

规格书编号

SPEC NO :

产品规格书

SPECIFICATION

CUSTOMER 客 户: _____

PRODUCT 产 品: _____ SAW FILTER _____

MODEL NO 型 号: _____ HDMIF389A7Dc SIP5Dc _____

PREPARED 编 制: _____ CHECKED 审 核: _____

APPROVED 批 准: _____ D A T E 日 期: _____ 2008-4-9 _____

客户确认 CUSTOMER RECEIVED:		
审核 CHECKED	批准 APPROVED	日期 DATE

无锡市好达电子有限公司
Shoulder Electronics Limited

更改历史记录 History Record

[illegible]

1.SCOPE

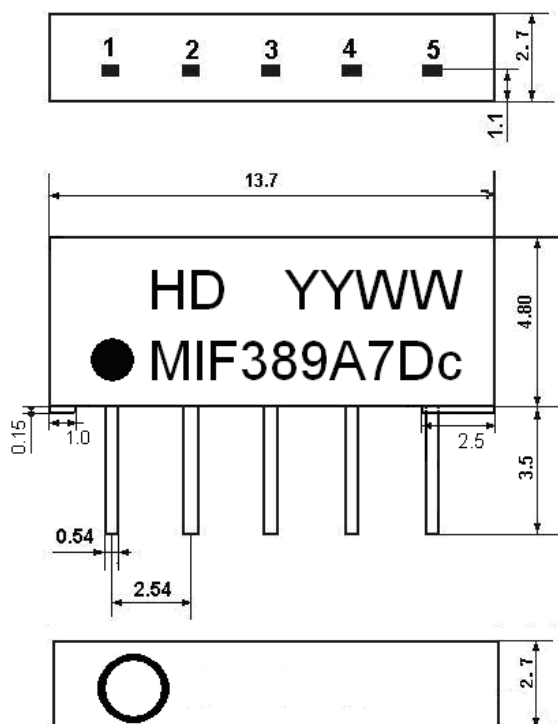
SHOULDER's SAW filter series have broad line up products meeting all broadcast standard including NTSC,PAL and SECAM systems. These filters are composed of two interdigital transducers on a single-crystal, piezoelectrical chip. they are used in electronic equipments such as TV and so on.

2.Construction

2.1 Dimension and materials

Manufacturer's name : SHOULDER ELECTRONICS LTD(CHINA)

Type : MIF389A7Dc

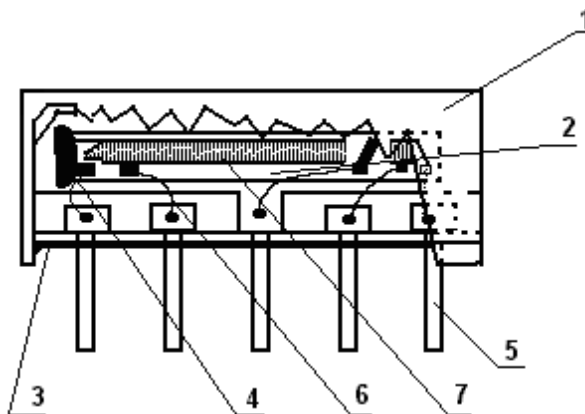


Unit : mm

- 1 Input
- 2 Switching Input
- 3 Chip carrier - ground
- 4 Output
- 5 Output

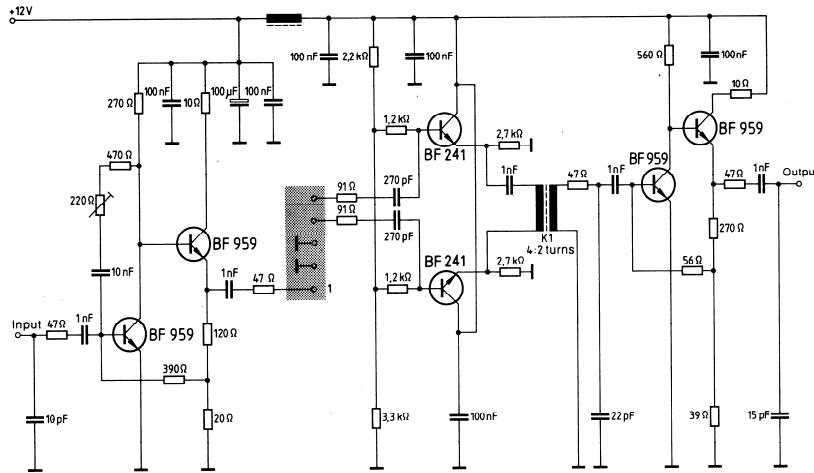
YY:year

WW:week



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

Items	Conditions	Specifications
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	There shall be no damage.
Operating temperature rang	Operating temperature rang is the rang of ambient temperatures in which the filter can be operated continuously. -20℃ ~ +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℃ ~ +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 in B/G/L/L' mode (switching input pin 2 connected to ground pin 3)

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	37.40MHz	15.4	16.9	18.4	dB
Relative attenuation	38.90MHz	4.6	5.6	6.6	dB
	34.47MHz	0.2	1.2	2.2	dB
	32.40MHz	17.7	19.2	20.7	dB
	33.40MHz	16.0	17.5	-	dB
	30.90MHz	46.0	58.0	-	dB
	31.90MHz	38.0	50.0	-	dB
	40.40MHz	41.0	50.0	-	dB
	41.40MHz	40.0	46.0	-	dB
Sidelobe	25.00~30.90MHz	36.0	42.0		dB
	40.40~45.00MHz	33.0	39.0		dB
Reflected wave signal suppression 1.3 μ s...6.0 μ s after main pulse (test pulse 250ns carrier frequency 37.40MHz)		42.0	50.0	-	dB
Feedthrough signal suppression 1.2 μ s...1.1 μ s before main pulse (test pulse 250ns carrier frequency 37.40MHz)		-	56.0	-	dB
Group delay predistortion (reference frequency 38.90MHz)					
36.80 MHz		-	-40	-	ns
34.47 MHz		-	50	-	ns
Temperature coefficient		-72			ppm/k

Characteristics in M/N mode (switching input pin 2 connected to input pin 1)

Source impedance

 $Z_s=50\ \Omega$

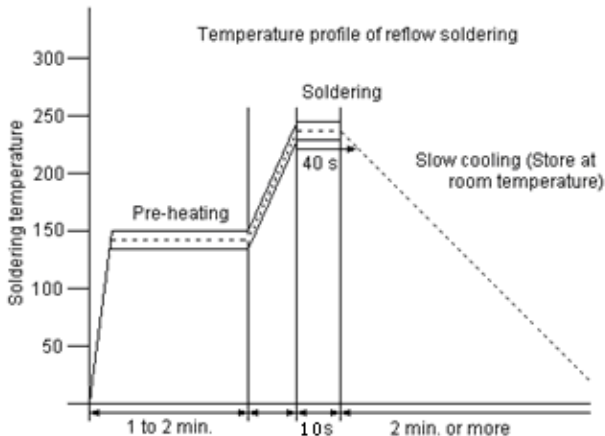
Load impedance

 $Z_L=2k\ \Omega //3pF$
 $T_A=25^\circ C$

Item		Freq	min	Typ	max	
Insertion attenuation Reference level		37.40MHz	15.5	17.0	18.5	dB
Relative attenuation		38.90MHz	4.9	5.9	6.9	dB
		35.32MHz	0.8	1.8	2.8	dB
		34.40MHz	17.0	18.5	20.0	dB
		32.90MHz	40.0	52.0	-	dB
		40.40MHz	41.0	49.0	-	dB
Sidelobe	25.00~32.90MHz		36.0	42.0		dB
	40.40~45.00MHz		31.0	37.0		dB
Reflected wave signal suppression 1.3 μ s...6.0 μ s after main pulse (test pulse 250ns carrier frequency 37.40MHz)			42.0	52.0	-	dB
Feedthrough signal suppression 1.2 μ s...1.1 μ s before main pulse (test pulse 250ns carrier frequency 37.40MHz)			-	50.0	-	dB
Group delay ripple (p-p)			-	50	-	ns
Temperature coefficient			-72			ppm/k

3.3 Environmental Performance Characteristics

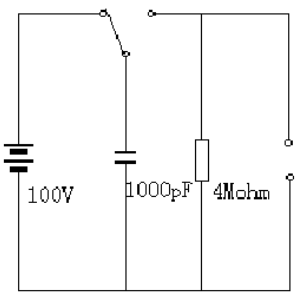
Item	Condition	Specifications
High temperature	The specimen shall be store at a temperature of $80\pm2^\circ C$ for $96\pm4h$. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	Mechanical characteristics and specifications in electrical characteristics shall be satisfied. There shall be no excessive change in appearance.
Low temperature	The specimen shall be store at a temperature of $-20\pm3^\circ C$ for $96\pm4h$. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	
Humidity	The specimen shall be store at a temperature of $40\pm2^\circ C$ with relative humidity of 90% to 96% for $96\pm4h$. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h.	
Thermal	The specimen shall be subjected to 8 continuous	

shock	cycles each as shown below. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurement shall be made within 1h. <table border="1"> <thead> <tr> <th></th><th>Temperature</th><th>Duration</th></tr> </thead> <tbody> <tr> <td>1</td><td>+25 °C=>-40 °C</td><td>0.5h</td></tr> <tr> <td>2</td><td>-40 °C</td><td>4h</td></tr> <tr> <td>3</td><td>-40 °C=>+85 °C</td><td>2h</td></tr> <tr> <td>4</td><td>+85 °C</td><td>4h</td></tr> <tr> <td>5</td><td>+85 °C=>+25 °C</td><td>0.5h</td></tr> <tr> <td>6</td><td>+25 °C</td><td>1h</td></tr> </tbody> </table>		Temperature	Duration	1	+25 °C=>-40 °C	0.5h	2	-40 °C	4h	3	-40 °C=>+85 °C	2h	4	+85 °C	4h	5	+85 °C=>+25 °C	0.5h	6	+25 °C	1h	
	Temperature	Duration																					
1	+25 °C=>-40 °C	0.5h																					
2	-40 °C	4h																					
3	-40 °C=>+85 °C	2h																					
4	+85 °C	4h																					
5	+85 °C=>+25 °C	0.5h																					
6	+25 °C	1h																					
Resistance to Soldering heat	Reflow soldering method Peak: 255 ±5 °C, 220 ±5 °C, 40s At electrode temperature of the specimen.  The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.																						
Solder ability	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

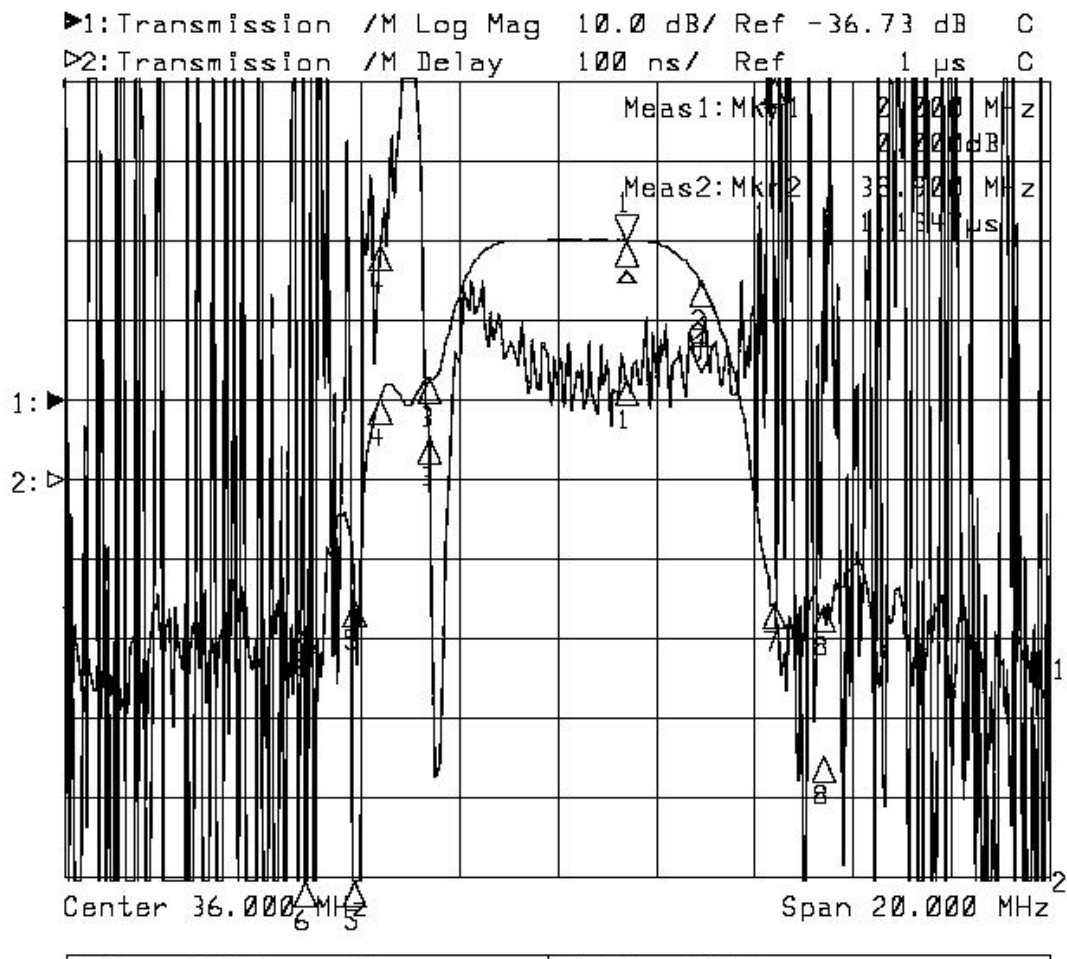
Items	Conditions	Specifications
Vibration	600-3300rpm amplitude 1.5mm 3 directions 2 H each	There shall be no damage.
Drop	On maple plate from 1 m high 3 times	
Lead pull	Pull with 1 kg force for 30 seconds	
Lead bend	90° bending with 500g weigh 2 times	

3.5 Voltage Discharge Test

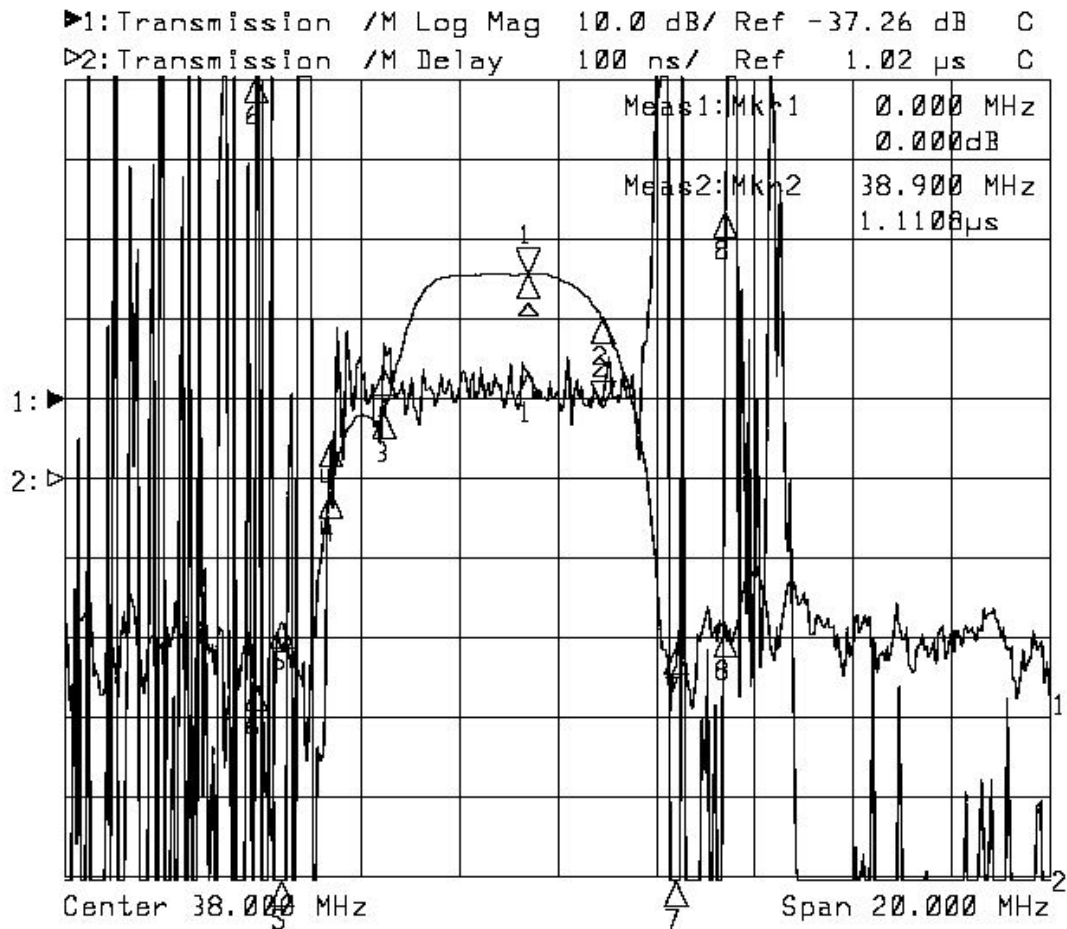
Item	Condition	Specifications
Surge	Between any two electrode 	There shall be no damage

3.6 Frequency response

Frequency response in D/K, B/G mode



Frequency response in M/N mode



1: Mkr (MHz)	dB	2: Mkr (MHz)	s
1> 0.0000	0.000	1: 37.4000	1.1518 μ
2: 1.5000	-5.513	2> 38.9000	1.1108 μ
3: -2.9300	-17.523	3: 34.4700	1.1585 μ
4: -4.0000	-27.463	4: 33.4000	1.0671 μ
5: -5.0000	-43.739	5: 32.4000	513.73n
6: -5.5000	-51.596	6: 31.9000	1.9905 μ
7: 3.0000	-46.975	7: 40.4000	-16.098n
8: 4.0000	-44.963	8: 41.4000	1.3562 μ