

Approved by:

Checked by:

Issued by:

# ***SPECIFICATION***

**PRODUCT: SAW FILTER**

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**MODEL: HPBF36A1D (X6966D)**

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**Shenzhen SCTF Electronics Co.,LTD.**

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## 1. SCOPE

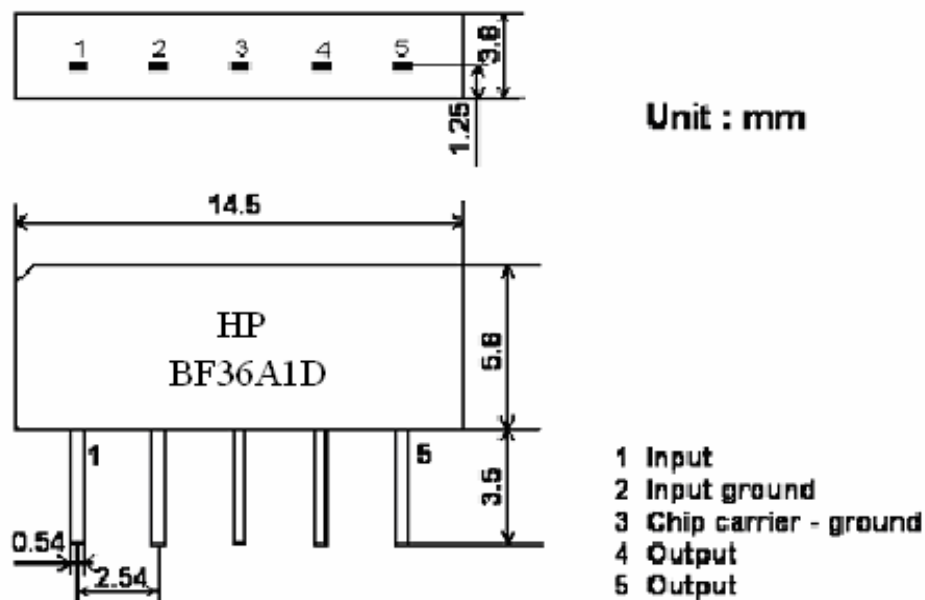
SCTF's SAW filter series have broad line up products meeting all broadcast standard including NTSC, PAL and SECAM systems. These filters are composed of two inter digital transducers on a single-crystal. Piezoelectrical chip. they are used in electronic equipments such as TV and so on.

## 2. Construction

### 2.1 Dimension and materials

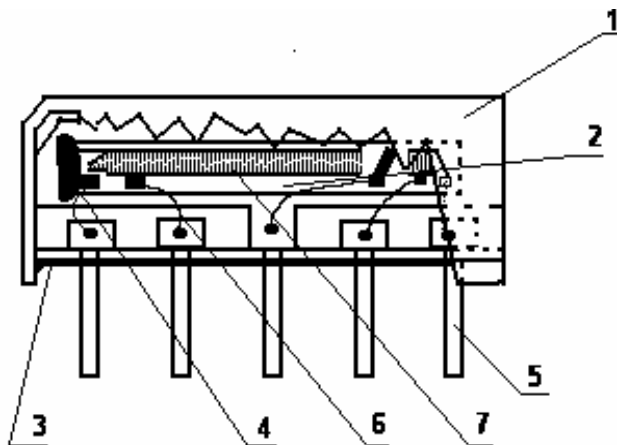
Manufacturer's name: Shenzhen SCTF Electronics Co., LTD.

Type : **HPBF36A1D**



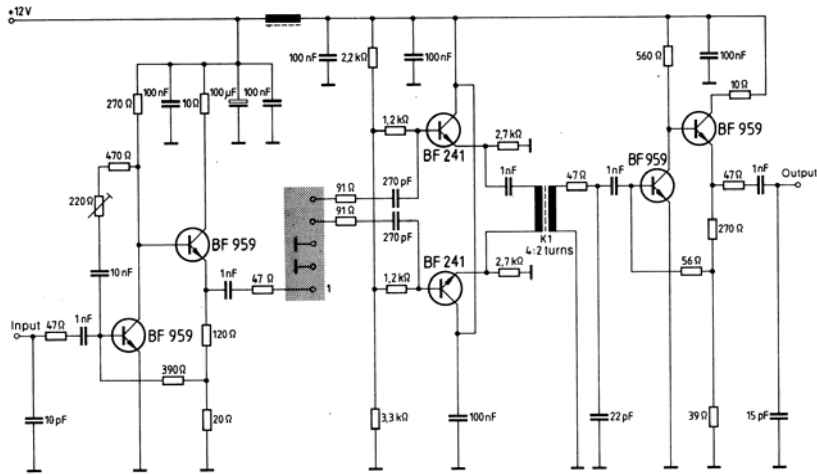
O: year (0,1,2,3,4,5,6,7,8,9)

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 kΩ 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°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°C ~ +60°C

### 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°C ~ +70°C

### Reference temperature +25°C

#### 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

 $Z_s=50\Omega$ 

Load impedance

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

Item	Freq	min	typ	max	
Center frequency	Fo	-	36.125	-	MHz
Insertion attenuation Reference level	36.125MHz	18.3	20.3	22.3	dB
Amplitude ripple: 32.65~39.60 MHz		-	0.6	1.2	dB
Pass bandwidth	B3dB	-	8.0	-	MHz
	B30dB	-	9.4	-	MHz
Relative attenuation	32.32MHz	-0.6	0.9	2.4	dB
	39.93MHz	-0.1	1.4	2.9	dB
	32.13MHz	0.9	2.7	4.5	dB
	31.25MHz	35.0	45.0	-	dB
	47.25MHz	40.0	52.0	-	dB
Side lobe	25.00~31.25MHz	30.0	40		dB
	40.90~50.00MHz	30.0	38		dB
Temperature coefficient			-72		ppm/k

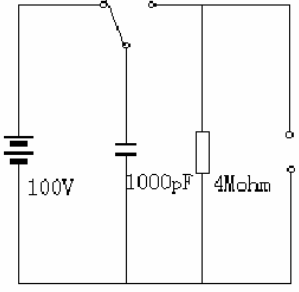
### 3.3 Environmental Performance Characteristics

Item Test condition	Allowable change of absolute Level at center frequency(dB)
High temperature test 70°C 1000H	< 1.0
Low temperature test -40°C 1000H	< 1.0
Humidity test 40°C 90-95% 1000H	< 1.0
Thermal shock -20°C==25°C==80°C 20 cycle 30M 10M 30M	< 1.0
Solder temperature test Sold temp.260°C for 10 sec.	< 1.0
Soldering 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

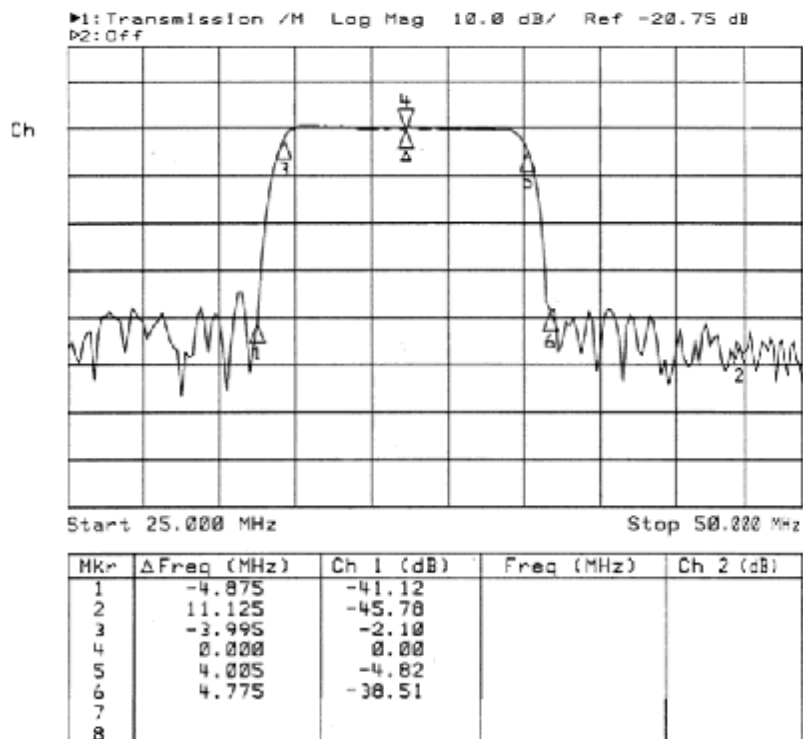
### 3.4 Mechanical Test

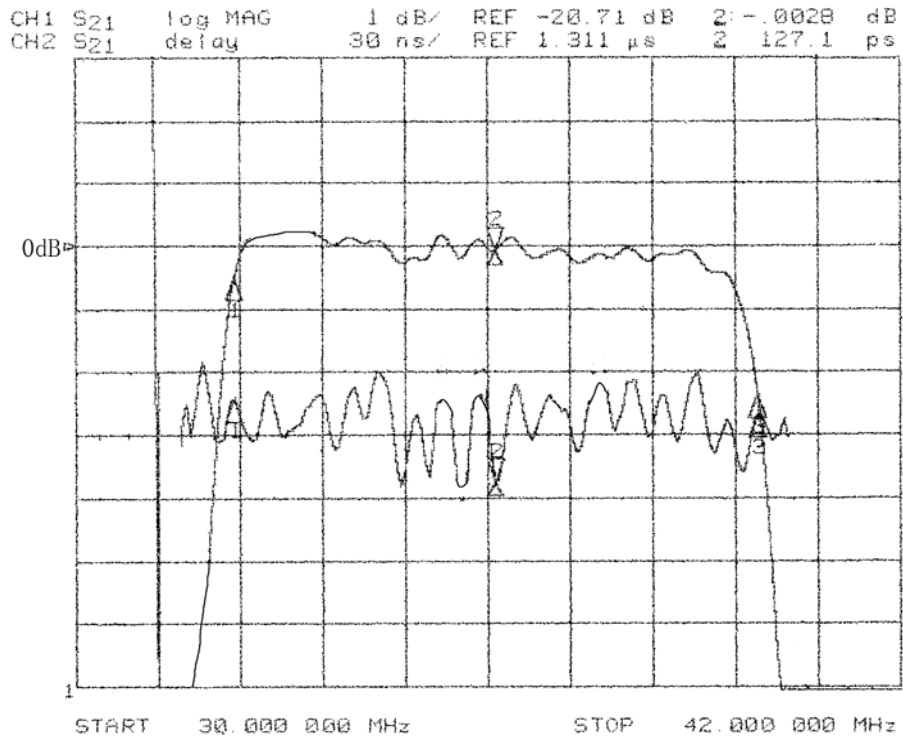
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90° bending with 500g weigh 2 times	<1.0

### 3.5 Voltage Discharge Test

Item Test condition	Allowable change of absolute Level at center frequency(dB)
Surge test Between any two electrode  	<1.0

### 3.6 Frequency response





►1: Transmission /M Log Mag 10.0 dB/ Ref -21.32 dB

