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SPECIFICATION

PRODUCT: SAW FILTER

MODEL: HDMIF389A1T



SHOULDER ELECTRONICS LIMITED

1.SCOPE

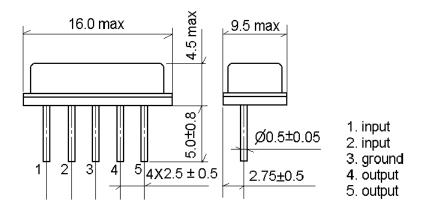
SHOULDER'S SAW filter series have broad line up products meeting all broadcast standard including NTSC,PAL and SECAM systems. These filters are composed of two interdigital transducers on a single-crystal. piezoelectrical chip. they are used in electronic equipments such as TV and so on.

2.Construction

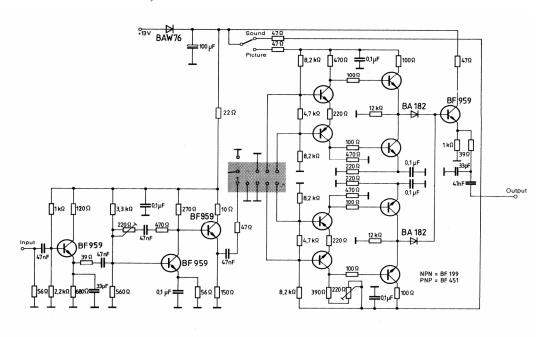
2.1 Dimension and materials

Manufacturer's name: SHOULDER ELECTRONICS Co. LTD(CHINA)

Type: MIF389A1T



2.2. Circuit construction, measurement circuit



Test circuit for DIP-10 filter Input impedance of the symmetrical post-amplifier: 2 k Ω in parallel with 5 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°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. $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$	There shall be no damage.
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. $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$	
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 M/N mode (switching input pin 2 connected to input 1)

Source impedance $Z_S=50 \Omega$

Load impedance $Z_L=2k \Omega //3pF$ $T_A=25 ^{\circ}C$

Zoud impedance ZL Zi		r == // 5 P1			1 A 20 0	
Item		Freq	min	typ	max	
Insertion attenuation Reference level		37.40MHz	14.3	16.3	18.3	dB
		38.90MHz	4.2	5.7	7.2	dB
	Relative attenuation		0.1	1.6	3.1	dB
Relative att			15.6	17.6	19.6	dB
		32.90MHz	42.0	51.0	-	dB
		40.40MHz	40.0	47.0	-	dB
Sidelobe	25.00~	32.90MHz	35.0	44.0		dB
Sidelobe	40.40~	45.00MHz	35.0	43.0		dB
Temperature coefficient			-72		ppm/k	

Characteristics in B/G mode (switching input pin 2 connected to ground) $\,$

Source impedance $Z_S=50 \Omega$

Load impedance $Z_L=2k\ \Omega\ //3pF$ $T_A=25\ ^{\circ}C$

Iten	1	Freq	min	Тур	max	
Insertion att Reference		37.40MHz	14.5	16.5	18.5	dB
		38.90MHz	4.1	5.6	7.1	dB
		34.47MHz	-1.3	0.2	1.7	dB
Relative att	Relative attenuation		15.7	17.7	19.2	dB
Kelative att			14.5	16.5	18.5	dB
		30.90MHz	40.0	50.0	-	dB
		40.40MHz	40.0	48.0	-	dB
Sidelobe	25.00~	30.90MHz	35.0	44.0		dB
Sidelope	40.40~45.00MHz		32.0	39.0		dB
Temperature coefficient			-72		ppm/k	

3.3 Environmental Performance Characteristics

Item	Condition	1	Specifications	
High	The specimen shall be store	at a temperature of	_	
temperature	80 ± 2 °C for 96 ±4 h. Then it	for 96±4h. Then it shall be subjected to		
	standard atmospheric condi	d atmospheric conditions for 1h, after		
	which measurement shall be r	measurement shall be made within 1h.		
Low	The specimen shall be store	at a temperature of		
temperature	-20±3℃ for 96±4h. Then it	shall be subjected to		
	standard atmospheric condi	tions for 1h, after		
	which measurement shall be r	made within 1h.		
Humidity	The specimen shall be store	at a temperature of		
	40±2°C with relative humid	lity of 90% to 96%		
	for 96±4h. Then it shall be s	subjected to standard		
	atmospheric conditions for			
	measurement shall be made w	vithin 1h.	Mechanical	
Thermal	The specimen shall be subject	characteristics and		
shock	cycles each as shown below	specifications in		
	subjected to standard atmospheric conditions for the after which measurement shall be made characteristics shall			
	in, arter which measurement shall be made			
	within 1h.	shall be no		
	<u> </u>	Duration	excessive change in	
	120 0 1 20 0	0.5h	appearance.	
	2 -40 ℃	4h	иррешинее.	
	3 -40 °C=>+85 °C	2h		
	4 +85 °C	4h		
	5 +85 °C=>+25 °C	0.5h		
	6 +25 °C	1h		
Resistance to	Reflow soldering method			
Soldering heat	Peak: 255 ±5 °C, 220 ±5 °C, 40s			

pins should be			
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		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		300—	
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		200— 200— Pre-heating 150— 50— Pre-heating	
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 More then 95% of total area of the pins should be		1 to 2 min. 10s 2 min. or more	
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 More then 95% of total area of the pins should be			
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base epoxy resin. Solder ability Immerse the pins melt solder at 260°C+5/-0°C More then 95% of total area of the pins should be		atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be	
Solder ability Immerse the pins melt solder at 260°C+5/-0°C More then 95% of total area of the pins should be		1	
for 5 sec. total area of the pins should be			2.5
pins should be	Solder ability	1	
L COVERED WITH SOLDER		for 5 sec.	

3.4 Mechanical Test

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

3.5 Voltage Discharge Test

Item	Condition	Specifications
Surge	Between any two electrode	
	T100V 1000pF 4Mohm	There shall be no damage