



## Features

- ✧ For IF SAW filter
- ✧ High attenuation
- ✧ Single-ended operation
- ✧ Dual In-line Package
- ✧ RoHS compliant (2002/95/EC), Pb-free

## Specifications

| Parameter                        | Unit                       | Minimum | Typical | Maximum |
|----------------------------------|----------------------------|---------|---------|---------|
| Center Frequency                 | MHz                        | 199.85  | 200     | 200.15  |
| Insertion Loss                   | dB                         | -       | 24.6    | 25      |
| 1 dB Bandwidth                   | MHz                        | -       | 8.92    | -       |
| 3 dB Bandwidth                   | MHz                        | 9       | 9.26    | -       |
| 40 dB Bandwidth                  | MHz                        | -       | 10.41   | -       |
| 50 dB Bandwidth                  | MHz                        | -       | 10.55   | 10.8    |
| Passband Variation               | dB                         | -       | 0.85    | 1       |
| Absolute Delay                   | usec                       | -       | 3.19    | -       |
| Group Delay Variation(f0±4MHz)   | nsec                       | -       | 70      | 150     |
| Ultimate Rejection               | dB                         | 50      | 55      | -       |
| Material Temperature coefficient | KHz/°C                     | -3.6    |         |         |
| Substrate Material               | -                          | 112LT   |         |         |
| Ambient Temperature              | °C                         | 25      |         |         |
| Operating Temperature Range      | °C                         | -40     | -       | +85     |
| Storage Temperature Range        | °C                         | -45     | -       | +105    |
| DC Voltage                       | V                          | 0       |         |         |
| Input Power                      | dBm                        | -       | -       | 10      |
| ESD Class                        | -                          | 1A      |         |         |
| Package Size                     | DIP3512 (35.0x12.8x4.7mm3) |         |         |         |

### Notes:

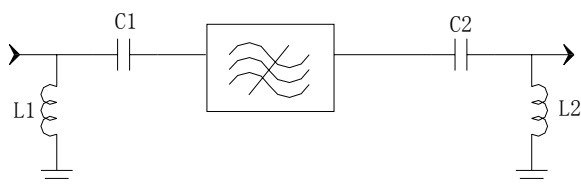
- All specifications are based on the test circuit shown;
- In production, all specifications are measured by Agilent Network analyzer and full 2 port calibration at room temperature;
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing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



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

|             |            |      |     |
|-------------|------------|------|-----|
| Part Number | LBT20004   |      |     |
| Rev. Date   | 2008-02-03 |      |     |
| Ver.        | 2.0        | Page | 1/3 |

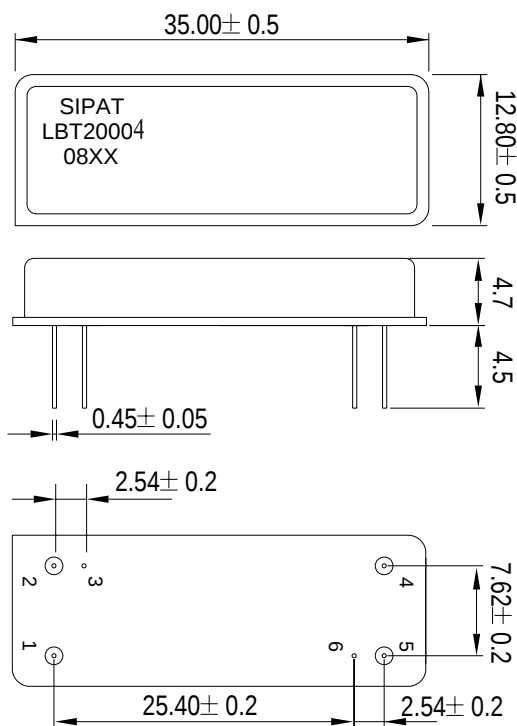
### Matching Configuration



**L1=L2=22nH**  
**C1=33pF C2=36pF**  
**Source/Load Impedance=50 ohm**

Notes - Component values may change depending  
on board layout.

### Package Dimension



#### Pad Configuration:

Input 1  
Output 5  
Ground All Others

#### Marking Configuration:

1) SIPAT: Manufacturer Name  
2) LBT20004: Part Number  
3) 08XX: Date Code

**Package: DIP3512**

**Unit: mm**



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

Part Number

LBT20004

Rev. Date

2008-02-03

Ver.

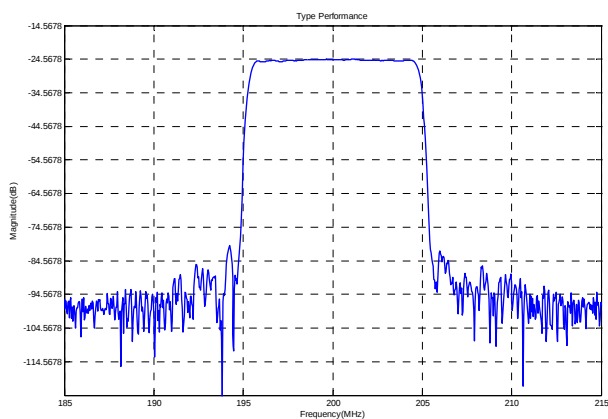
2.0

Page 2/3



### Typical Performance

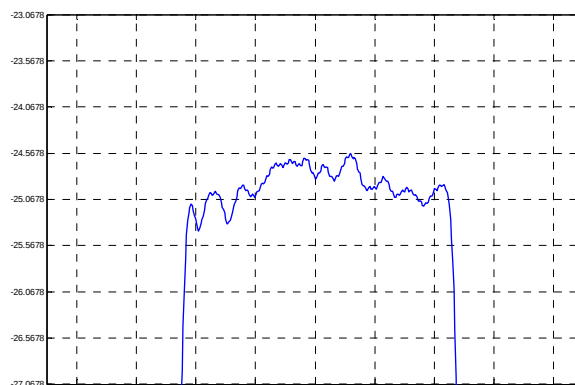
Frequency Respond



Horizontal: 5MHz/Div

Vertical: 10dB/Div

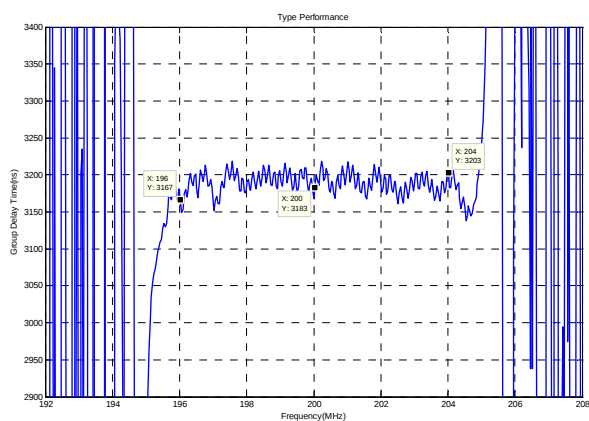
Passband Respond



Horizontal: 2MHz/Div

Vertical: 0.5dB/Div

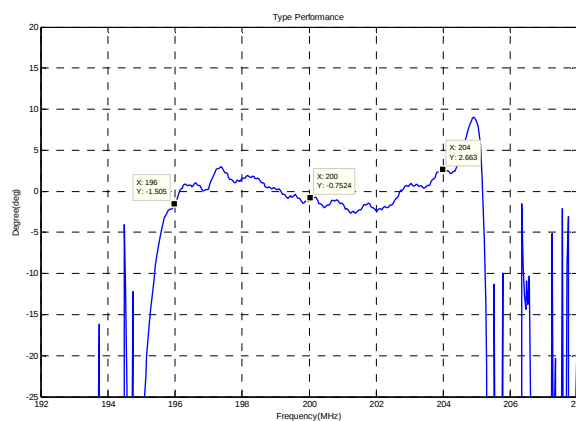
Group Delay Variation( $f_0 \pm 4\text{MHz}$ )



Horizontal: 2MHz/Div

Vertical: 50ns/Div

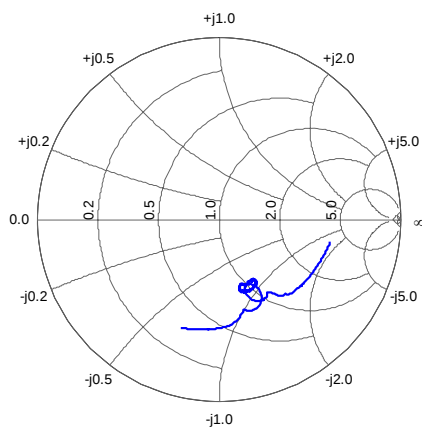
Phase Linearity( $f_0 \pm 4\text{MHz}$ )



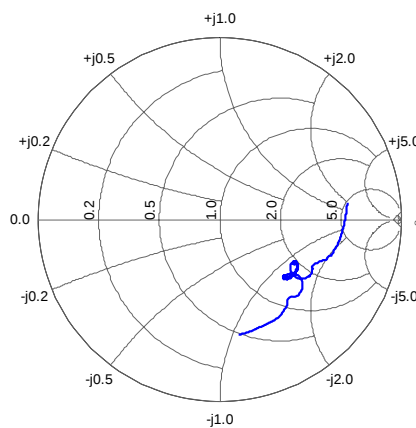
Horizontal: 2MHz/Div

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

LBT20004

Rev. Date

2008-02-03

Ver.

2.0

Page 3/3