



Approved by:
Checked by:
Issued by:

# SPECIFICATION

PRODUCT: SAW FILTER

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MODEL: HB3622S (X7251N) SMD

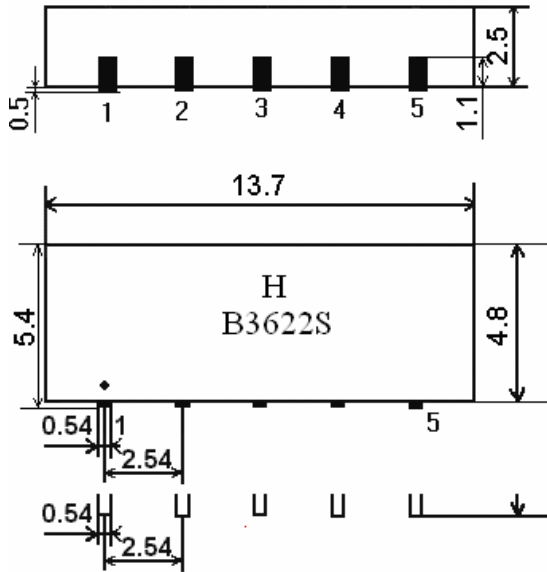
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**HOPE MICROELECTRONICS CO., LIMITED**

# 1. Construction

## 1.1 Dimension and materials

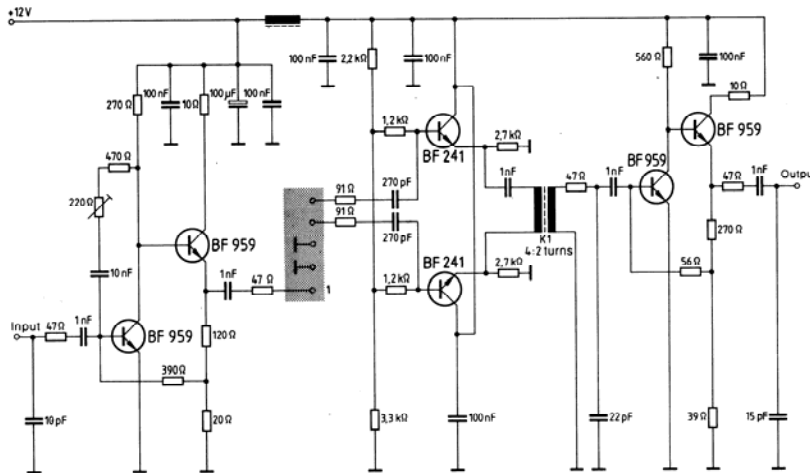
Type : B3622S



Unit : mm

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

## 1.2. Circuit construction, measurement circuit



Test circuit for SIP-5 filter  
Input impedance of the symmetrical post-amplifier: 2 kΩ in parallel with 3 pF

# 2.Characteristics

## Standard atmospheric conditions

Unless otherwise specified , the standard range 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.  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$

### 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  $+25^{\circ}\text{C}$

## 2.1 Maximum Rating

<b>DC voltage</b>	<b>VDC</b>	<b>12</b>	<b>V</b>	<b>Between any terminals</b>
<b>AC voltage</b>	<b>Vpp</b>	<b>10</b>	<b>V</b>	<b>Between any terminals</b>

## 2.2 Characteristics of channel 1 (switching input pin 2 connected to pin 3)

Source impedance  $Z_s=50\ \Omega$

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

Item	Freq	min	typ	max	
<b>Center frequency</b>	$F_0$	-	36.17	-	MHz
<b>Insertion attenuation</b> Reference level	36.17MHz	19.0	21.0	23.0	dB
<b>Pass bandwidth</b>	B1.5dB	7.4	7.7	8.0	MHz
	B3dB	7.7	8.0	8.3	MHz
	B10dB	8.6	8.9	9.2	MHz
	B30dB	8.8	9.4	10.0	MHz
<b>Sidelobe</b>	25.00~31.15MHz	33.0	40.0	-	dB
	41.15~42.0MHz	31.0	36.0	-	dB
	42.00~45.00MHz	34.0	41.0	-	dB
<b>Reflected wave signal suppression</b> 1.2 us ... 6.0 us after main pulse (test pulse 250 ns , carrier frequency 36.17 MHz)		42.0	50.0		dB
<b>Group delay ripple (p-p)</b> 32.25~40.05 MHz		-	50	-	ns
<b>Temperature coefficient</b>			-72		ppm/k

**Characteristics of channel 2 (switching input pin 2 connected to 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	
<b>Center frequency</b>	Fo	-	36.17	-	MHz
<b>Insertion attenuation</b> Reference level	36.17MHz	19.0	21.0	23.0	dB
<b>Pass bandwidth</b>	B1.5dB	6.4	6.7	7.0	MHz
	B3dB	6.7	7.0	7.3	MHz
	B10dB	7.7	8.0	8.3	MHz
	B30dB	7.9	8.5	9.1	MHz
<b>Sidelobe</b>	25.00~31.55MHz	33.0	40.0	-	dB
	40.75~45.00MHz	31.0	36.0	-	dB
<b>Reflected wave signal suppression</b> 1.2 us ... 6.0 us after main pulse (test pulse 250 ns , carrier frequency 36.17 MHz)		42.0	50.0		dB
<b>Group delay ripple (p-p)</b> 32.75~39.55 MHz		-	50	-	ns
<b>Temperature coefficient</b>			-72		ppm/k

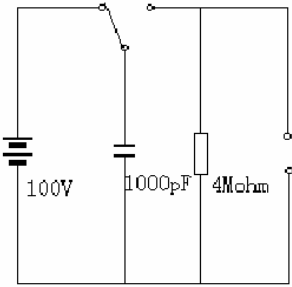
**2.3 Environmental Performance Characteristics**

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

### 2.4 Mechanical Test

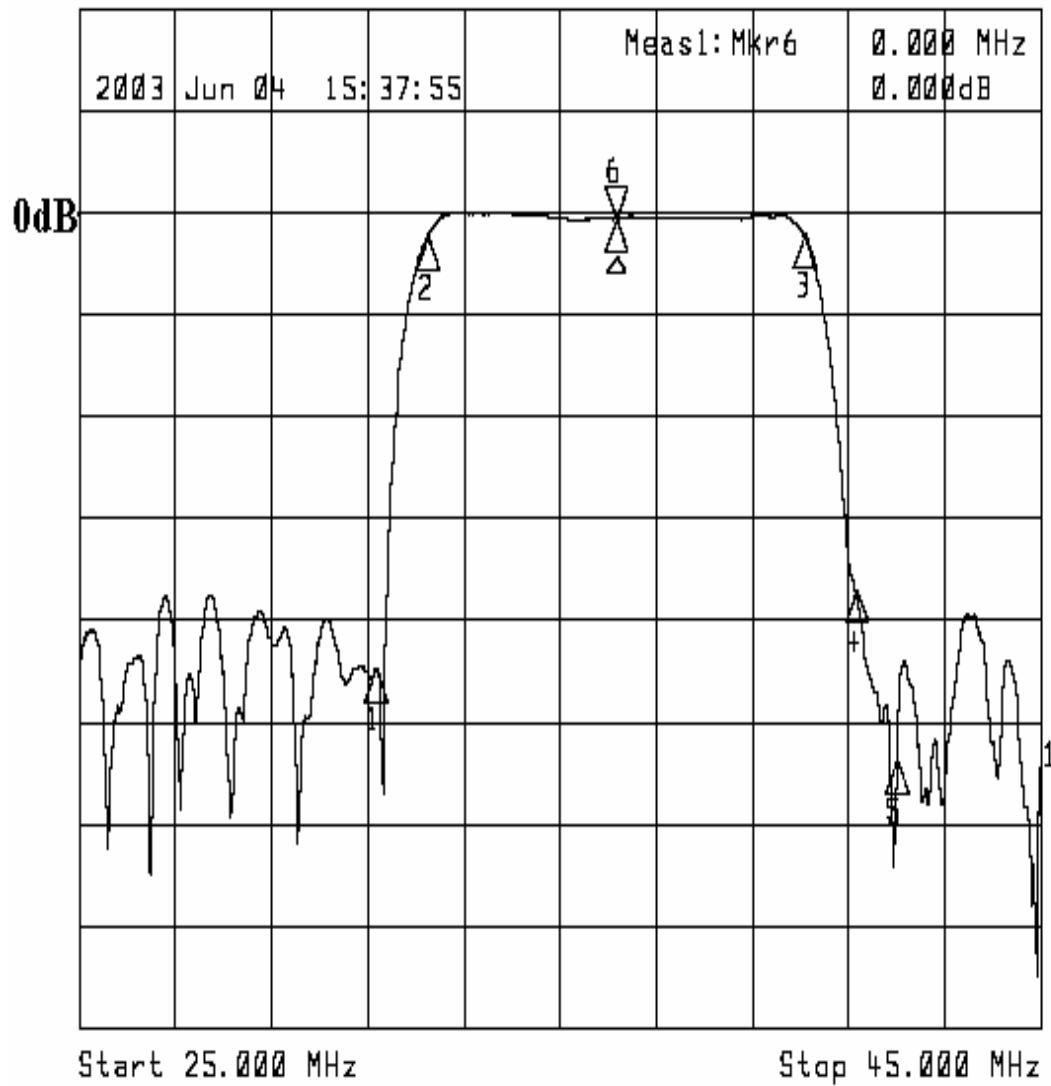
Item Test condition	Allowable change of absolute Level at center frequency(dB)
Vibration test 600-3300rpm amplitude 1.5mm 3 directions 2 H each	<1.0
Drop test On maple plate from 1 m high 3 times	<1.0
Lead pull test Pull with 1 kg force for 30 seconds	<1.0
Lead bend test 90° bending with 500g weigh 2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

### 2.5 Voltage Discharge Test

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

## 2.6 Frequency response of channel 1:

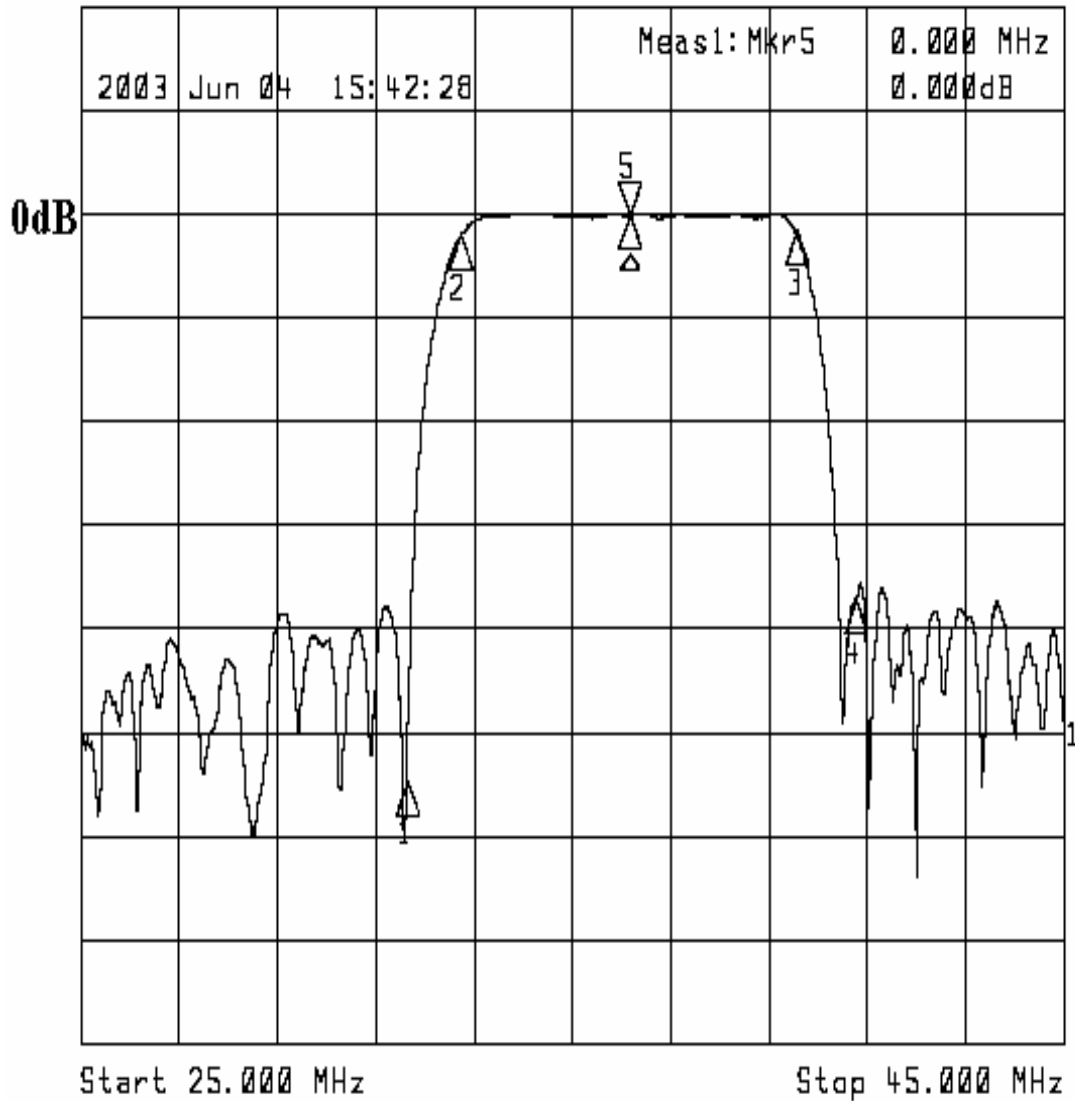
►1:Transmission /M Log Mag 10.0 dB/



1: Mkr Δ (MHz)	dB	2: Mkr (MHz)	dB
1:	-5.0200	-44.327	
2:	-3.9200	-1.771	
3:	3.8800	-1.557	
4:	4.9800	-36.572	
5:	5.8300	-53.315	
6>	0.0000	0.000	

**Frequency response of channel 2:**

►1: Transmission /M Log Mag 10.0 dB/



1: Mkr Δ (MHz)	dB	2: Mkr (MHz)	dB
1:	-4.5200	-54.774	
2:	-3.4400	-1.854	
3:	3.3800	-1.524	
4:	4.5800	-37.183	
5:	0.0000	0.000	