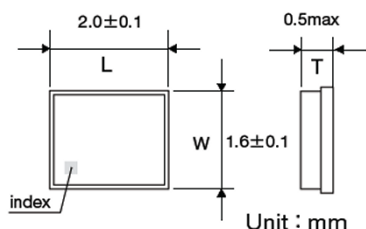


# FBAR/SAW Devices (SAW Duplexers)

## D5PF788M0M3Y9



### ■ Features

- Item Summary  
SAW, Duplexer, 2.0x1.6x0.5mm  
Band28
- Lifecycle Stage  
Mass Production
- Standard packaging quantity (minimum)  
Taping Embossed 3000 , 15000pcs

### ■ Products characteristics table

|   |               |
|---|---------------|
| System                                  | LTE           |
| Type                                    | SAW           |
| Function                                | Duplexer      |
| band                                    | Band28        |
| Insertion Loss (typ)<br>(Tx-ANT/ANT-Rx) | 1.8/2.4 dB    |
| Isolation (typ)                         | 60/54 dB      |
| Operating Temp. Range                   | -20 to +85 °C |
| RoHS2 Compliance (10 subst.)            | Yes           |
| REACH Compliance (173 subst.)           | Yes           |
| Halogen Free                            | Yes           |
| Soldering                               | Reflow        |

### ■ External Dimensions

|             |               |
|-------------|---------------|
| Dimension L | 2.0 ± 0.10 mm |
| Dimension W | 1.6 ± 0.10 mm |
| Dimension T | Max 0.5 mm    |

2017.05.01

The data is reference only. Electrical characteristics vary depending on environment or measurement condition.  
 TAIYO YUDEN reserves the right to make change to the Date at any time without notice.  
 Before making final selection, please check product specification.



MSL1

\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

**Table 1. Electrical Specification**

| Item                  |                      | Condition<br>(MHz) | Specification                  |     |     | Unit    | Remarks      |  |
|-----------------------|----------------------|--------------------|--------------------------------|-----|-----|---------|--------------|--|
|                       |                      |                    | Min                            | Typ | Max |         |              |  |
| Tx<br>to<br>ANT       | Insertion loss       | 718~748            | -                              | 1.8 | 2.8 | dB (*1) |              |  |
|                       | Ripple               | 718~748            | -                              | 0.9 | 2.3 | dB      |              |  |
|                       | VSWR                 | ANT                | 718~748                        | -   | 1.9 | 2.3     | -            |  |
|                       |                      | Tx                 |                                | -   | 1.9 | 2.3     | -            |  |
|                       | Input power          | 718~748            | CW tone, +28.5dBm, 5000H       |     |     | -       | Ta=50°C      |  |
|                       | Absolute attenuation | 10~698             | 33                             | 38  | -   | dB      |              |  |
|                       |                      | 698~710            | 10                             | 50  | -   | dB      |              |  |
|                       |                      | 758~773            | 20                             | 43  | -   | dB      |              |  |
|                       |                      | 773~803            | 47                             | 53  | -   | dB      |              |  |
|                       |                      | 1436~1496          | 35                             | 47  | -   | dB      |              |  |
| 1565~1606             |                      | 40                 | 51                             | -   | dB  |         |              |  |
| 2154~2244             |                      | 45                 | 57                             | -   | dB  |         |              |  |
| 2400~2500             | 45                   | 56                 | -                              | dB  |     |         |              |  |
| ANT<br>to<br>Rx       | Insertion loss       | 773~803            | -                              | 2.4 | 2.9 | dB (*1) |              |  |
|                       | Ripple               | 773~803            | -                              | 0.8 | 1.7 | dB      |              |  |
|                       | VSWR                 | ANT                | 773~803                        | -   | 1.7 | 2.2     | -            |  |
|                       |                      | Rx                 |                                | -   | 2.0 | 2.4     | -            |  |
|                       | Absolute attenuation | 718~748            | 50                             | 59  | -   | dB      |              |  |
| 2400~2500             |                      | 45                 | 50                             | -   | dB  |         |              |  |
| Tx to<br>Rx           | Isolation            | 718~748            | 56                             | 60  | -   | dB      |              |  |
|                       |                      | 773~803            | 50                             | 54  | -   | dB      |              |  |
| Terminating Impedance |                      | Tx port            | 50 + 12nH                      |     |     | Ohm     | Single-ended |  |
|                       |                      | Rx port            | 50                             |     |     | Ohm     | Single-ended |  |
|                       |                      | Ant port           | 50 // 10nH                     |     |     | Ohm     | Single-ended |  |
| Operating Temperature |                      |                    | -20 to +85                     |     |     | °C      |              |  |
| Device size (LxWxH)   |                      |                    | 2.0(typ) x 1.6(typ) x 0.5(max) |     |     | mm      |              |  |

(\*1) Specification of insertion loss excludes loss that comes from the test board.

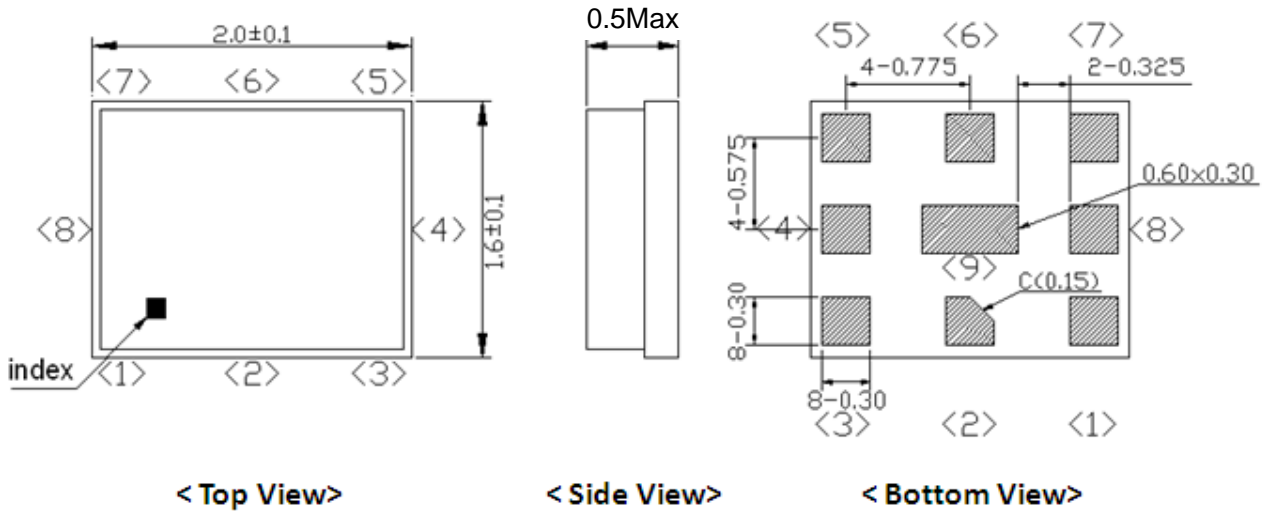


MSL1

\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
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| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

### Dimensions



Unit: mm

### Pin Configuration

| Pin No. | Pin name | Description     |
|---------|----------|-----------------|
| 1       | Rx       | Receiver Pin    |
| 2       | GND      | Ground Pin      |
| 3       | Tx       | Transmitter Pin |
| 4       | GND      | Ground Pin      |
| 5       | GND      | Ground Pin      |
| 6       | ANT      | Antenna Pin     |
| 7       | GND      | Ground Pin      |
| 8       | GND      | Ground Pin      |
| 9       | GND      | Ground Pin      |

Figure 1. Dimensions and Pin assignment



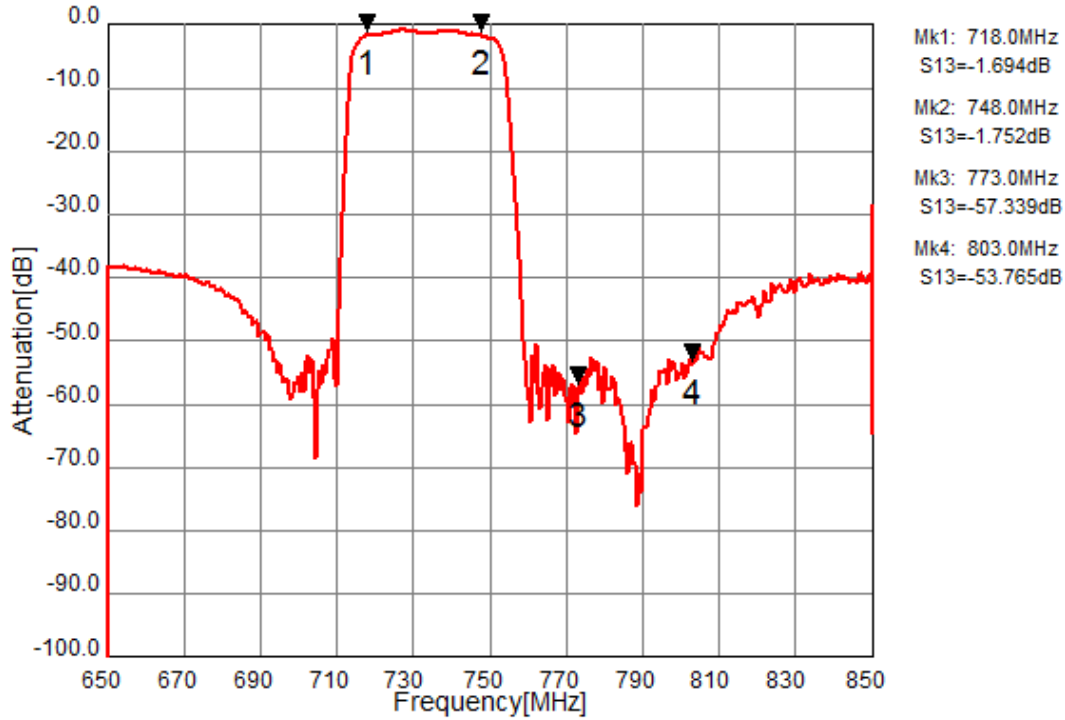


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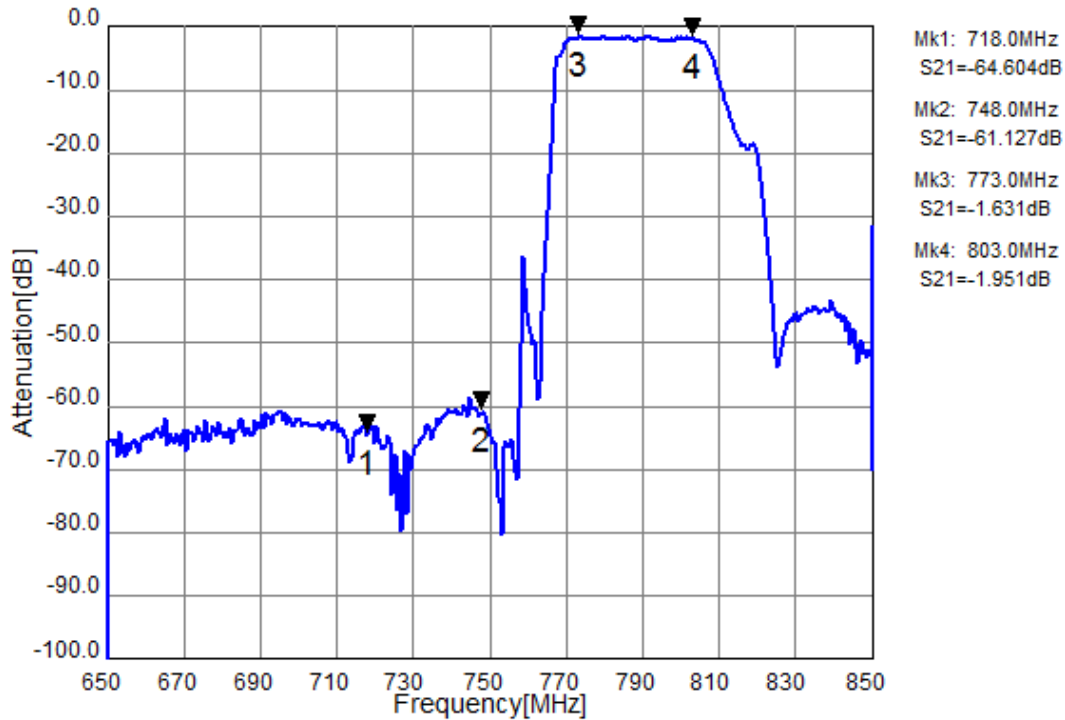
\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

### Tx to Ant



### Ant to Rx



**Figure 3-1. Electrical Characteristics**

These data exclude loss that comes from the test board.

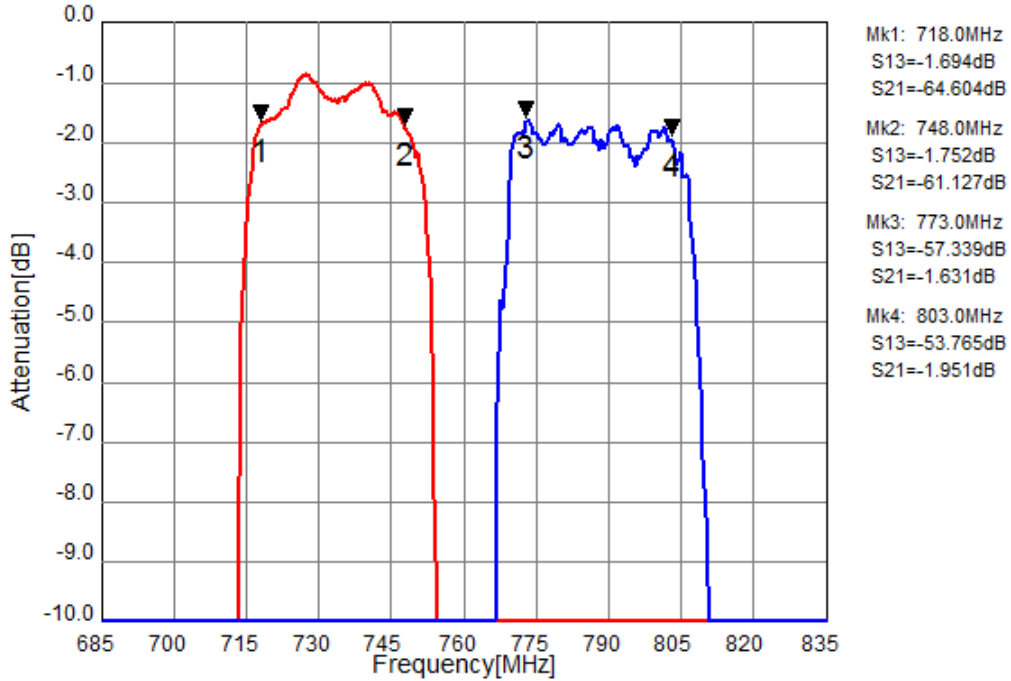


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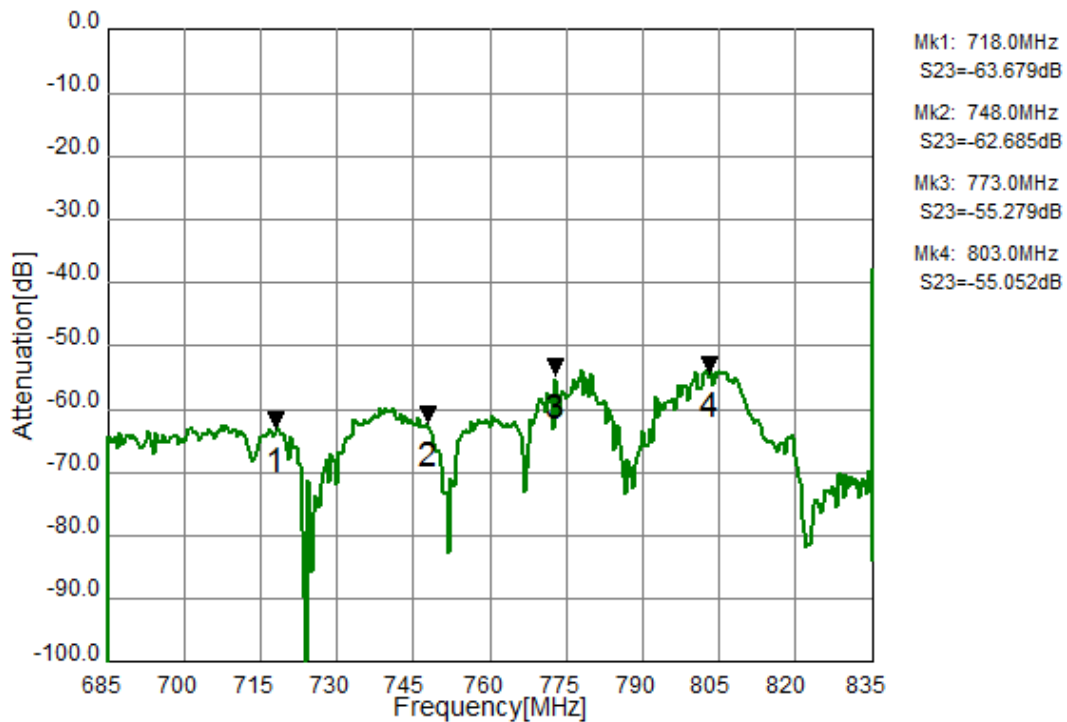
\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

## Tx to Ant, Ant to Rx



## Tx to Rx Isolation



**Figure 3-2. Electrical Characteristics**

These data exclude loss that comes from the test board.

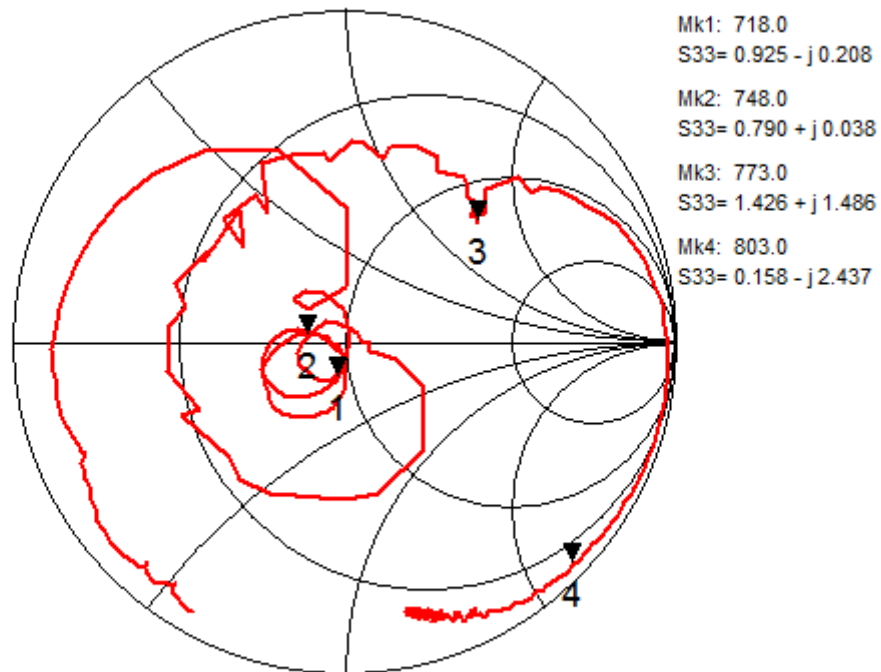
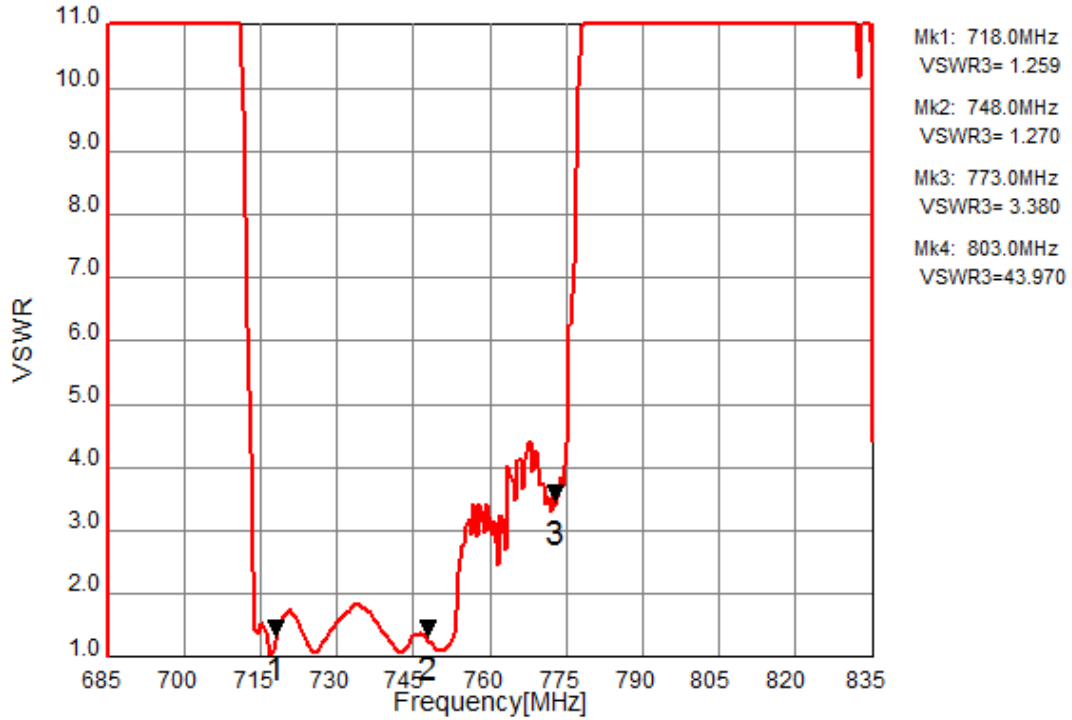


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\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

## Tx Port



**Figure 3-3. Electrical Characteristics**

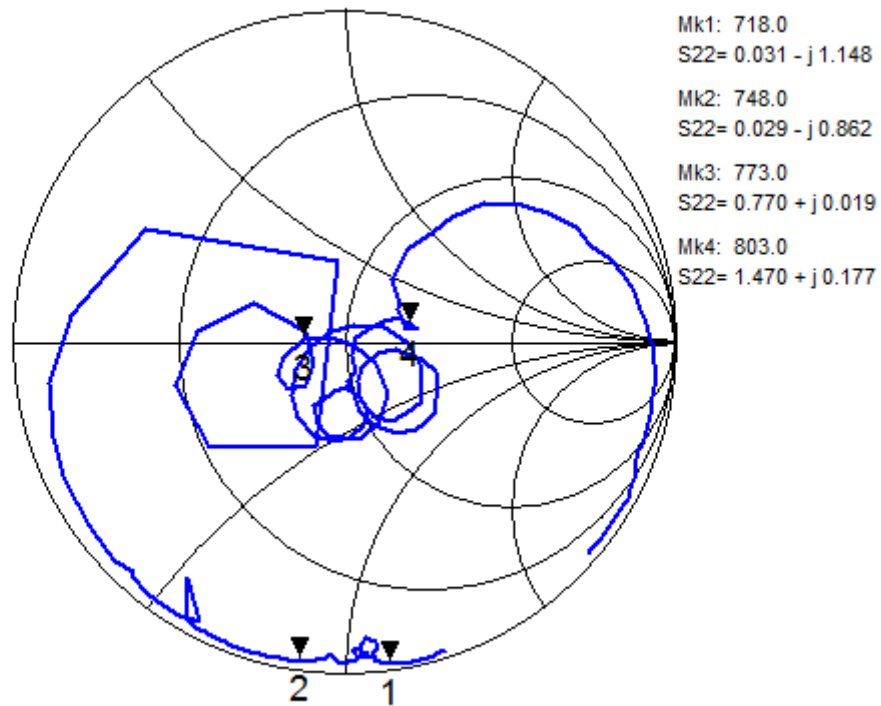
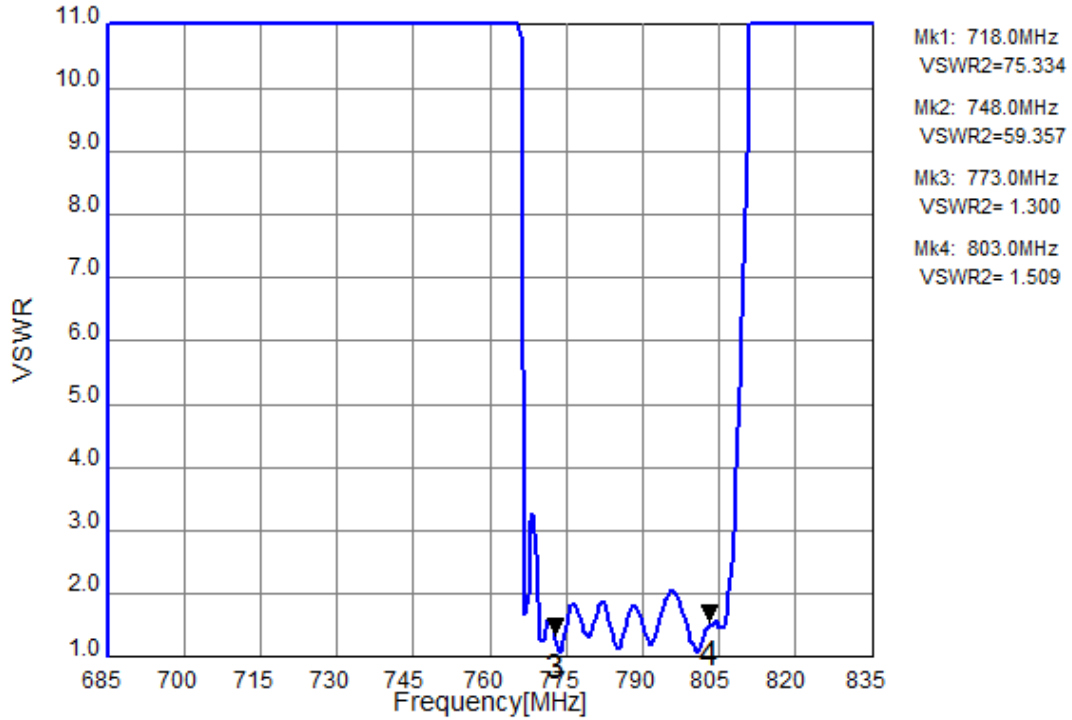


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\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

## Rx Port



**Figure 3-4. Electrical Characteristics**



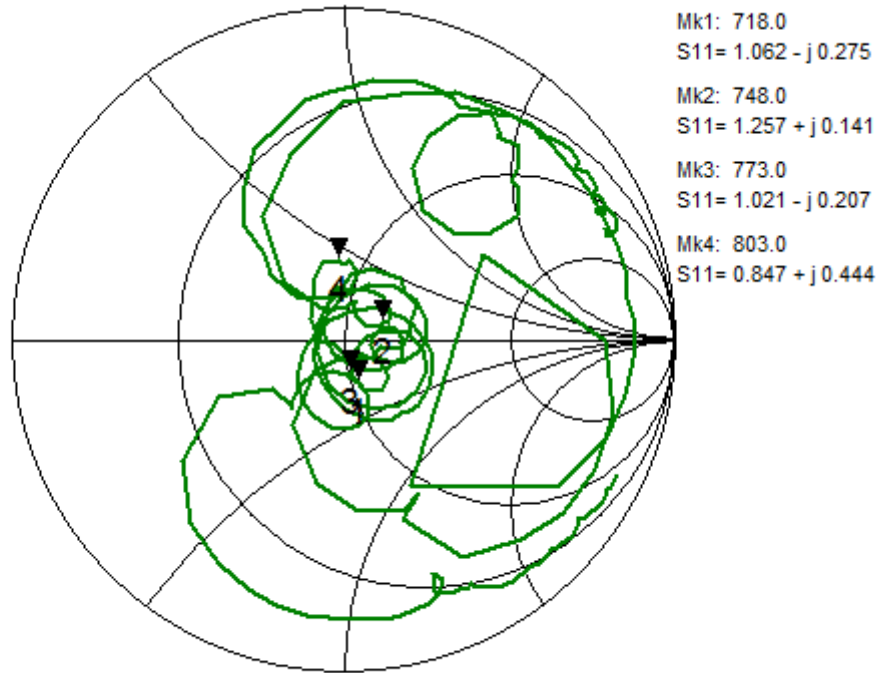
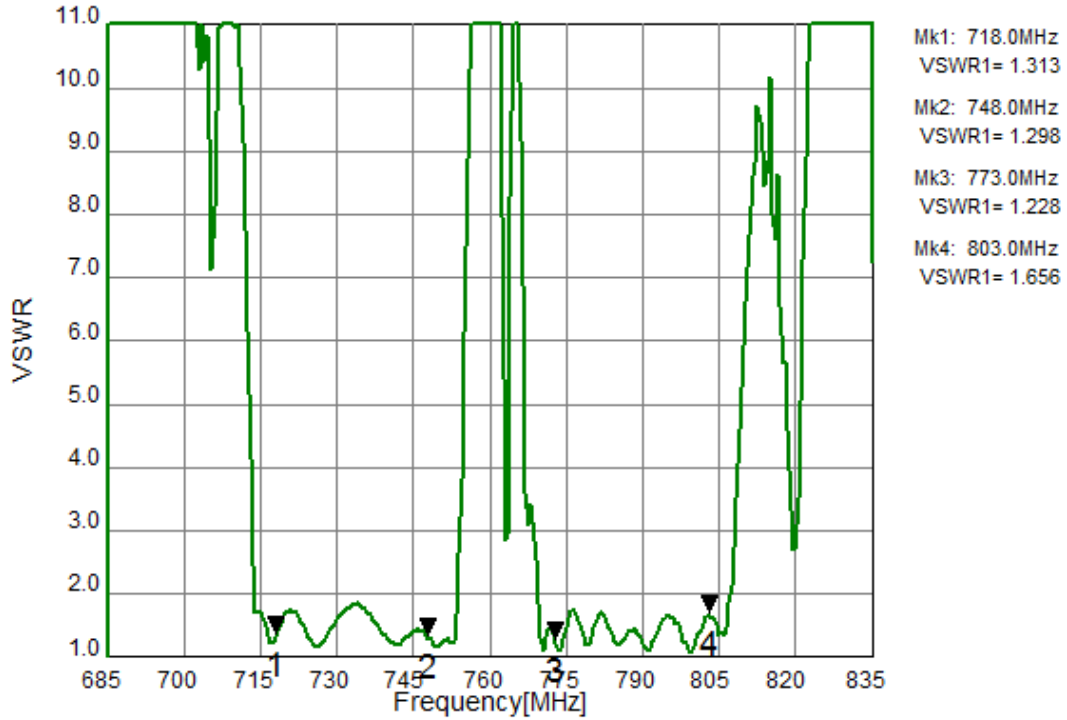


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\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

## Ant Port



**Figure 3-5. Electrical Characteristics**

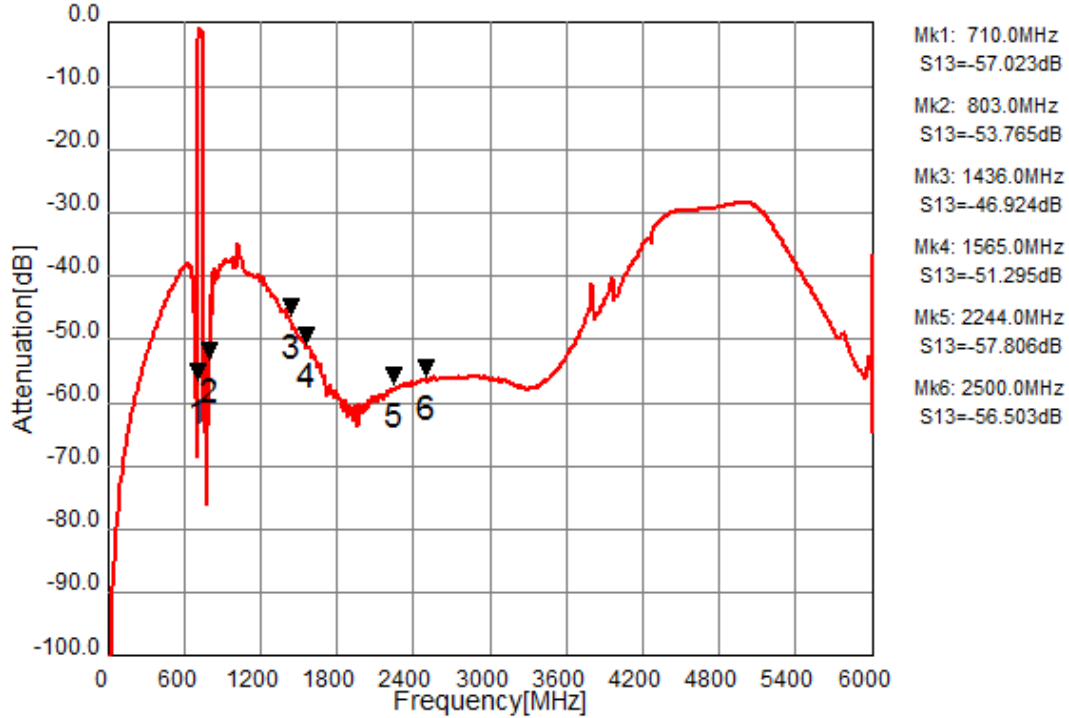


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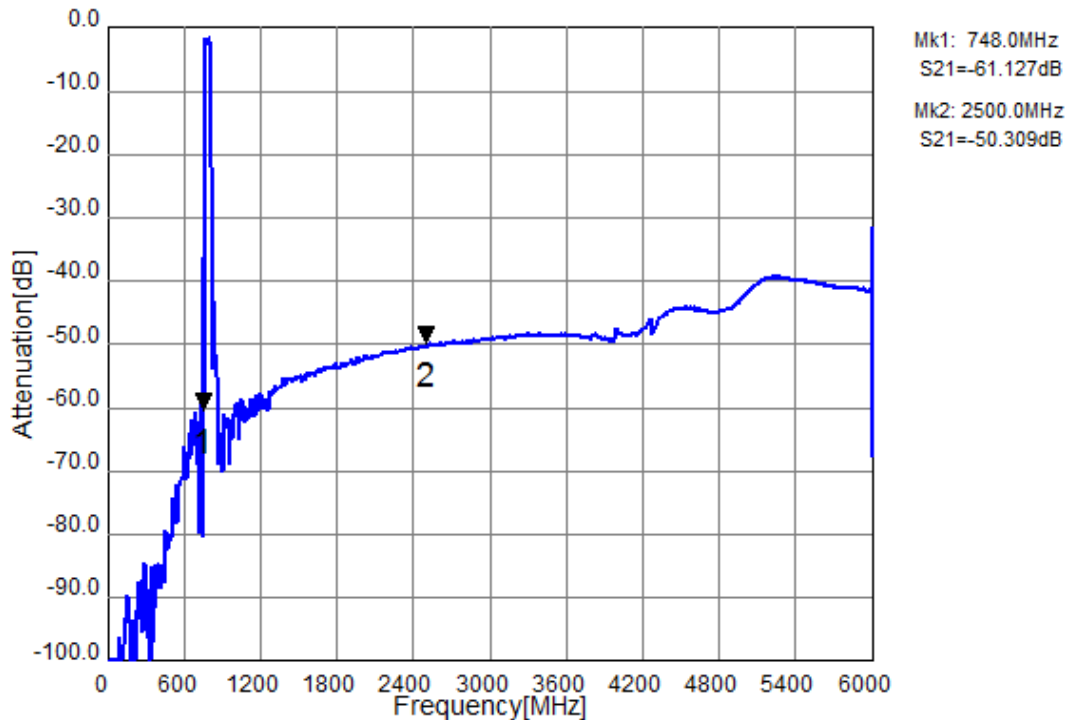
\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

### Tx to Ant (Wide span)



### Ant to Rx (Wide span)



**Figure 3-6. Electrical Characteristics**

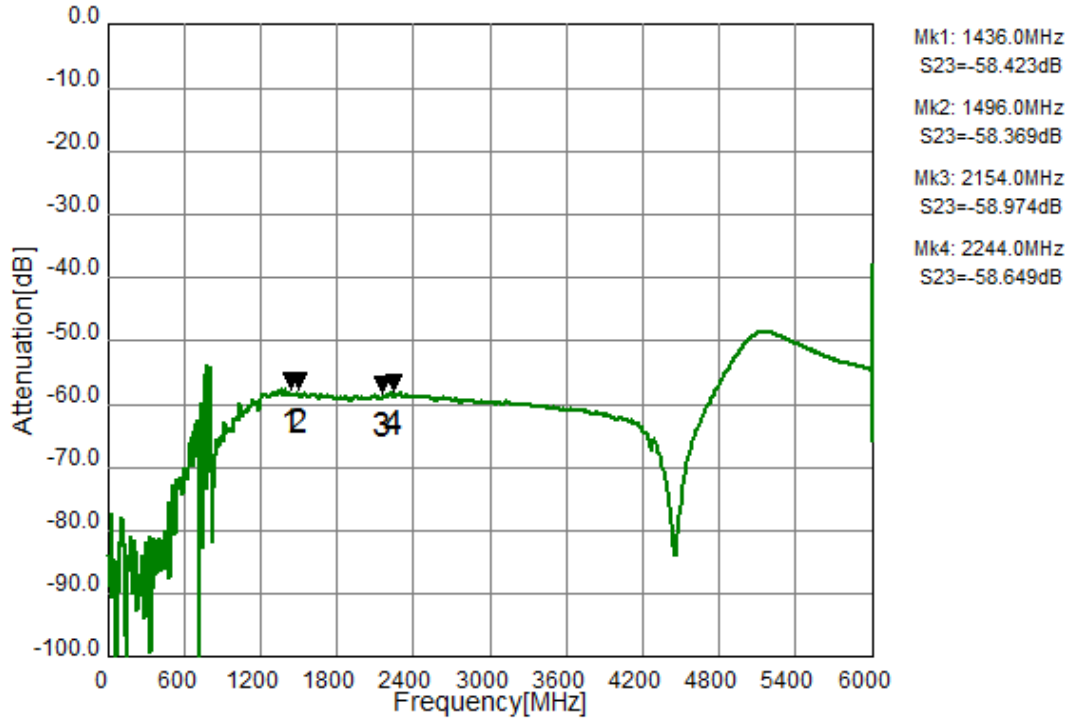


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\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

### Tx to Rx (Wide span)



**Figure 3-7. Electrical Characteristics**



MSL1

\* Pb Free Part

|               |                          |  |              |
|---------------|--------------------------|--|--------------|
| Customer Name | Standard                 | TAIYO YUDEN Mobile Technology Co.,Ltd. |              |
| System        | Band 28 Block B Duplexer | Date                                   | Apr. 4, 2014 |
| Part Number   | D5PF788M0M3Y9            | Version 3.2ccB                         | Final        |

## Ordering Code

| Ordering Code    | Packing     | Reel size             | Status |
|------------------|-------------|-----------------------|--------|
| D5PF788M0M3Y9-Z  | Tape & Reel | 3,000 pcs.            | MP     |
| D5PF788M0M3Y9-ZA | Tape & Reel | less than 3,000 pcs.  | MP     |
| D5PF788M0M3Y9-Y  | Tape & Reel | 15,000 pcs.           | MP     |
| D5PF788M0M3Y9-YA | Tape & Reel | less than 15,000 pcs. | MP     |
| D5PF788M0M3Y9-Q  | Bulk        | few pcs.              | MP     |

\*Minimum order quantity (MOQ) is assigned for each inquiry, Please contact to Sales Representatives..

\*MP : Mass Production

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Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

This product is for general electronics equipment such as Audio-Visual equipment, household electronics, office supplies, information services and telecommunications; therefore, in case this product is used for any medical equipment, space equipment, nuclear equipment or disaster prevention equipment, please contact Taiyo Yuden in advance.

In case this product is used for general electronics equipment or circuits which require high safety and high reliability, thoroughly evaluate on safety and add a protection circuit if necessary.