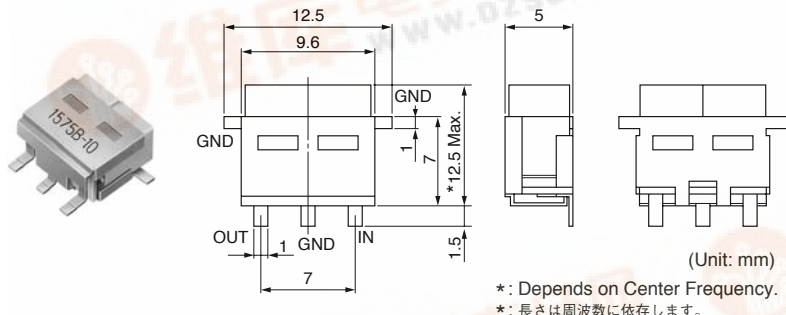


## TYPE #4DFA (2 Pole SMD Type) / #4DFB (3 Pole Type)

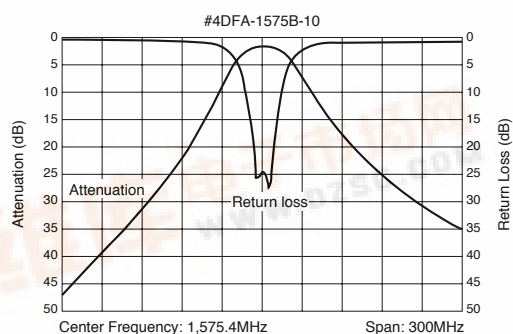
Frequency Range: 700~2500MHz

Temperature Range: - 40°C~+ 85°C

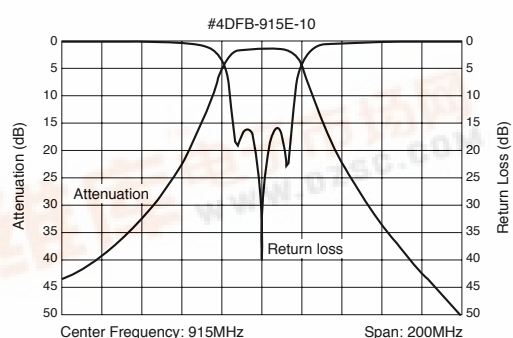
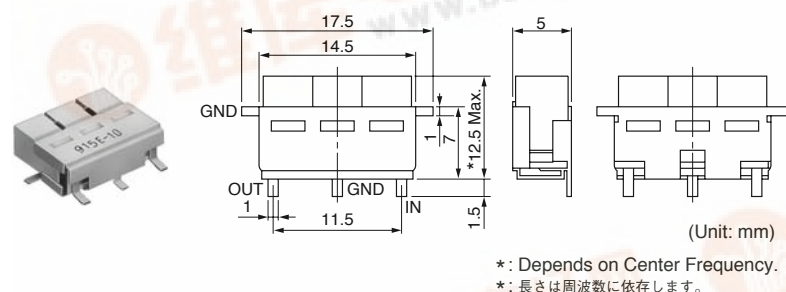
### #4DFA



### Typical Characteristics 代表特性例



### #4DFB



## SELECTION GUIDE FOR STANDARD DEVICES

- The Part Number shown in the table below are standard devices, which are readily available. TOKO will design and manufacture modified and custom devices with specific characteristics to meet your requirements. If you do not find the devices for your application in this catalog, please contact our sales or representative office.
- RoHS compliant

- 下記の表に示す製品番号は標準品です。TOKOは、お客様のご要望に合わせ設計、製作致しますので、お客様の用途に適合する仕様が見当たらない場合は、当社営業所または代理店にご連絡下さい。
- RoHS指令対応

### TYPE #4DFA: SMD 2 Pole Designs

| 東光品番             | 中心周波数                  | 帯域幅                  | 挿入損失                     | 帯域内リップル                | V.S.W.R.            | 選択度                         | 応用例                |
|------------------|------------------------|----------------------|--------------------------|------------------------|---------------------|-----------------------------|--------------------|
| TOKO Part Number | Center Frequency (MHz) | Bandwidth (fo ± MHz) | Insertion Loss (dB) Max. | Ripple in BW (dB) Max. | V.S.W.R. in BW Max. | Selectivity (dB) Min. (MHz) | Application        |
| #4DFA-836E-10    | 836.5                  | ± 12.5               | 2.0                      | 1.0                    | 2.0                 | 18 (fo ± 77.5)              | AMPS               |
| #4DFA-881E-10    | 881.5                  | ± 12.5               | 2.0                      | 1.0                    | 2.0                 | 18 (fo ± 77.5)              | AMPS               |
| #4DFA-902E-10    | 902.5                  | ± 12.5               | 2.0                      | 1.0                    | 2.0                 | 18 (fo ± 77.5)              | NMT/GSM            |
| #4DFA-947E-10    | 947.5                  | ± 12.5               | 2.0                      | 1.0                    | 2.0                 | 18 (fo ± 77.5)              | NMT/GSM            |
| #4DFA-866A-10    | 866.0                  | ± 2.0                | 3.0                      | 1.0                    | 1.43                | 30 (fo - 105)               | CT2                |
| #4DFA-886A-10    | 886.0                  | ± 1.0                | 3.0                      | 1.0                    | 2.0                 | 22 (fo ± 45)                | Cordless Phone     |
| #4DFA-808C-11    | 808.0                  | ± 8.0                | 2.0                      | 1.0                    | 2.0                 | 22 (fo ± 64)                | Wireless Microphon |
| #4DFA-849C-10    | 849.0                  | ± 8.0                | 2.0                      | 1.0                    | 2.0                 | 22 (fo ± 64)                | Wireless Microphon |
| #4DFA-915E-10    | 915.0                  | ± 13.0               | 2.2                      | 1.0                    | 2.0                 | 18 (fo ± 77.5)              | Spread Spectrum    |
| #4DFA-1227B-10   | 1227.0                 | ± 5.0                | 2.0                      | 0.8                    | 2.0                 | 7, 30 (fo ± 35, ± 140)      | GPS                |
| #4DFA-1227B-11   | 1227.0                 | ± 5.0                | 1.2: 0.7 Typ.            | 0.5                    | 2.0                 | 15, 20 (fo + 140, - 140)    | GPS                |
| #4DFA-1227D-12   | 1227.0                 | ± 10.0               | 1.2: 0.7 Typ.            | 0.7                    | 2.0                 | 16, 20 (fo + 140, - 140)    | GPS                |
| #4DFA-1248B-10   | 1248.0                 | ± 5.0                | 2.0: 1.4 Typ.            | 0.8                    | 2.0                 | 7, 30 (fo ± 35, ± 140)      | GPS                |
| #4DFA-1575B-10   | 1575.4                 | ± 5.0                | 2.0: 1.4 Typ.            | 0.8                    | 2.0                 | 7, 30 (fo ± 35, ± 140)      | GPS                |
| #4DFA-1575B-12   | 1575.4                 | ± 5.0                | 1.2: 0.7 Typ.            | 0.5                    | 2.0                 | 17, 20 (fo + 140, - 140)    | GPS                |
| #4DFA-1575B-14   | 1575.4                 | ± 5.0                | 2.5: 1.8 Typ.            | 0.8                    | 2.0                 | 17 (fo ± 50)                | GPS                |
| #4DFA-1550L-10   | 1550.0                 | ± 30.0               | 1.2: 0.7 Typ.            | 0.7                    | 2.0                 | 12, 16 (fo + 150, - 150)    | MCSS               |
| #4DFA-2442P-10   | 2442.0                 | ± 40.0               | 2.5                      | 1.0                    | 2.0                 | 15 (fo ± 250)               | Spread Spectrum    |
| #4DFA-2642E-11   | 2642.5                 | ± 12.5               | 2.0: 1.4 Typ.            | 0.8                    | 2.0                 | 36, 38 (fo + 500, - 500)    | Mobile Broadcast   |

入出力インピーダンス / Input Output impedance : 50 Ω

## TYPE #4DFB: SMD 3 Pole Designs

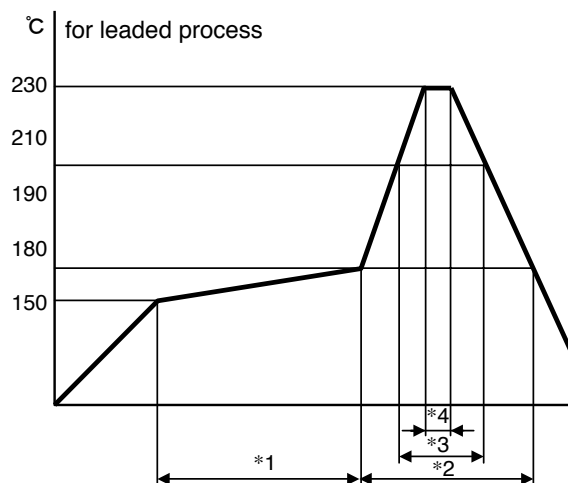
| 東光品番                   | 中心周波数                        | 帯域幅                     | 挿入損失                           | 帯域内リップル                      | V.S.W.R.                  | 選択度                            | 応用例                |
|------------------------|------------------------------|-------------------------|--------------------------------|------------------------------|---------------------------|--------------------------------|--------------------|
| TOKO<br>Part<br>Number | Center<br>Frequency<br>(MHz) | Bandwidth<br>(fo ± MHz) | Insertion<br>Loss<br>(dB) Max. | Ripple<br>in BW<br>(dB) Max. | V.S.W.R.<br>in BW<br>Max. | Selectivity<br>(dB) Min. (MHz) | Application        |
| #4DFB-704E-10          | 704.0                        | ± 12.0                  | 3.0                            | 1.0                          | 2.0                       | 40,43 (fo – 100, + 100)        | Wireless Microphon |
| #4DFB-790H-10          | 790.0                        | ± 20.0                  | 2.7                            | 1.1                          | 2.5                       | 35 (fo ± 100)                  | Wireless Microphon |
| #4DFB-796E-10          | 796.0                        | ± 14.0                  | 3.0                            | 1.0                          | 2.0                       | 40,43 (fo – 100, + 100)        | Wireless Microphon |
| #4DFB-836E-10          | 836.5                        | ± 12.5                  | 2.5                            | 1.0                          | 2.0                       | 12 (fo ± 32.5)                 | AMPS               |
| #4DFB-881E-10          | 881.5                        | ± 12.5                  | 2.5                            | 1.0                          | 2.0                       | 12 (fo ± 32.5)                 | AMPS               |
| #4DFB-886A-10          | 886.0                        | ± 1.0                   | 4.5                            | 1.0                          | 2.0                       | 41 (fo ± 45)                   | Cordless Phone     |
| #4DFB-953A-10          | 953.5                        | ± 1.5                   | 6.0                            | 1.5                          | 2.0                       | 30 (fo ± 30)                   | RFID               |
| #4DFB-915E-10          | 915.0                        | ± 13.0                  | 2.7                            | 1.0                          | 2.0                       | 12 (fo ± 32.5)                 | Spread Spectrum    |
| #4DFB-1030C-10         | 1030.0                       | ± 7.5                   | 3.2                            | 1.0                          | 1.6                       | 20, 50 (fo ± 35, ± 140)        | TCAS               |
| #4DFB-1227D-10         | 1227.0                       | ± 10.0                  | 3.2                            | 1.0                          | 2.0                       | 12, 40 (fo ± 35, ± 140)        | GPS                |
| #4DFB-1575D-10         | 1575.0                       | ± 10.0                  | 3.2                            | 1.0                          | 2.0                       | 12, 40 (fo ± 35, ± 140)        | GPS                |
| #4DFB-1542G-10         | 1542.0                       | ± 17.0                  | 2.0                            | 1.0                          | 2.0                       | 17 (fo ± 84.5)                 | MCSS/INMARSAT      |
| #4DFB-1643G-10         | 1643.5                       | ± 17.0                  | 1.6                            | 0.5                          | 1.5                       | 18, 28 (fo – 67, + 108)        | MCSS/INMARSAT      |
| #4DFB-1747N-10         | 1747.5                       | ± 35.0                  | 2.0                            | 1.2                          | 2.0                       | 12, 38 (fo ± 100, ± 350)       | PCN                |
| #4DFB-1842N-10         | 1842.5                       | ± 35.0                  | 2.0                            | 1.2                          | 2.0                       | 24, 38 (fo ± 157, ± 350)       | PCN                |
| #4DFB-1950L-10         | 1950.0                       | ± 30.0                  | 3.0                            | 1.0                          | 1.0                       | 25, 25 (fo – 230, + 160)       | W-CDMA             |
| #4DFB-2140L-10         | 2140.0                       | ± 30.0                  | 3.0                            | 1.0                          | 2.0                       | 30, 22 (fo – 340, – 160)       | W-CDMA             |
| #4DFB-2442P-10         | 2442.0                       | ± 40.0                  | 2.5                            | 1.2                          | 2.0                       | 5, 32 (fo ± 80, ± 250)         | Spread Spectrum    |
| #4DFB-920A-11          | 920.0                        | ± 2.5                   | 5.0                            | 1.0                          | 2.0                       | 50, 18 (fo – 88, ± 20)         | Digital TV         |
| #4DFB-860D-10          | 860.0                        | ± 10.0                  | 2.5                            | 0.8                          | 2.0                       | 15, 35 (fo ± 35, ± 80)         | LMR                |
| #4DFB-938A-13          | 938.0                        | ± 3.0                   | 2.0                            | 1.0                          | 2.0                       | 18, 13 (fo – 36, + 36)         | LMR                |

入出力インピーダンス／Input Output impedance : 50 Ω

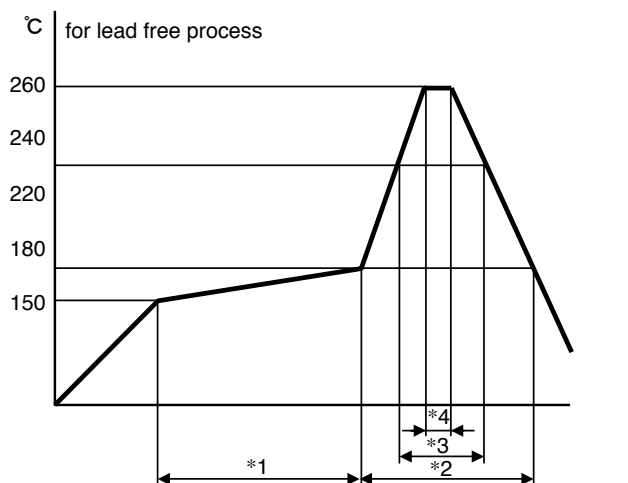
## ■PRECAUTIONS AND RECOMMENDED SOLDERING CONDITIONS FOR USING DIELECTRIC FILTERS SURFACE MOUNT TYPE

### 面実装誘電体フィルタご使用上の注意・推奨はんだ付け条件

Temperature profile (land seface temperature)  
温度プロファイル (ランド部表面温度)



|                           |                      |
|---------------------------|----------------------|
| Pre-heat conditions       | 予熱部                  |
| *1 : 150~160°C 60s. Max.□ | *1 : 150~160°C 60秒以内 |
| Reflow conditions         | リフロ部                 |
| *2 : 160°C Min. 45s. Max. | *2 : 160°C以上 45秒以内   |
| *3 : 200°C Min. 30s. Max. | *3 : 200°C以上 30秒以内   |
| *4 : 230±5°C 5s. Max.     | *4 : 230±5°C 5秒以内    |



|                            |                       |
|----------------------------|-----------------------|
| Pre-heat conditions        | 予熱部                   |
| *1 : 150~180°C 120s. Max.□ | *1 : 150~180°C 120秒以内 |
| Reflow conditions          | リフロ部                  |
| *2 : 180°C Min. 150s. Max. | *2 : 180°C以上 150秒以内   |
| *3 : 230°C Min. 40s. Max.  | *3 : 230°C以上 40秒以内    |
| *4 : 255±5°C 5s. Max.      | *4 : 255±5°C 5秒以内     |

#### 1. Reflow solder conditions

##### •Solderability

When flux-mounted terminals are immersed in solder at following conditions, at least 95% of the surface should be covered by solder.

Conditins

leaded process : 230±5°C for 3±0.5 seconds

lead free process : 260±5°C for 3±0.5 seconds

##### •Solder heat resistance

No abnormalities under solder conditions of

leaded process : 230±5°C for 5 seconds

lead free process : 260±5°C for 5 seconds

#### 2. Rinsing

After Soldering, you should rinsing away the excess flux. Any commercially available rinsing agent may be used.

#### 3. Other Precautions

Perform soldering at as low a temperature as possible and for as short a time as possible.

Make sure that the silver electrode of resonators is not covered by solder.

Avoid applying external forces to terminals such as by bending or cutting them.

#### 4. Iron Soldering

Perform iron soldering with iron at following conditions.

Conditins

leaded process : 350±5°C for 5s. Max.

lead free process : 390±5°C for 5s. Max.

#### 1. リフロはんだ条件

##### • はんだ付け性

フラックス付けした端子部を以下の条件ではんだ中に浸漬し95%以上の面積がはんだで覆われること。

条件

有鉛品 : 230±5°Cのはんだ中に3±0.5秒浸漬

鉛フリー品 : 245±5°Cのはんだ中に3±0.5秒浸漬

##### • はんだ耐熱性

以下のはんだ付け条件で異常のないこと。

有鉛品 : 230±5°C、5秒間

鉛フリー品 : 260°C、5秒間

#### 2. 洗浄

はんだ付け後のフラックスの洗浄をして下さい。

洗浄液として一般的に使用されている全ての洗浄液が使用できます。

#### 3. その他留意事項

はんだ付けは極力低い温度で短時間で行って下さい。

共振器の銀電極にはんだが付着しないようにして下さい。

端子を曲げたり、切断するなど、端子部分に外力を加えることは避けて下さい。

#### 4. こてはんだ

有鉛半田 : こて先温度350°C以下、加熱時間5秒以内、1回

無鉛半田 : こて先温度390±10°C、加熱時間5秒以内、1回