



### Features

- ◇ For IF SAW filter
- ◇ Ceramic Surface Mount Package
- ◇ Small size
- ◇ RoHS compliant (2002/95/EC), Pb-free
- ◇ Single-ended operation

### Specifications

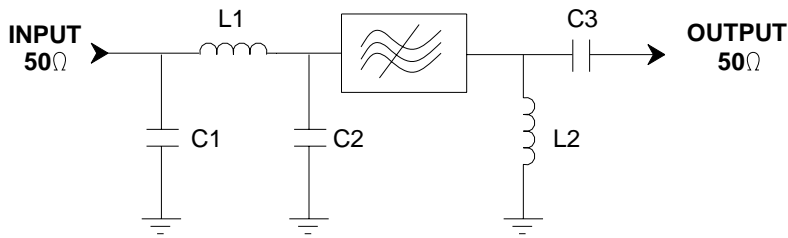
Parameter	Unit	Minimum	Typical	Maximum
Center Frequency	MHz	-	165	-
Insertion Loss	dB	-	9.4	10
1 dB Bandwidth	MHz	20	21.42	-
Passband Variation( $f_0 \pm 10\text{MHz}$ )	dB	-	0.7	1.2
Group Delay Variation( $f_0 \pm 10\text{MHz}$ )	nsec	-	50	80
Absolute Delay	usec	-	0.34	0.4
Input/Output return loss	-	5	7.2/6.2	-
Ultimate Rejection	10~110MHz	dB	35	-
	127~149MHz	dB	10	-
	190~450MHz	dB	33	-
Material Temperature coefficient	KHz/°C	-15.51		
Substrate Material	-	YZ LN		
Ambient Temperature	°C	25		
Operating Temperature Range	°C	-40	-	+85
Storage Temperature Range	°C	-45	-	+105
DC Voltage	V	0		
Input Power	dBm	-	-	25
ESD Class	-	1A		
Package Size	SMD3.8*3.8			

#### Notes:

1. All specifications are based on the test circuit shown;
2. In production, all specifications are measured by Agilent Network analyzer and full 2 port calibration at room temperature;
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances;
4. This is the optimum impedance in order to achieve the performance show.

	<b>SIPAT Co., Ltd.</b> ( CETC No.26 Research Institute ) #14 Nanping Huayuan Road, Chongqing, China, 400060	Part Number	LBN16504	
		Rev. Date	2010-03-31	
		Ver.	3.0	Page 1/3

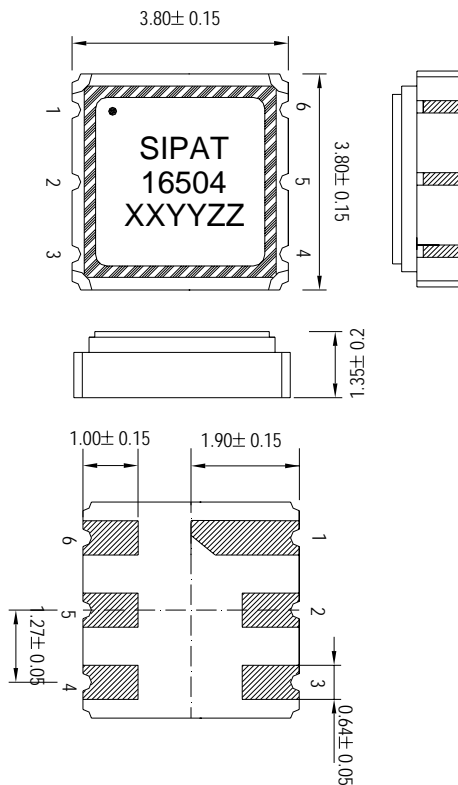
### Matching Configuration



**L1=150nH L2=68nH**  
**C1=15pF C2=1pF C3=6.8pF**  
**Source/Load Impedance=50 ohm**

Notes - Component values may change depending  
on board layout.

### Package Dimension



#### Pad Configuration:

Input 2  
Output 5  
Ground All Others

#### Marking Configuration:

- 1) •: Pad Number 1 Index
- 2) SIPAT: Manufacturer Name
- 3) 16504: Part Number
- 4) XXYY: Batch No.(Year/Month)
- 5) ZZ: Identifying Code

**Package: SMD3.8\*3.8**

**Unit: mm**

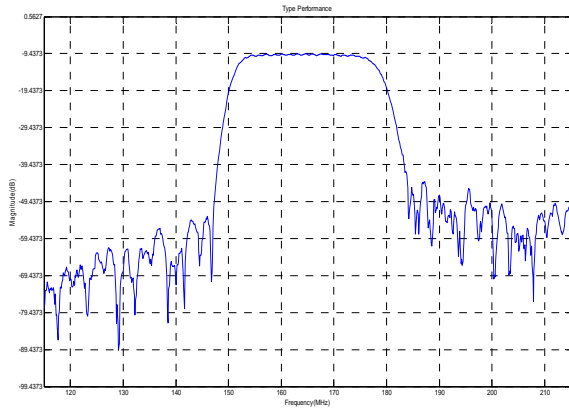


**SIPAT Co., Ltd.**  
( CETC No.26 Research Institute )  
#14 Nanping Huayuan Road,  
Chongqing, China, 400060

Part Number	LBN16504	
Rev. Date	2010-03-31	
Ver.	3.0	Page 2/3

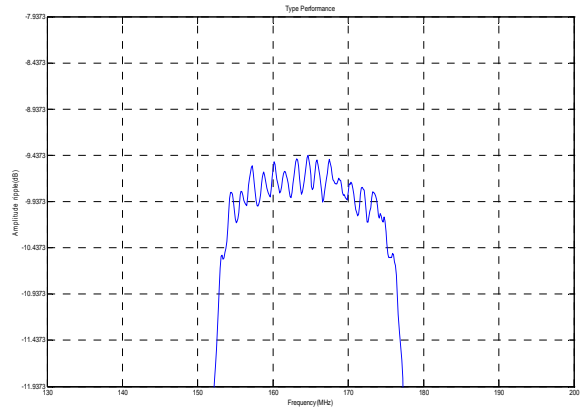
*Typical Performance*

Frequency Respond



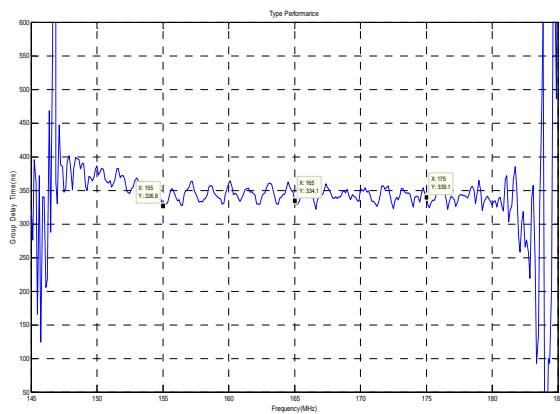
Horizontal: 10MHz/Div Vertical: 10dB/Div

Passband Respond



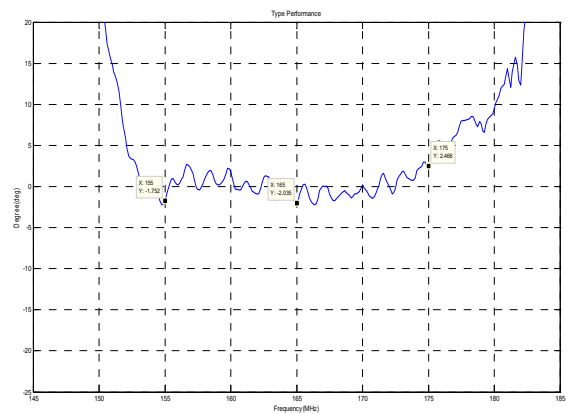
Horizontal: 10MHz/Div Vertical: 0.5dB/Div

Group Delay Variation( $f_0 \pm 10\text{MHz}$ )



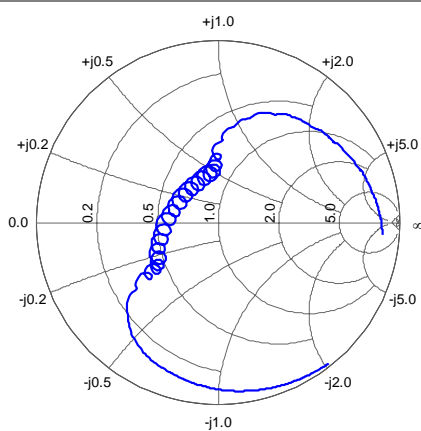
Horizontal: 5MHz/Div Vertical: 50ns/Div

Phase Linearity( $f_0 \pm 10\text{MHz}$ )

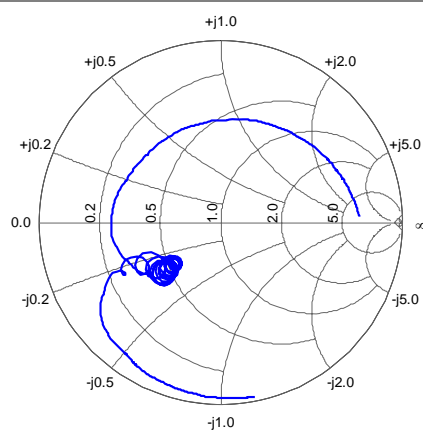


Horizontal: 5MHz/Div Vertical: 5deg/Div

Smith Chart S11



Smith Chart S22



**SIPAT Co., Ltd.**  
( CETC No.26 Research Institute )  
#14 Nanping Huayuan Road,  
Chongqing, China, 400060

Part Number	LBN16504	
Rev. Date	2010-03-31	
Ver.	3.0	Page 3/3