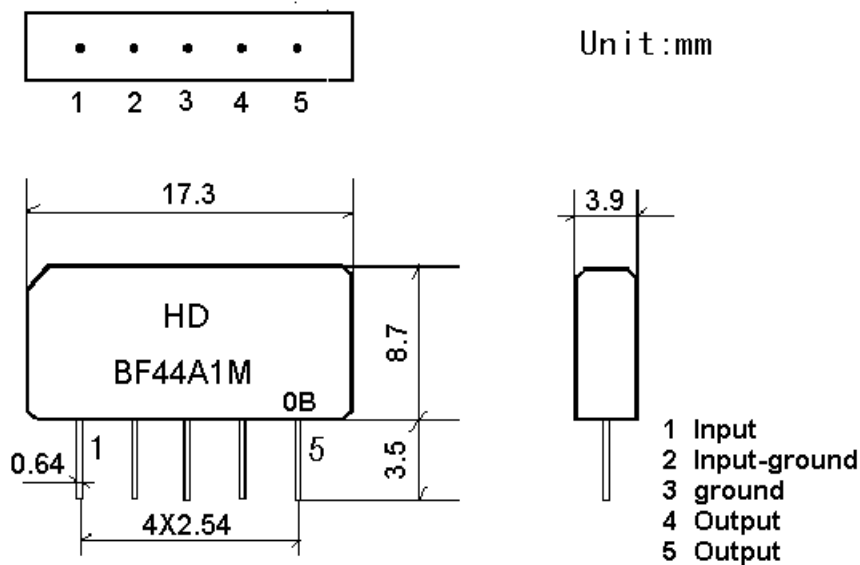
1. SCOPE

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

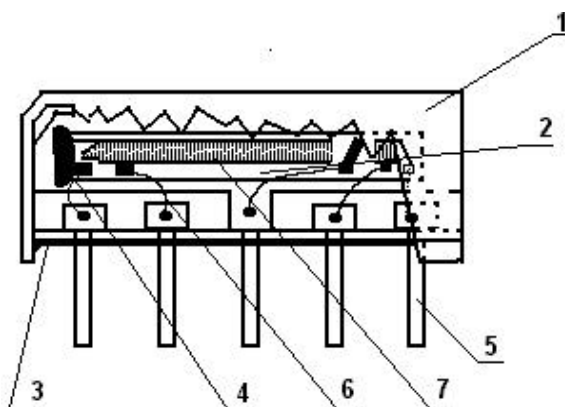
2.1 Dimension and materials

Type : BF44A1M



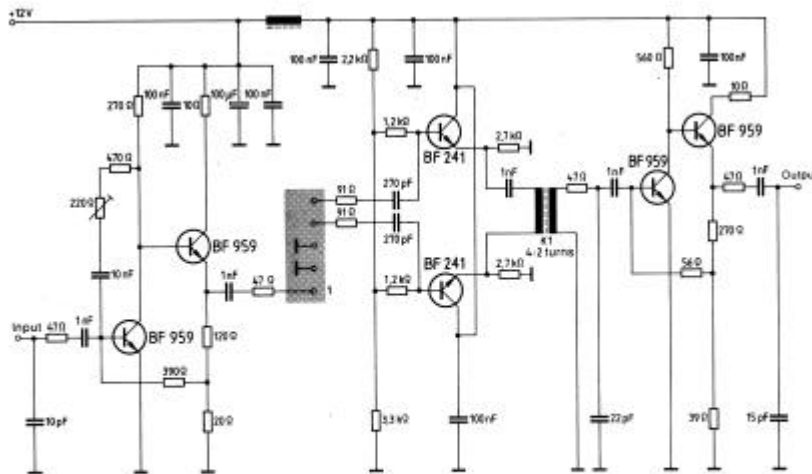
0: year(0,1,2,3,4,5,6,7,8,9)

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 range 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

Source impedance

$Z_s=50$

Load impedance

$Z_L=2k //3pF$

$T_A=25$

	Freq	min	typ	max	
Insertion attenuation Reference level	44.00MHz	13.2	14.7	16.2	dB
Pass bandwidth	B_{3dB}	-	6.0	-	MHz
	B_{30dB}	-	7.6	-	MHz
Relative attenuation	41.53MHz	-	0.4	-	dB
	46.59MHz	-	0.4	-	dB
	41.06MHz	1.8	3.0	4.2	dB
	47.06MHz	1.5	2.7	3.9	dB
	47.31MHz	-	6.2	-	dB
Sidelobe	35.06~40.06MHz	35.0	40	-	dB
	48.06~55.06MHz	35.0	40	-	dB
Temperature coefficient		-72			ppm/K

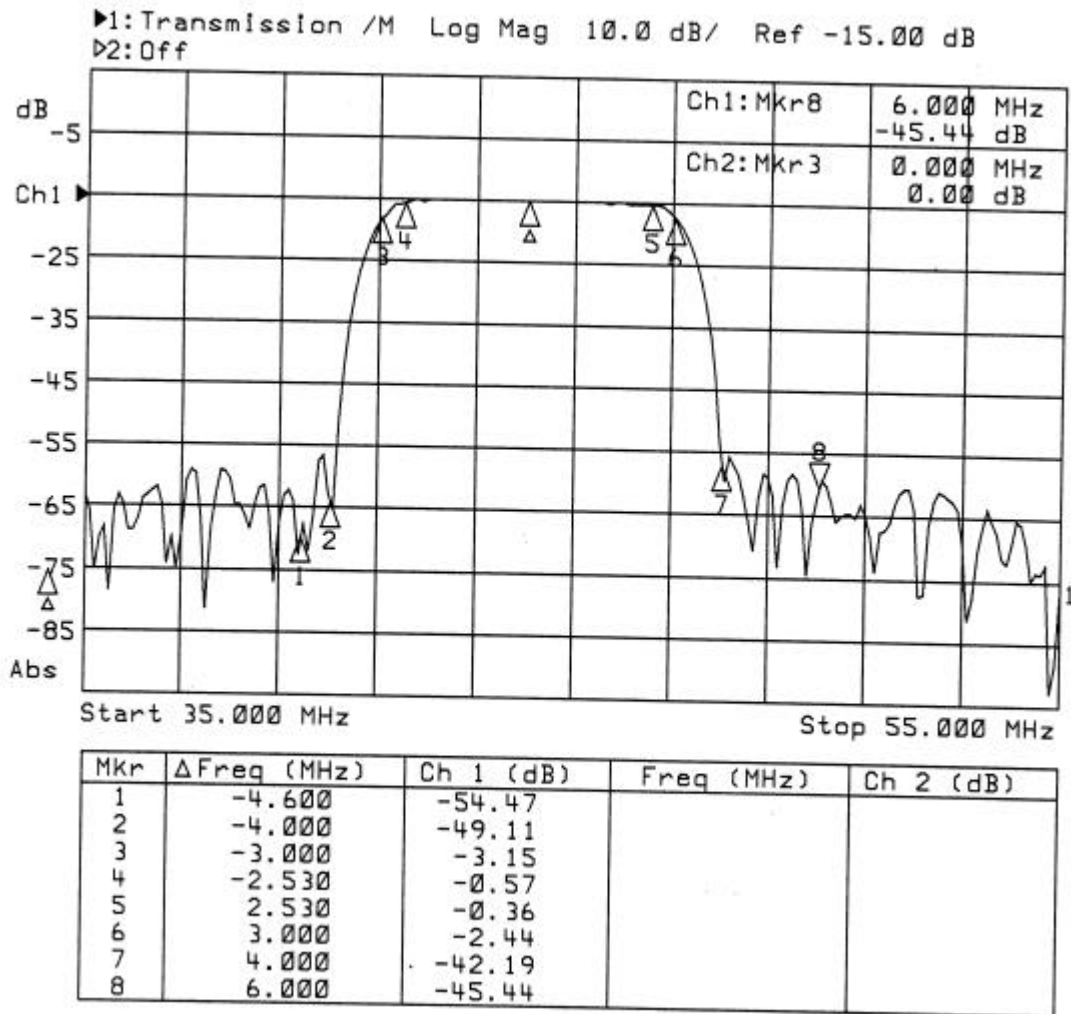
3.3 Environmental Performance Characteristics

Item Test condition	Allowable change of absolute Level at center frequency(dB)
High temperature test 70 500H	< 1.0
Low temperature test -40 500H	< 1.0
Humidity test 40 90-95% 500H	< 1.0
Thermal shock -20 ==25 ==80 5 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

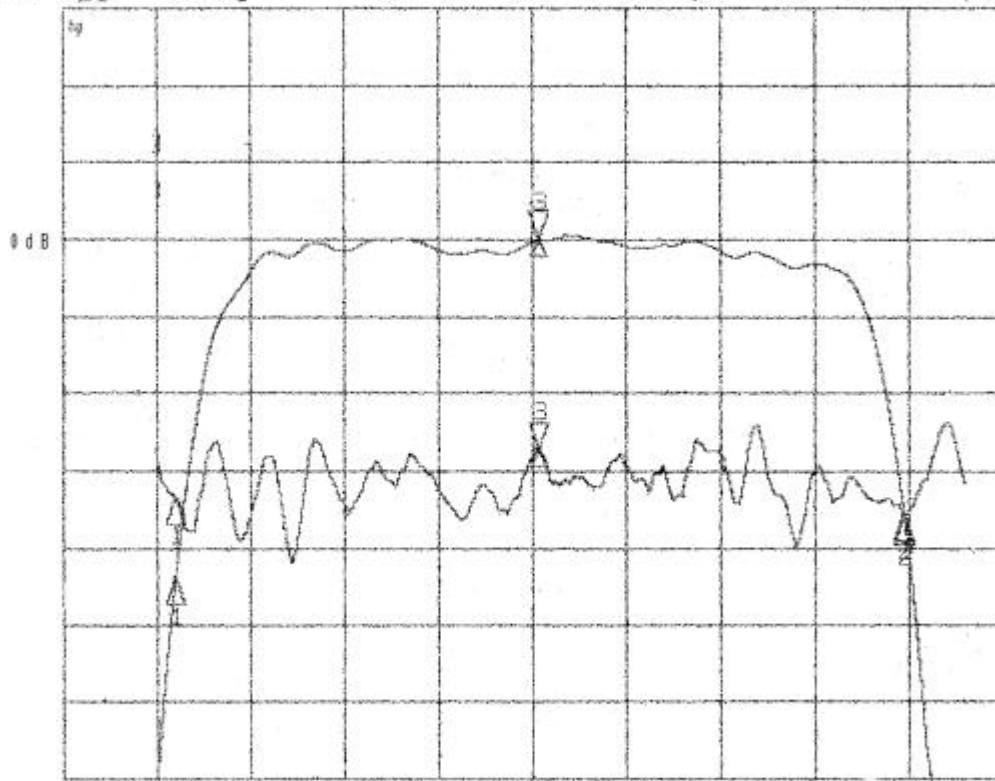
3.4 Mechanical Test

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 Frequency response

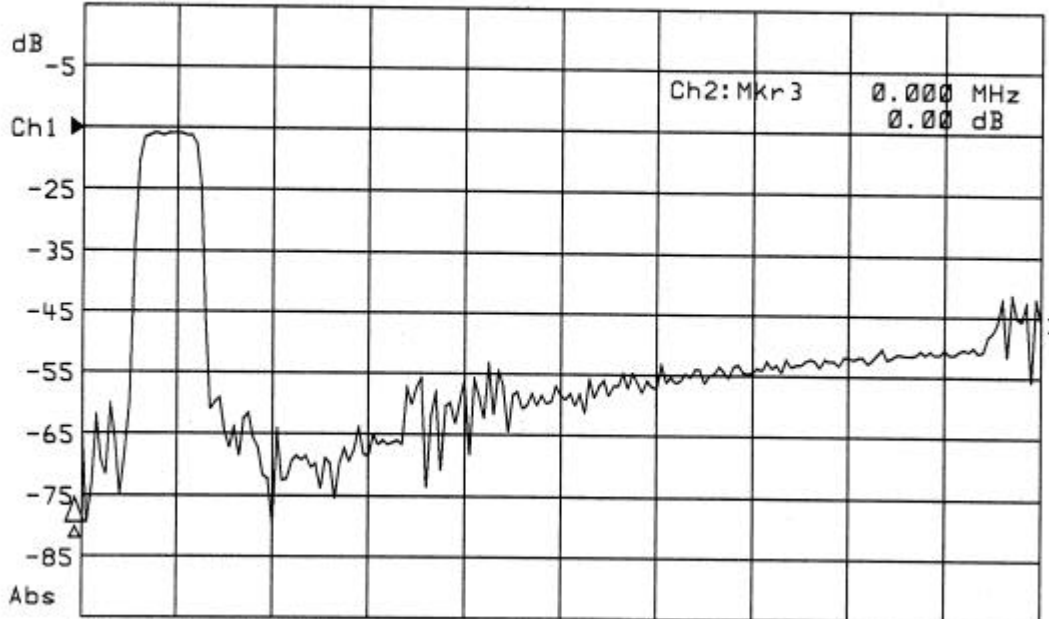


CH1 S21 log MAG 1 dB/ REF -14.81 dB Δ: -0010 dB
 CH2 S21 delay 30 ns/ REF 1.302 μs Δ: -119.37 ps



START 40.000 000 MHz STOP 48.000 000 MHz

►1: Transmission /M Log Mag 10.0 dB/ Ref -15.00 dB
 ►2: Off



Start 35.000 MHz

Stop 135.000 MHz