Approved by:

Checked by:

Issued by:

SPECIFICATION

PRODUCT: SAW FILTER

MODEL: BF33A1M



SHOULDER ELECTRONICS LIMITED

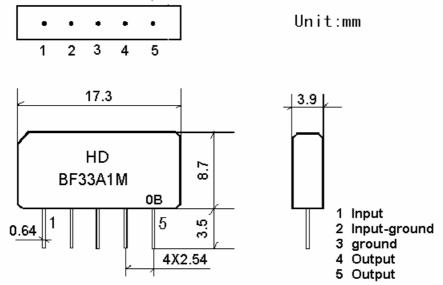
1.SCOPE

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.

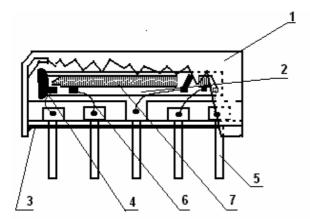
2.Construction

2.1 Dimension and materials

Manufacturer's name : HAODA ELECTRONICS Co. LTD(CHINA) Type : BF33A1M

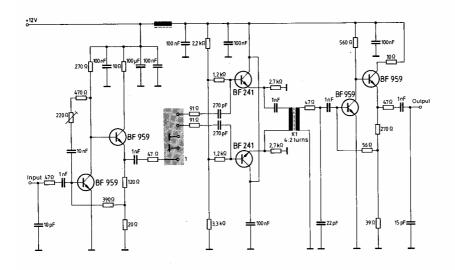


0: year(0,1,2,3,4,5,6,7,8,9) B:product in this quarter(A:1~3,B:4~6,C:7~9,D:10~12)



Components	Materials
1.Outer casing	PPS
2.Substrate	Lithium tantalate
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

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Source imp	edance	Zs=5	0			
Load imped	lance	$Z_L=2$	2k //3pF			T _A =25
Item	ı	Freq	min	typ	max	
Center free (center between		Fo	-	33.40	-	MHz
Insertion att Reference		33.4MHz	-	16.5	18.5	dB
Pass bandwidth		B3dB	-	0.5	-	MHz
1 455 04	IIuwiuui	B30dB	-	1.7	2.0	MHz
	25.00~31.00MHz		35.0	42.0		dB
Sidelobe 31.00~32.20		32.20MHz	32.0	40.0		dB
34.60~.	35.80MHz	32.0	40.0		dB	
	35.80~	45.00MHz	35.0	43.0		dB
Temperature coefficient			-18		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 testSold temp.260for 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	<1.0
90° bending with 500g weigh 2 times	<1.0

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3.5 Voltage Discharge Test

Item	Allowable change of absolute
Test condition	Level at center frequency(dB)
Surge test	
Between any two electrode	
100V 1000pF 4Mohm	<1.0