



Approved by:

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# SPECIFICATION

PRODUCT: SAW FILTER

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MODEL: HB3612N (X6872D) SMD

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**HOPE MICROELECTRONICS CO.,LIMITED**

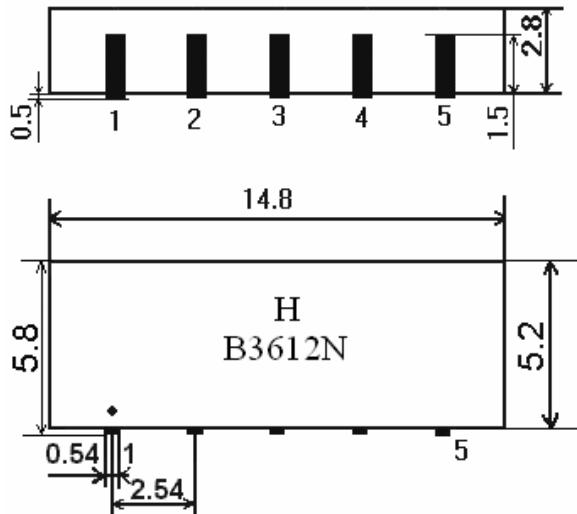
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## 1. Construction

### 1.1 Dimension and materials

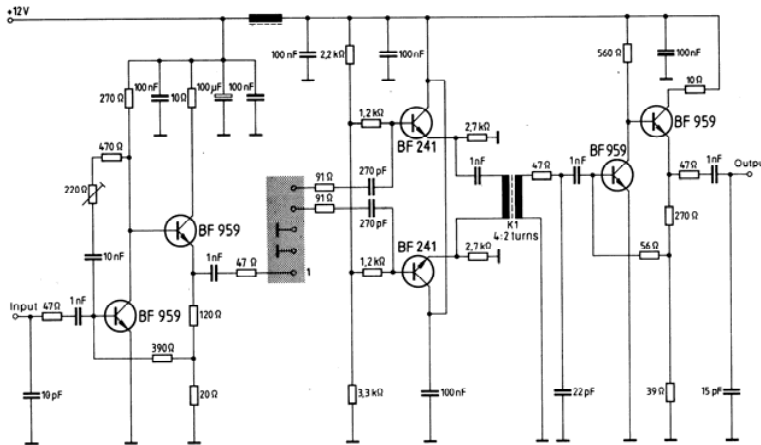
Type : B3612N



Unit : mm

- 1 Input
- 2 Input ground
- 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 Electrical Characteristics

Source impedance  $Z_s=50\ \Omega$

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

Item	Freq	min	typ	max	
<b>Center frequency</b>	Fo	-	36.125	-	MHz
<b>Insertion attenuation</b> Reference level	36.13MHz	18.0	20.0	22.0	dB
<b>Pass bandwidth</b>	B <sub>3dB</sub>	-	6.9	-	MHz
	B <sub>30dB</sub>	-	8.5	-	MHz
<b>Relative attenuation</b>	33.08MHz	-	0.5	-	dB
	39.17MHz	-	0.6	-	dB
	32.63MHz	-	3.6	-	dB
	39.63MHz	-	3.8	-	dB
<b>Sidelobe</b>	25.00~31.65MHz	35.0	46.0	-	dB
	40.65~45.00MHz	34.0	42.0	-	dB
<b>Reflected wave signal suppression</b> 1.2 us ... 6.0 us after main pulse (test pulse 250 ns , carrier frequency 36.13 MHz)		42.0	52.0		dB
<b>Feedthrough signal suppression</b> 1.3 us ... 1.2 us before main pulse (test pulse 250 ns , carrier frequency 36.13 MHz)		45.0	54.0		dB
<b>Group delay ripple (p-p)</b> 32.63 ~ 39.63 Mhz		-	50	-	ns
<b>Impedance at 36.13 Mhz</b>		-	-	-	-
Input: $Z_{in} = R_{in} // C_{in}$		-	3.4//13.3	-	k $\Omega$ // pF
Output: $Z_{in} = R_{in} // C_{in}$		-	2.2//4.3	-	k $\Omega$ // pF
<b>Temperature coefficient of frequency</b>			-72		ppm/k

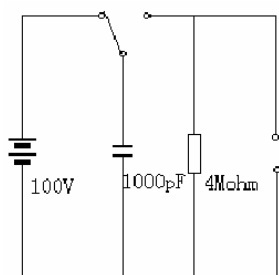
### 2.3 Environmental Performance Characteristics

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:

