



**DATA SHEET**

O K I C O M M U N I C A T I O N S P R O D U C T S

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**Discontinued Product**

**MBF9411B/9412B**  
**Surface Acoustic Wave (SAW) Filters**  
**for Mobile and Portable Phones**

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**September 1998**



**Oki Semiconductor**



# Oki Semiconductor

## MBF9411B/9412B

### Surface Acoustic Wave (SAW) Filters

#### DESCRIPTION

The new MBF9411B/9412B Surface Acoustic Wave (SAW) filters use Oki's third generation design and manufacturing technology to achieve a high out-of-band attenuation, low insertion loss, and low manufacturing cost in an industry standard 6-pin package, 1.2-mm thick and 3.0-mm square.

These 50- $\Omega$  matched bandpass microwave RF filters are designed for the worldwide standard wireless voice and data communications frequencies being used by cellular and wireless local-loop service providers. They have achieved design acceptance by leading wireless handset manufacturers in North America, Europe, and Asia.

Oki's lowest insertion loss SAW filters and high performance GaAs devices are used to reduce transmitter complexity. Receiver designs can be simplified by using the higher Tx frequency attenuation SAW filters.

These devices take advantage of Oki's 16-year plus RF communications component manufacturing experience and very high volume manufacturing capability to meet customer demands.

#### FEATURES

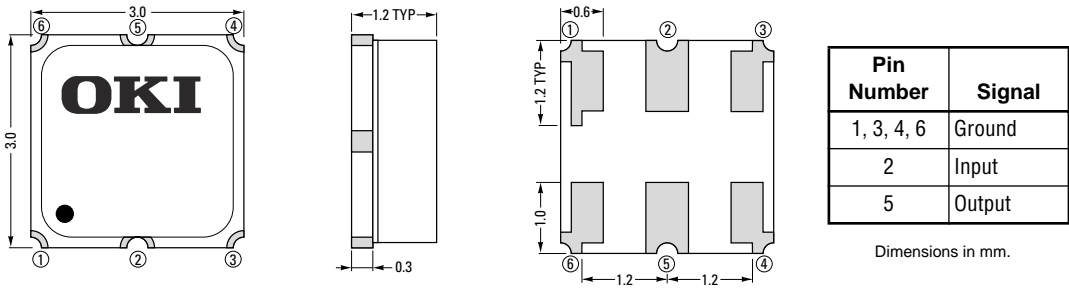
- Low insertion loss
- Small size, light weight
- 50- $\Omega$  matched
- 6-pin SMD package
- High reliability

#### SAW Filter Summary <sup>[1]</sup>

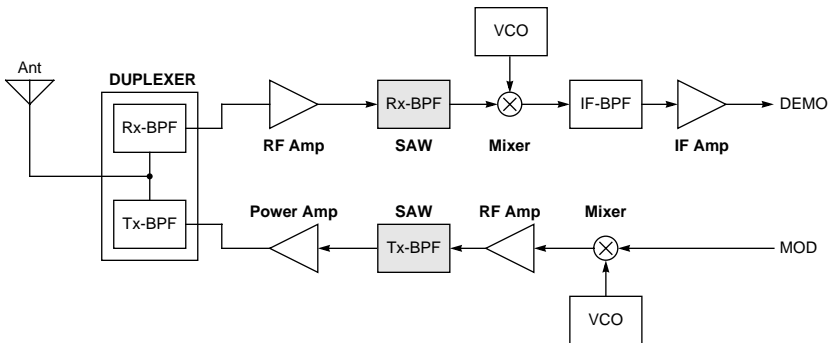
| Part Number | Description          | Pass Frequency (MHz) | Insertion Loss (dB) | Stop Frequency (MHz) | Attenuation (dB) |
|-------------|----------------------|----------------------|---------------------|----------------------|------------------|
| MBF9411B    | CDMA Transmit Filter | 824 to 849           | <3.5                | 869 to 1049          | >30              |
| MBF9412B    | CDMA Receive Filter  | 869 to 894           | <3.5                | 779 to 849           | >30              |

1. All parts in 6-pin ceramic square package (3.0 mm x 3.0 mm) by 1.2-mm thick with system matched 50- $\Omega$  I/O

## PIN CONFIGURATION



## BLOCK DIAGRAM



## ELECTRICAL CHARACTERISTICS

### MBF9411B Electrical Characteristics (-40 to +85°C)

| Parameter                          | Frequency (MHz) | Min. | Max. | Units |
|------------------------------------|-----------------|------|------|-------|
| Center Frequency (F <sub>C</sub> ) | Fr 836.5        | –    | –    | MHz   |
| Bandwidth (BW)                     | Fr ±12.5        | –    | –    | MHz   |
| Insertion Loss across BW           | 824 to 849      | –    | 3.5  | dB    |
| Return Loss across BW              |                 | 8.5  | –    | dB    |
| Stop Band Attenuation              | 0.3 to 850      | 28   | –    | dB    |
|                                    | 869 to 1049     | 30   | –    | dB    |
|                                    | 1049 to 2000    | 20   | –    | dB    |
| Terminating Impedance              |                 | –    | 50   | ohms  |

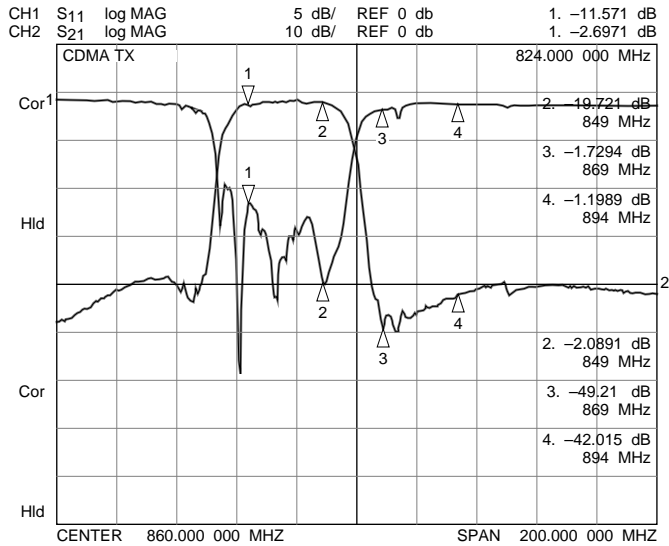
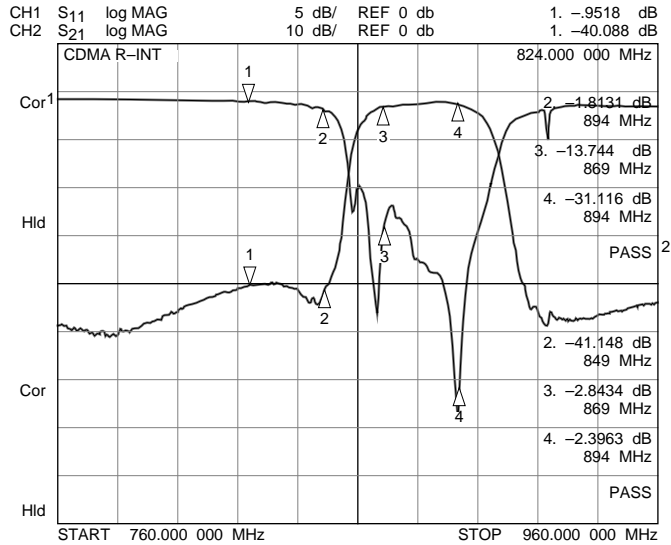


Figure 1. MBF9411B Frequency Response

**MBF9412B Electrical Characteristics (-30 to +85°C)**

| Parameter                  | Frequency (MHz) | Min.       | Max. | Units |
|----------------------------|-----------------|------------|------|-------|
| Center Frequency ( $F_C$ ) | Ft 881.5        | -          | -    | MHz   |
| Bandwidth (BW)             | Fr $\pm$ 12.5   | -          | -    | MHz   |
| Insertion Loss across BW   | 869 to 894      | -          | 3.5  | dB    |
| Ripple across BW           |                 | -          | 2.0  | dB    |
| VSWR across BW             |                 | -          | 2.0  | dB    |
| Stop Band Attenuation      |                 | 500 to 779 | 25   | -     |
|                            | 779 to 849      | 30         | -    | dB    |
|                            | 914 to 939      | 20         | -    | dB    |
|                            | 939 to 1049     | 35         | -    | dB    |
|                            | 1049 to 2000    | 25         | -    | dB    |
| Terminating Impedance      |                 | -          | 50   | ohms  |



**Figure 2. MBF9412B Frequency Response**

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The information contained herein can change without notice owing to product and/or technical improvements.

Please make sure before using the product that the information you are referring to is up-to-date.

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# Oki REGIONAL SALES OFFICES

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## **Northwest Area**

785 N. Mary Avenue  
Sunnyvale, CA 94086  
Tel: 408/720-8940  
Fax: 408/720-8965

## **Southwest Area**

2302 Martin Street  
Suite 250  
Irvine, CA 92715  
Tel: 714/752-1843  
Fax: 714/752-2423

## **Northeast Area**

138 River Road  
Shattuck Office Center  
Andover, MA 01810  
Tel: 508/688-8687  
Fax: 508/688-8896

## **Southeast Area**

1590 Adamson Parkway  
Suite 220  
Morrow, GA 30260  
Tel: 404/960-9660  
Fax: 404/960-9682

### **Oki Web Site:**

<http://www.okisemi.com>

### **Oki FAX Service:**

*Call toll free 1-800-OKI-6994*

**Oki Stock No: 320075-001**



# **Oki Semiconductor**

### **Corporate Headquarters**

785 N. Mary Avenue  
Sunnyvale, CA 94086-2909  
Tel: 408/720-1900  
Fax: 408/720-1918