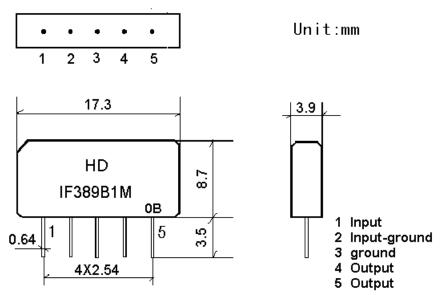
1.SCOPE

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.

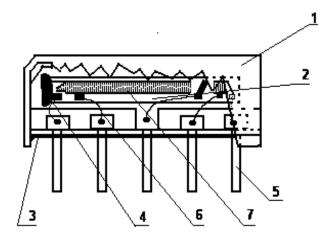
2.Construction

2.1 Dimension and materials

Manufacturer's name : HAODA ELECTRONICS Co. LTD(CHINA) Type : IF389B1M

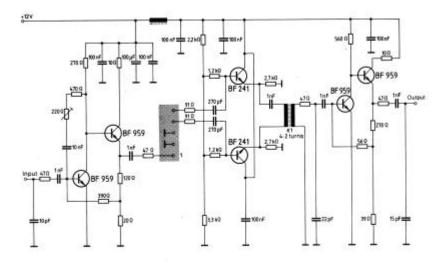


0: year(0,1,2,3,4,5,6,7,8,9) B:product in this quarter(A:1~3,B:4~6,C:7~9,D:10~12)



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	AI

2.2. Circuit construction, measurement circuit



Test circuit for SIP-5 filter Input impedance of the symmetrical post-amplifier: 2 k Ω 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

<u>Reference temperature</u> +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 impeda	ance	Zs=50				
Load impedan	nce	ZL=2k	//3pF		TA	=25
Item	S	Freq	Min	typ	max	
Insertion att Reference		37.4MHz	16.1	17.6	19.1	dB
		38.9MHz	4.2	5.7	7.2	dB
			2.3	3.8	5.3	dB
Relative attenuation		32.4MHz	18.8	20.3	-	dB
		33.4MHz	19.4	20.9	-	dB
		30.9MHz	44.0	58		dB
			42.0	52		dB
		41.4MHz	42.0	50		dB
		30.90MHz	35.0	45		dB
Sidelobe	40.40~	45.00MHz	35.0	42		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	Allowable change of absolute
Test condition	Level at center frequency(dB)
Vibration test	
600-3300rpm amplitude 1.5mm	<1.0
3 directions 2 H each	
Drop test	<1.0
On maple plate from 1 m high 3 times	<1.0
Lead pull test	<1.0
Pull with 1 kg force for 30 seconds	<1.0

Lead bend test 90° bending with 500g weigh 2 times 3.5 Voltage Discharge Test	<1.0
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Surge test Between any two electrode $\begin{array}{c} & & \\ & & \\ & & \\ & & \\ \hline \\ 100V \end{array} \begin{array}{c} & & \\ & & \\ \hline \\ 1000pF \end{array} \begin{array}{c} & & \\ $	<1.0

3.6 Frequency response

