

# Dielectric Filters (GIGAFIL®)

**muRata**

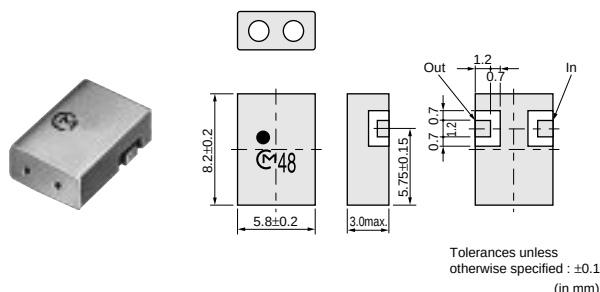
1

## Band Pass Filters

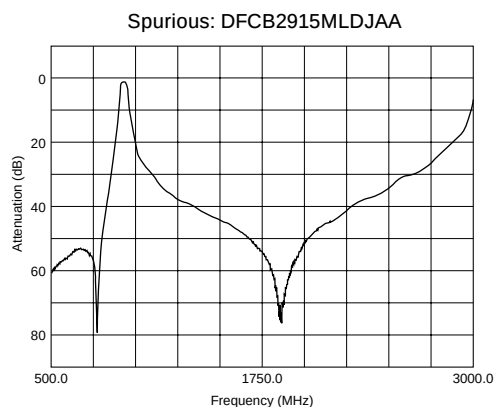
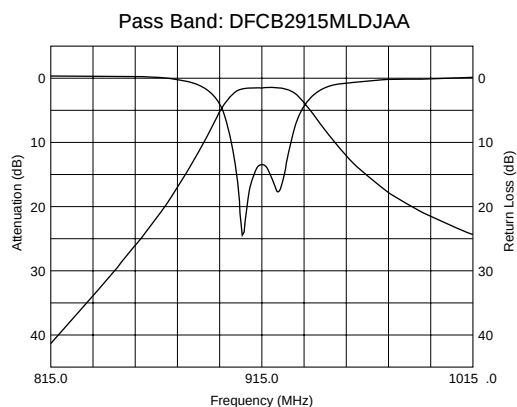
### DFCB Series 800/900MHz

#### ■ Features

1. Low insertion loss for using high Q-value dielectric resonators
2. Small and light for using high dielectric constant ceramics
3. Excellent temperature stability for temperature compensated dielectric constant (0+/-5 ppm/degree C max.)
4. Excellent mechanical stability without vibratile structure
5. SMD and reflow soldering available
6. Mountable by automatic placement machine



#### ■ Characteristics



| Application | Part Number    | f <sub>o</sub><br>(MHz) | Bandwidth<br>(MHz) | IL at BW<br>(dB max.) | Attenuation<br>(dB min.) | Operation<br>Temp.<br>(°C) |
|-------------|----------------|-------------------------|--------------------|-----------------------|--------------------------|----------------------------|
| AMPS        | DFCB2836MLDJAA | 836.5                   | 25                 | 2.6                   | 6.5 (869 to 894MHz)      | -30 to +85                 |
| CT2         | DFCB2841MLEJAA | 841                     | 4                  | 3.0                   | 38 (Fo-150MHz)           | -30 to +85                 |
| CT2         | DFCB2866MLEJAA | 866                     | 4                  | 3.0                   | 38 (Fo-150MHz)           | -30 to +85                 |
| AMPS        | DFCB2881MLDJAA | 881.5                   | 25                 | 2.6                   | 9 (824 to 849MHz)        | -30 to +85                 |
| CT1+        | DFCB2886MLEJAA | 886                     | 2                  | 3.0                   | 24 (Fo-44MHz)            | -30 to +85                 |
| GSM         | DFCB2902MLDJAA | 902.5                   | 25                 | 2.6                   | 27 (Fo-77.5MHz)          | -30 to +85                 |
| WLAN915     | DFCB2903MLEJAA | 903                     | 2                  | 3.0                   | 20 (Fo+22MHz)            | -30 to +85                 |
| CT2         | DFCB2912MLDJAA | 912                     | 4                  | 2.0                   | 50 (Fo-150MHz)           | -30 to +85                 |
| CT2         | DFCB2912MLEJAA | 912                     | 4                  | 3.0                   | 38 (Fo-150MHz)           | -30 to +85                 |
| CT1         | DFCB2914MLEJAA | 914.5                   | 1                  | 3.0                   | 24 (Fo-44MHz)            | -30 to +85                 |
| WLAN915     | DFCB2915MLDJAA | 915                     | 26                 | 2.5                   | 27 (837.5MHz)            | -35 to +85                 |
| WLAN915     | DFCB2926MLEJAA | 926.25                  | 2.7                | 2.8                   | 21 (902.4 to 905.1MHz)   | -30 to +85                 |
| WLAN915     | DFCB2927MLEJAA | 927                     | 2                  | 3.0                   | 15 (Fo-22MHz)            | -30 to +85                 |
| CT1+        | DFCB2931MLEJAA | 931                     | 2                  | 3.0                   | 24 (Fo-44MHz)            | -30 to +85                 |
| GSM         | DFCB2947MLDJAA | 947.5                   | 25                 | 2.6                   | 27 (Fo-77.5MHz)          | -30 to +85                 |
| CT1         | DFCB2959MLEJAA | 959.5                   | 1                  | 3.0                   | 30 (Fo+44MHz)            | -30 to +85                 |
| LMR         | DFCB3815MLDJAA | 815.5                   | 19                 | 2.5                   | 12 (Fo±35.5MHz)          | -30 to +85                 |
| AMPS        | DFCB3836MLDJAA | 836.5                   | 25                 | 3.0                   | 12 (869 to 894MHz)       | -30 to +85                 |
| CT2         | DFCB3841MLEJAA | 841                     | 4                  | 5.3                   | 60 (Fo-150MHz)           | -30 to +85                 |
| LMR         | DFCB3860MLDJAA | 860.5                   | 19                 | 2.5                   | 13 (Fo-35.5MHz)          | -30 to +85                 |

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| Application | Part Number    | fo<br>(MHz) | Bandwidth<br>(MHz) | IL at BW<br>(dB max.) | Attenuation<br>(dB min.) | Operation<br>Temp.<br>(°C) |
|-------------|----------------|-------------|--------------------|-----------------------|--------------------------|----------------------------|
| CT2         | DFCB3866MLEJAA | 866         | 4                  | 5.3                   | 60 (Fo-150MHz)           | -30 to +85                 |
| AMPS        | DFCB3881MLDJAA | 881.5       | 25                 | 3.0                   | 15 (824 to 849MHz)       | -30 to +85                 |
| CT1+        | DFCB3886MLEJAA | 886         | 2                  | 5.3                   | 45 (Fo-44MHz)            | -30 to +85                 |
| GSM         | DFCB3902MLDJAA | 902.5       | 25                 | 3.0                   | 45 (Fo-77.5MHz)          | -30 to +85                 |
| WLAN915     | DFCB3903MLEJAA | 903         | 2                  | 5.3                   | 29 (Fo-22MHz)            | -30 to +85                 |
| CT2         | DFCB3912MLEJAA | 912         | 4                  | 5.3                   | 60 (Fo-150MHz)           | -30 to +85                 |
| CT1         | DFCB3914MLEJAA | 914.5       | 1                  | 5.3                   | 45 (Fo-44MHz)            | -30 to +85                 |
| WLAN915     | DFCB3915MLDJAA | 915         | 26                 | 3.0                   | 15 (Fo-32.5MHz)          | -30 to +85                 |
| WLAN915     | DFCB3927MLEJAA | 927         | 2                  | 5.3                   | 29 (Fo-22MHz)            | -30 to +85                 |
| CT1+        | DFCB3931MLEJAA | 931         | 2                  | 5.3                   | 45 (Fo-44MHz)            | -30 to +85                 |
| GSM         | DFCB3947MLDJAA | 947.5       | 25                 | 3.0                   | 45 (Fo-77.5MHz)          | -30 to +85                 |
| CT1         | DFCB3959MLEJAA | 959.5       | 1                  | 5.3                   | 45 (Fo-44MHz)            | -30 to +85                 |

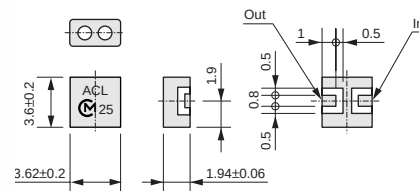
## DFCB Series 1.5-5GHz

### ■ Features

1. Low insertion loss for using high Q-value dielectric resonators
2. Small and light for using high dielectric constant ceramics
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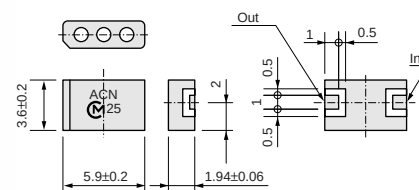
DFCB22G33LBJAA



Tolerances unless  
otherwise specified : ±0.1  
(in mm)



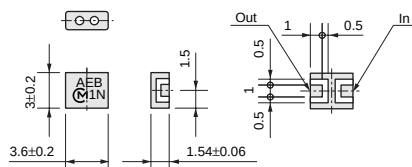
DFCB32G33LBJAA



Tolerances unless  
otherwise specified : ±0.1  
(in mm)



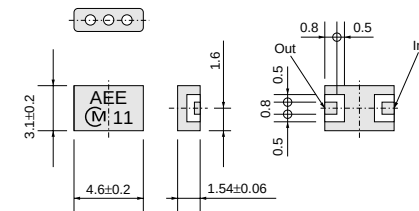
DFCB25G25LAHAA



Tolerances unless  
otherwise specified : ±0.1  
(in mm)



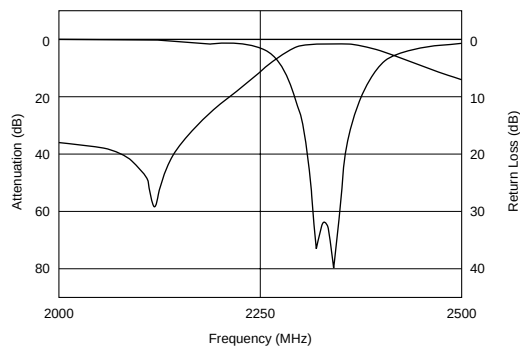
DFCB35G25LAHAA



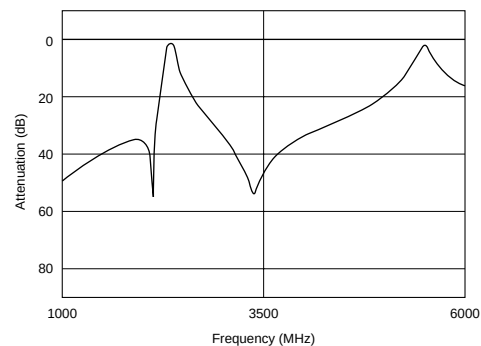
Tolerances unless  
otherwise specified : ±0.1  
(in mm)

### ■ Characteristics

Pass Band: DFCB22G33LBJAA



Spurious: DFCB22G33LBJAA

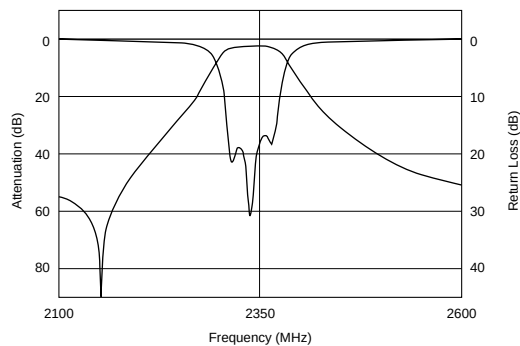


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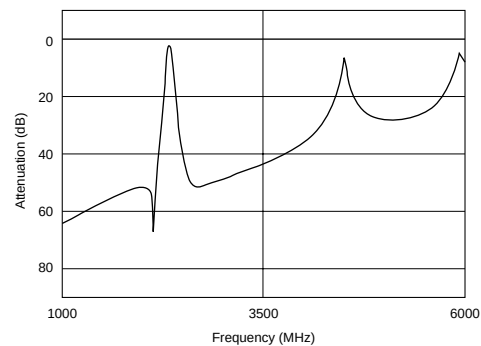
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## Characteristics

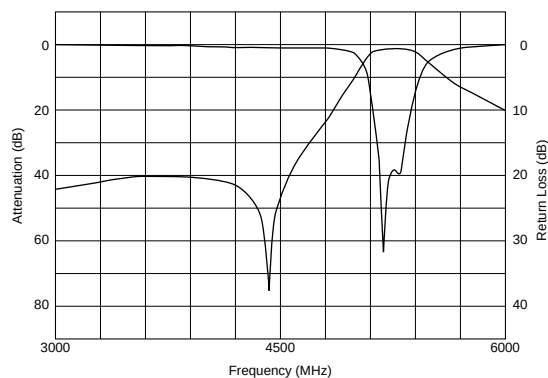
Pass Band: DFCB32G33LBJAA



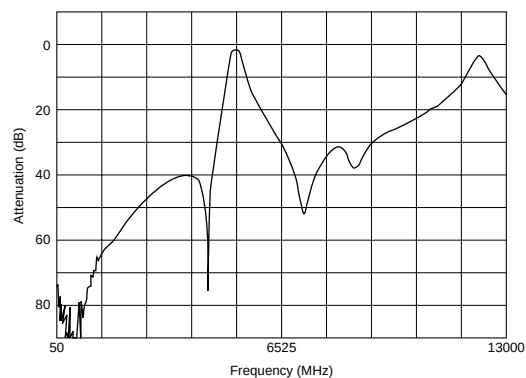
Spurious: DFCB32G33LBJAA



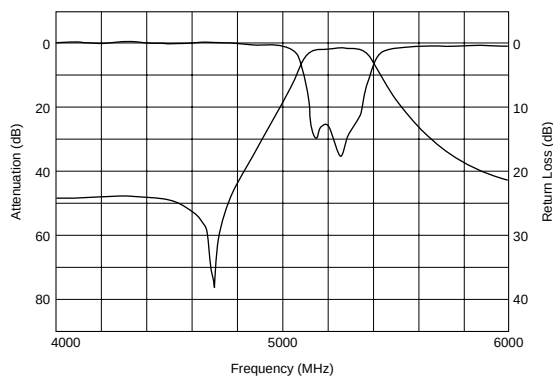
Pass Band: DFCB25G25LAHAA



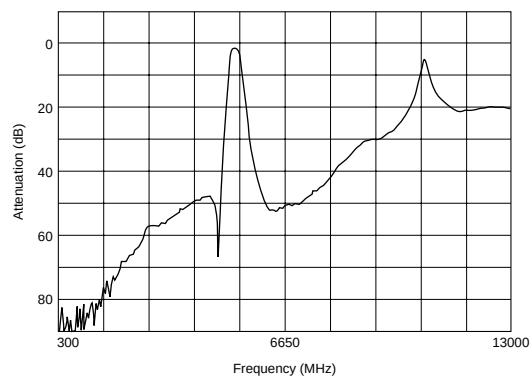
Spurious: DFCB25G25LAHAA



Pass Band: DFCB35G25LAHAA



Spurious: DFCB35G25LAHAA



| Application | Part Number    | f <sub>o</sub> (MHz) | Bandwidth (MHz) | IL at BW (dB max.) | Attenuation (dB min.) | Operation Temp. (°C) |
|-------------|----------------|----------------------|-----------------|--------------------|-----------------------|----------------------|
| DAB         | DFCB21G47LBJAA | 1472                 | 40              | 2.0                | 38 (1122MHz)          | -30 to +85           |
| PDC1.5      | DFCB21G48LBJAA | 1489                 | 24              | 1.4                | 10 (1607 to 1631MHz)  | -30 to +85           |
| GPS         | DFCB21G57LBJAB | 1575.42              | 3               | 1.3                | 37 (1850 to 1910MHz)  | -35 to +85           |
| GPS         | DFCB21G57LCJAA | 1575.42              | 2               | 3.5                | 15 (Fo±50MHz)         | -30 to +85           |
| GPS         | DFCB21G57LDJAB | 1575.42              | 2               | 3.15               | 18 (Fo±50MHz)         | -30 to +85           |
| DCS1800     | DFCB21G84LDJAA | 1842.5               | 75              | 2.0                | 20 (Fo-160MHz)        | -35 to +85           |
| PCS1.9      | DFCB21G88LDJAA | 1880                 | 60              | 1.5                | 17 (2280MHz)          | -30 to +85           |
| DECT        | DFCB21G89LBJAA | 1890                 | 20              | 2.0                | 40 (1660 to 1680MHz)  | -30 to +85           |
| DECT        | DFCB21G89LBJAB | 1890                 | 20              | 1.7                | 35 (1660 to 1680MHz)  | -30 to +85           |
| DECT        | DFCB21G89LDHAA | 1890                 | 20              | 0.9                | 27 (1655 to 1679MHz)  | -10 to +55           |
| DECT        | DFCB21G89LDJAA | 1890                 | 20              | 2.0                | 45 (1660 to 1680MHz)  | -30 to +85           |
| PHS         | DFCB21G90LBJAA | 1907.5               | 25              | 1.0                | 20 (1655 to 1680MHz)  | -15 to +55           |

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| Application  | Part Number    | fo<br>(MHz) | Bandwidth<br>(MHz) | IL at BW<br>(dB max.) | Attenuation<br>(dB min.) | Operation<br>Temp.<br>(°C) |
|--------------|----------------|-------------|--------------------|-----------------------|--------------------------|----------------------------|
| PHS          | DFCB21G90LBJAB | 1907.5      | 25                 | 1.6                   | 35 (1655 to 1680MHz)     | -15 to +55                 |
| PHS          | DFCB21G90LBJAC | 1907.5      | 25                 | 1.9                   | 45 (1655 to 1680MHz)     | -15 to +55                 |
| DECT (CHINA) | DFCB21G91LBJAA | 1910        | 20                 | 1.7                   | 34 (1675 to 1700MHz)     | -30 to +85                 |
| DECT (CHINA) | DFCB21G91LDJAA | 1910        | 20                 | 1.8                   | 40 (1675 to 1700MHz)     | -30 to +85                 |
| CDMA1.9      | DFCB21G92LBJAA | 1920        | 20                 | 1.2                   | 20 (1655 to 1694MHz)     | -30 to +85                 |
| CDMA1.9      | DFCB21G92LDJAA | 1920        | 20                 | 1.9                   | 16 (1800 to 1820MHz)     | -30 to +85                 |
| PCS1.9       | DFCB21G96LDJAA | 1960        | 60                 | 1.5                   | 17 (2360MHz)             | -30 to +85                 |
| TD-SCDMA     | DFCB22G01LBJAA | 2017.5      | 15                 | 1.5                   | 35 (1270MHz)             | -35 to +85                 |
| W-CDMA       | DFCB22G14LBJAA | 2140        | 60                 | 2.7                   | 26 (1920 to 1980MHz)     | -30 to +85                 |
| Sirius Radio | DFCB22G32LBJAA | 2326        | 14                 | 1.8                   | 8.5 (2227MHz)            | -35 to +85                 |
| XM Satellite | DFCB22G33LBJAA | 2339        | 14                 | 1.8                   | 8.5 (2240MHz)            | -35 to +85                 |
| WLAN2.4      | DFCB22G44LANAA | 2441.5      | 83                 | 1.5                   | 35 (2000MHz)             | -35 to +85                 |
| WLAN2.4      | DFCB22G44LBJAA | 2442        | 84                 | 2.0                   | 16 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4      | DFCB22G45LBJAA | 2450        | 100                | 2.0                   | 15 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4      | DFCB22G48LBJAA | 2484        | 26                 | 2.0                   | 27.5 (Fo-204MHz)         | -30 to +85                 |
| VICS         | DFCB22G50LBJAA | 2500        | 4                  | 4.5                   | 20 (2440MHz)             | -30 to +85                 |
| WLAN5G       | DFCB25G25LAHAA | 5250        | 200                | 1.5                   | 38 (4370 to 4510MHz)     | -35 to +85                 |
| WLAN5G       | DFCB25G59LAHAA | 5597.5      | 255                | 1.5                   | 11 (Fo-375MHz)           | -35 to +85                 |
| WLAN5G       | DFCB25G77LAHAA | 5775        | 100                | 1.5                   | 12 (Fo-375MHz)           | -35 to +85                 |
| ETC          | DFCB25G80LBHAA | 5800        | 100                | 2.0                   | 25 (Fo-375MHz)           | -30 to +85                 |
| DAB          | DFCB31G47LBJAA | 1472        | 40                 | 3.0                   | 45 (1100MHz)             | -35 to +85                 |
| DCS1800      | DFCB31G74LBJAA | 1747.5      | 75                 | 3.5                   | 45 (1464 to 1539MHz)     | -30 to +85                 |
| DCS1800      | DFCB31G84LBJAA | 1842.5      | 75                 | 3.5                   | 45 (1559 to 1634MHz)     | -30 to +85                 |
| DCS1800      | DFCB31G84LBJAB | 1842.5      | 75                 | 2.75                  | 45 (0.3 to 1388MHz)      | -30 to +85                 |
| PCS1.9       | DFCB31G88LBJAA | 1880        | 60                 | 3.7                   | 5 (1930MHz)              | -30 to +85                 |
| PCS1.9       | DFCB31G88LBJAB | 1880        | 60                 | 4.0                   | 41 (2043 to 2103MHz)     | -30 to +85                 |
| W-CDMA       | DFCB31G95LBJAA | 1950        | 60                 | 3.5                   | 35 (2110 to 2170MHz)     | -30 to +85                 |
| PCS1.9       | DFCB31G96LBJAA | 1960        | 60                 | 3.7                   | 5 (1910MHz)              | -30 to +85                 |
| PCS1.9       | DFCB31G96LBJAB | 1960        | 60                 | 3.0                   | 10 (1498 to 1860MHz)     | -30 to +85                 |
| PCS1.9       | DFCB31G96LBJAC | 1960        | 60                 | 2.8                   | 10 (1860MHz)             | -30 to +85                 |
| PCS1.9       | DFCB31G96LBJAE | 1960        | 60                 | 3.7                   | 20 (2065 to 2125MHz)     | -35 to +85                 |
| W-CDMA       | DFCB32G14LBJAA | 2140        | 60                 | 3.7                   | 30 (1920 to 1980MHz)     | -30 to +85                 |
| Sirius Radio | DFCB32G32LBJAA | 2326        | 14                 | 3.0                   | 24 (2227MHz)             | -35 to +85                 |
| XM Satellite | DFCB32G33LBJAA | 2339        | 14                 | 3.0                   | 24 (2240MHz)             | -35 to +85                 |
| WLAN2.4      | DFCB32G44LBJAA | 2442        | 84                 | 3.2                   | 30 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4      | DFCB32G45LBJAA | 2450        | 100                | 3.2                   | 30 (Fo-250MHz)           | -30 to +85                 |
| WLAN5G       | DFCB35G25LAHAA | 5250        | 200                | 3.3                   | 45 (4450 to 4650MHz)     | -35 to +85                 |
| WLAN5G       | DFCB35G59LAHAA | 5597.5      | 255                | 3.6                   | 45 (4750 to 5000MHz)     | -35 to +85                 |
| WLAN5G       | DFCB35G77LAHAA | 5775        | 100                | 3.0                   | 30 (Fo-375MHz)           | -35 to +85                 |
| WLAN5G       | DFCB35G80LBHAA | 5800        | 150                | 3.4                   | 10 (Fo-175MHz)           | -35 to +85                 |

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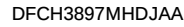


Figure 1 is a line graph showing the attenuation of a 100-MHz signal as a function of frequency. The x-axis is labeled "Frequency (MHz)" and ranges from 500.0 to 3000.0 with major grid lines every 500.0 MHz. The y-axis is labeled "Attenuation (dB)" and ranges from 0 to 80 with major grid lines every 20 dB. The curve starts at approximately 65 dB at 500 MHz, rises to a sharp peak of about 10 dB at 1000 MHz, then drops to a minimum of about 75 dB at 1200 MHz. It then rises to a broad peak of about 10 dB at 2500 MHz, and finally drops to about 20 dB at 3000 MHz.

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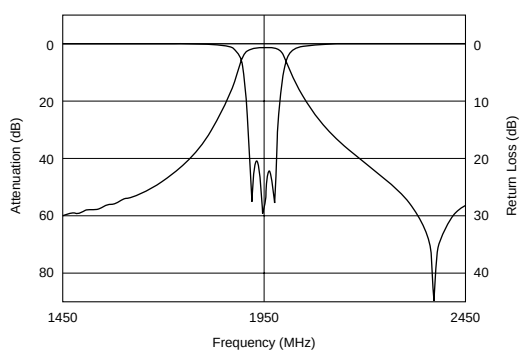
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| Application | Part Number           | fo<br>(MHz) | Bandwidth<br>(MHz) | IL at BW<br>(dB max.) | Attenuation<br>(dB min.) | Operation<br>Temp.<br>(°C) |
|-------------|-----------------------|-------------|--------------------|-----------------------|--------------------------|----------------------------|
| EGSM        | <b>DFCH4897MHDJAA</b> | 897.5       | 35                 | 4.6                   | 13 (Fo±27.5MHz)          | -30 to +85                 |
| ETACS       | <b>DFCH4933MHDJAA</b> | 933.5       | 33                 | 4.6                   | 15 (Fo±28.5MHz)          | -30 to +85                 |
| EGSM        | <b>DFCH4942MHDJAA</b> | 942.5       | 35                 | 4.6                   | 13 (Fo±27.5MHz)          | -30 to +85                 |

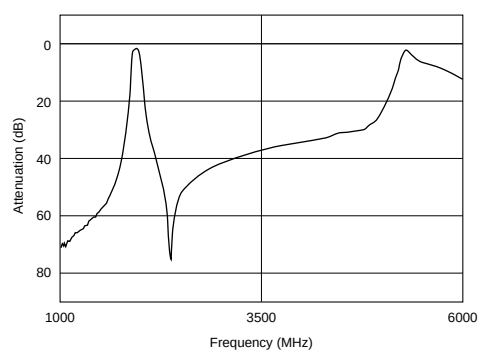
1. Low insertion loss for using high Q-value dielectric resonators
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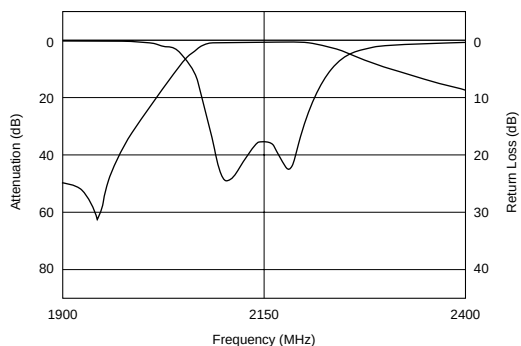
## Pass Band: DFCH31G95HDHAA



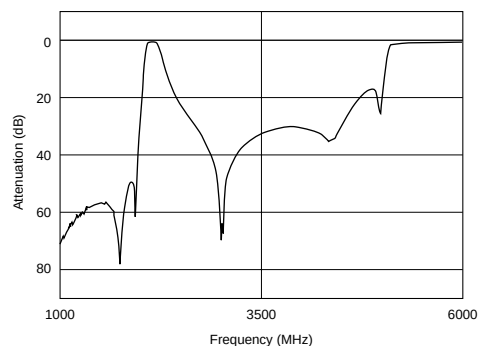
Spurious: DFCH31G95HDHAA



Pass Band: DFCH32G14HDHA



Spurious: DFCH32G14HDHA



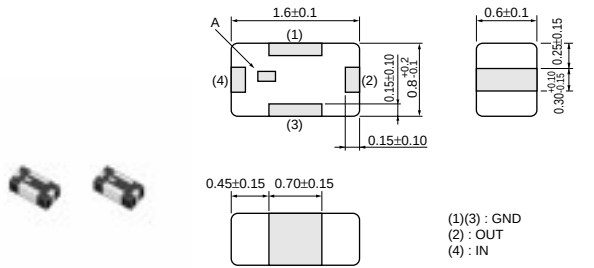


| Application | Part Number    | fo<br>(MHz) | Bandwidth<br>(MHz) | IL at BW<br>(dB max.) | Attenuation<br>(dB min.) | Operation<br>Temp.<br>(°C) |
|-------------|----------------|-------------|--------------------|-----------------------|--------------------------|----------------------------|
| GPS         | DFCH21G57HDHAA | 1575.5      | 2                  | 0.9                   | 16 (Fo-140MHz)           | -30 to +85                 |
| PHS         | DFCH21G90HDJAA | 1907.5      | 25                 | 0.7                   | 35 (Fo-227.5MHz)         | -30 to +85                 |
| WLAN2.4     | DFCH22G44HDHAA | 2442        | 84                 | 1.2                   | 15 (Fo±250MHz)           | -30 to +85                 |
| WLAN2.4     | DFCH22G45HDHAA | 2450        | 100                | 1.0                   | 16 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4     | DFCH22G48HDHAA | 2484        | 26                 | 2.5                   | 47 (Fo-270MHz)           | -30 to +85                 |
| VICS        | DFCH22G50HDHAA | 2500        | 4                  | 2.4                   | 10 (Fo±60MHz)            | -30 to +85                 |
| MSAT        | DFCH31G54HDJAA | 1542        | 34                 | 3.0                   | 30 (1626.5 to 1660.5MHz) | -30 to +85                 |
| MSAT        | DFCH31G64HDJAA | 1643.5      | 34                 | 3.0                   | 30 (1525 to 1559MHz)     | -30 to +85                 |
| DCS1800     | DFCH31G74HDJAA | 1747.5      | 75                 | 2.0                   | 8 (Fo±80MHz)             | -30 to +85                 |
| DCS1800     | DFCH31G84HDJAA | 1842.5      | 75                 | 2.0                   | 8 (Fo±80MHz)             | -30 to +85                 |
| PCS1.9      | DFCH31G88HDJAA | 1880        | 60                 | 2.2                   | 15 (Fo±100MHz)           | -30 to +85                 |
| W-CDMA      | DFCH31G95HDHAA | 1950        | 60                 | 1.8                   | 45 (1550MHz)             | -30 to +85                 |
| PCS1.9      | DFCH31G96HDJAA | 1960        | 60                 | 2.2                   | 15 (Fo±100MHz)           | -30 to +85                 |
| W-CDMA      | DFCH32G14HDHAA | 2140        | 60                 | 1.3                   | 52 (1325 to 1385MHz)     | -30 to +85                 |
| MMDS        | DFCH32G15HDHAB | 2156        | 20                 | 3.0                   | 36 (2050MHz)             | -35 to +85                 |
| WLAN2.4     | DFCH32G44HDHAA | 2442        | 84                 | 2.4                   | 36 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4     | DFCH32G45HDHAA | 2450        | 100                | 2.3                   | 36 (Fo-250MHz)           | -30 to +85                 |
| WLAN2.4     | DFCH32G48HDHAA | 2484        | 26                 | 3.0                   | 45 (Fo-270MHz)           | -30 to +85                 |
| DCS1800     | DFCH41G74HDJAA | 1747.5      | 75                 | 3.6                   | 10 (Fo±57.5MHz)          | -30 to +85                 |
| DCS1800     | DFCH41G84HDJAA | 1842.5      | 75                 | 3.6                   | 10 (Fo±57.5MHz)          | -30 to +85                 |
| PCS1.9      | DFCH41G88HDJAA | 1880        | 60                 | 4.5                   | 12 (Fo±50MHz)            | -30 to +85                 |
| PCS1.9      | DFCH41G96HDJAA | 1960        | 60                 | 4.5                   | 12 (Fo±50MHz)            | -30 to +85                 |
| MMDS        | DFCH42G59HDHAB | 2593        | 186                | 1.8                   | 50 (Fo-400MHz)           | -35 to +85                 |

# for RF/Local

## Chip Multilayer LC Filters (BPF)

### ● LFB18/21/2H/31\_SG Series

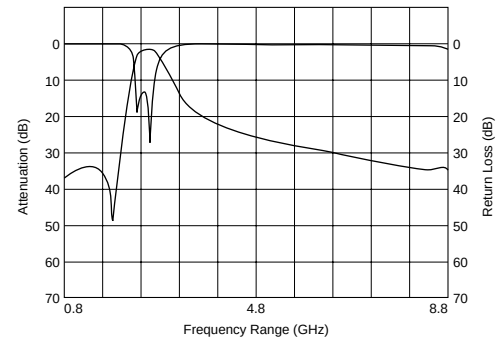


LFB18\_SG Series

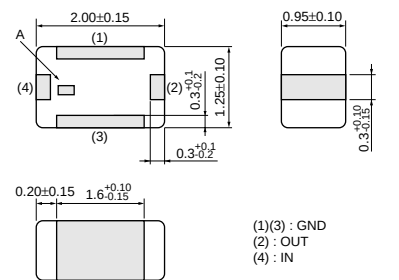
A : Directional Input Mark

All the technical data and information contained herein are subject to change without prior notice. (in mm)

Frequency Characteristics



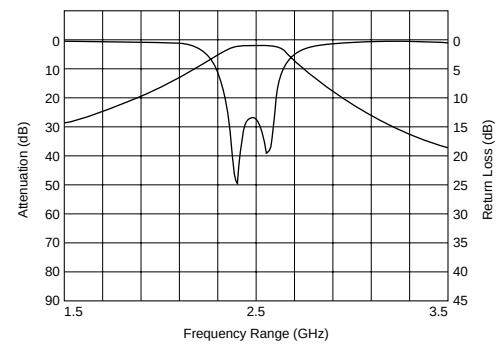
LFB21\_SG Series



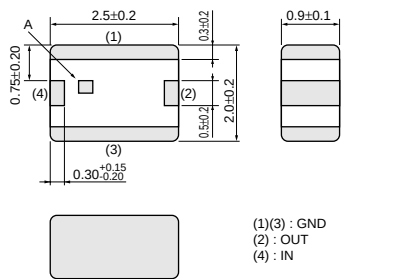
A : Directional Input Mark

All the technical data and information contained herein are subject to change without prior notice. (in mm)

Frequency Characteristics



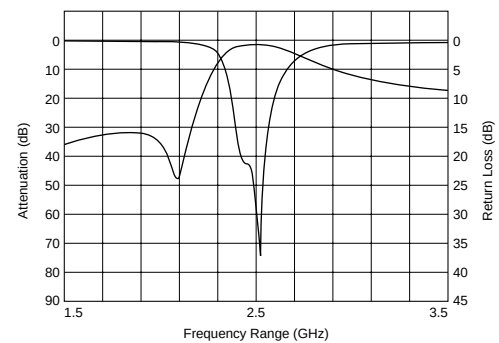
LFB2H\_SG Series



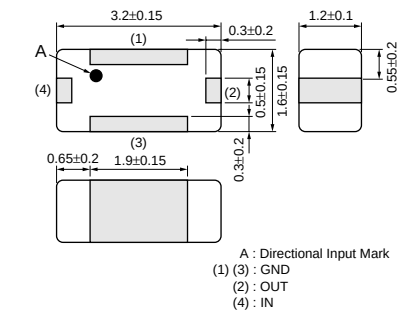
A : Directional Input Mark

All the technical data and information contained herein are subject to change without prior notice. (in mm)

Frequency Characteristics



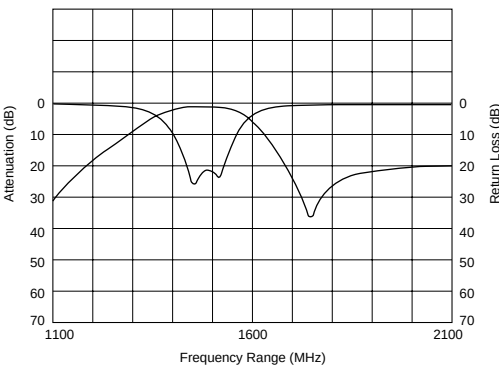
LFB31\_SG Series



A : Directional Input Mark

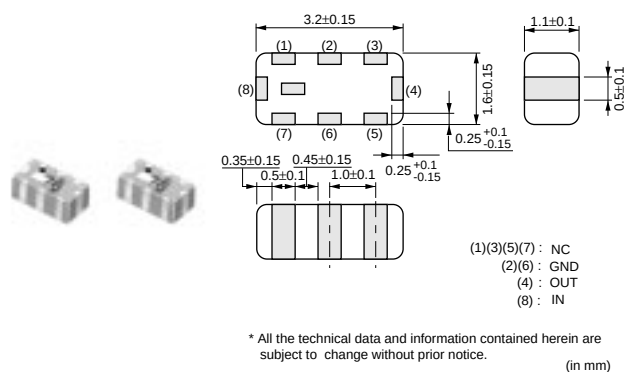
All the technical data and information contained herein are subject to change without prior notice. (in mm)

Frequency Characteristics

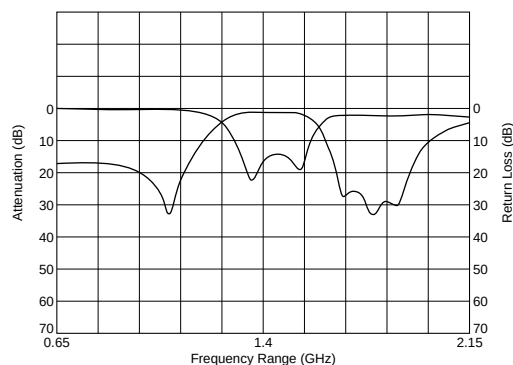


| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB182G45SG9A246 | 2450                                | fo±50                | 2.2 max. (at 25°C)        | 24.5 min. at 880~960MHz              | 12.5 min. at 1710~1990MHz             |
| LFB212G45SG8A127 | 2450                                | fo±50                | 1.5 max. (at 25°C)        | 25 min. at 1200~1300MHz              | 10.0 min. at 2000MHz                  |
| LFB212G45SG8A166 | 2450                                | fo±50                | 1.4 max. (at 25°C)        | 30 min. at 880~915MHz                | 30 min. at 1710~1910MHz               |
| LFB212G45SG8A192 | 2450                                | fo±50                | 2.6 max. (at 25°C)        | 40 min. at 880~960MHz                | 38 min. at 1710~1990MHz               |
| LFB215G12SG8A178 | 5125                                | fo±225               | 1.5 max. (at 25°C)        | 25 min. at 4200MHz                   | 17 min. at 2x(fo±225)MHz              |
| LFB215G12SG8A183 | 5125                                | fo±225               | 1.5 max. (at 25°C)        | 10.0 min. at 4250MHz                 | 10.0 min. at 5900MHz                  |
| LFB215G25SG8A144 | 5250                                | fo±100.0             | 1.5 max. (at 25°C)        | 30 min. at 3450MHz                   | -                                     |
| LFB215G37SG8A180 | 5375                                | fo±475               | 1.8 max. (at 25°C)        | 29.5 min. at 500~4000MHz             | 34.5 min. at 3450MHz                  |
| LFB215G37SG8A185 | 5375                                | fo±475               | 2.2 max. (at 25°C)        | 40 min. at 340~1195MHz               | 21 min. at 2140~3580MHz               |
| LFB215G51SG8A132 | 5512                                | fo±363               | 1.9 max. (at 25°C)        | 30 min. at 500~4000MHz               | 20 min. at 4600MHz                    |
| LFB215G51SG8A154 | 5512                                | fo±363               | 1.5 max. (at 25°C)        | 30 min. at 500~4000MHz               | 20 min. at 4600MHz                    |
| LFB215G78SG8A170 | 5787.5                              | fo±62.5              | 2.2 max. (at 25°C)        | 35 min. at 3275~3400MHz              | 37 min. at 2x(fo±62.5)MHz             |
| LFB2H2G45SG7A134 | 2450                                | fo±50                | 1.7 max. (at 25°C)        | 25 min. at 1750MHz                   | 25 min. at 2100MHz                    |
| LFB2H2G45SG7A135 | 2450                                | fo±50                | 2.7 max. (at 25°C)        | 40 min. at 880~915MHz                | 40 min. at 1710~1950MHz               |
| LFB2H2G45SG7A158 | 2450                                | fo±50                | 1.2 max. (at 25°C)        | 30 min. at 880~915MHz                | 30 min. at 1710~1785MHz               |
| LFB2H2G45SG7A159 | 2450                                | fo±50                | 2.1 max. (at 25°C)        | 45 min. at 880~915MHz                | 48 min. at 1710~1990MHz               |
| LFB2H2G45SG7A204 | 2450                                | fo±50                | 3 max. (at 25°C)          | 45 min. at 880~915MHz                | 27 min. at 1710~1990MHz               |
| LFB2H5G78SG7A175 | 5787.5                              | fo±62.5              | 2.5 max. (at 25°C)        | 51.5 min. at 902~928MHz              | 41 min. at 3919~4044MHz               |
| LFB311G48SG1-985 | 1489                                | fo±12.0              | 1.5 max. (at 25°C)        | 25 min. at (fo±12.0)+260MHz          | 28 min. at 1749MHz                    |
| LFB311G90SG1-799 | 1906.5                              | fo +24.5/-13.5MHz    | 2.5 max. (at 25°C)        | 40 min. at 1397.05~1422.85MHz        | 35 min. at 1645.5~1671.3MHz           |
| LFB311G90SG2-797 | 1906.5                              | fo±13.5              | 2.7 max. (at 25°C)        | 40 min. at 1427~1454MHz              | 35 min. at 1660~1687MHz               |
| LFB311G95SG3A564 | 1950                                | fo±30                | 3.5 max. (at 25°C)        | 20 min. at 2110~2170MHz              | 25 min. at 2490~2550MHz               |
| LFB312G45SG2A509 | 2450                                | fo±50                | 2 max. (at 25°C)          | 38 min. at 902~928MHz                | 15 min. at 2100~2200MHz               |
| LFB312G45SG7A572 | 2450                                | fo±50                | 2.5 max. (at 25°C)        | 37 min. at 902~928MHz                | 20 min. at 2100~2200MHz               |

● LFB31\_SL Series (1206)

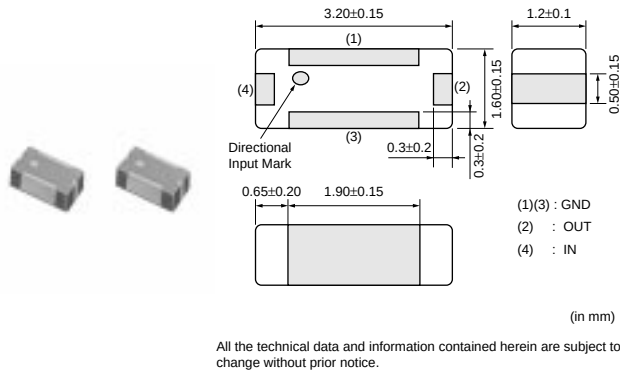


Frequency Characteristics

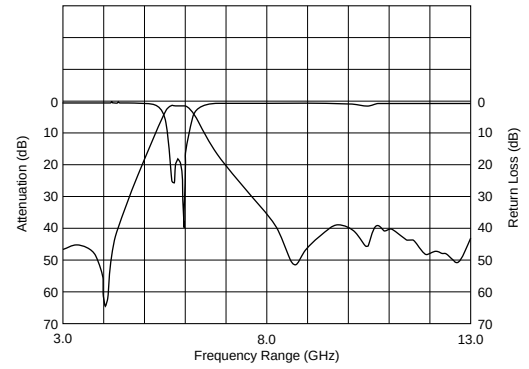


| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB311G40SL1A562 | 1402.5                              | fo±77.5              | 3 max. (at 25°C)          | 20 min. at 1005~1080MHz              | 20 min. at 1725~1760MHz               |

● LFB31\_SN Series (1206)

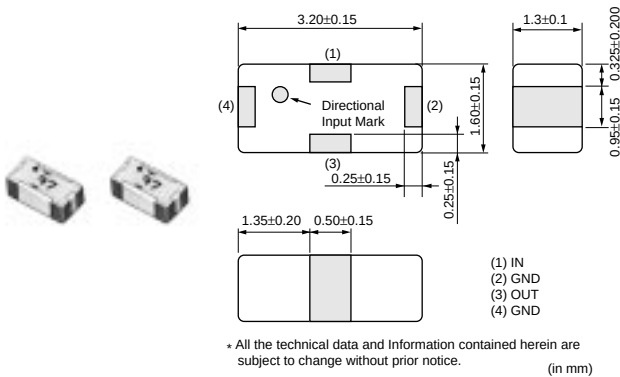


Frequency Characteristics

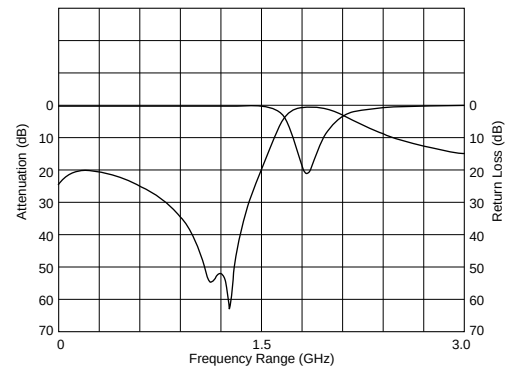


| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB315G82SN5-996 | 5820                                | fo±30                | 2 max. (at 25°C)          | 35 min. at 2000MHz                   | 30 min. at 3000MHz                    |

● LFB31\_SP Series (1206)

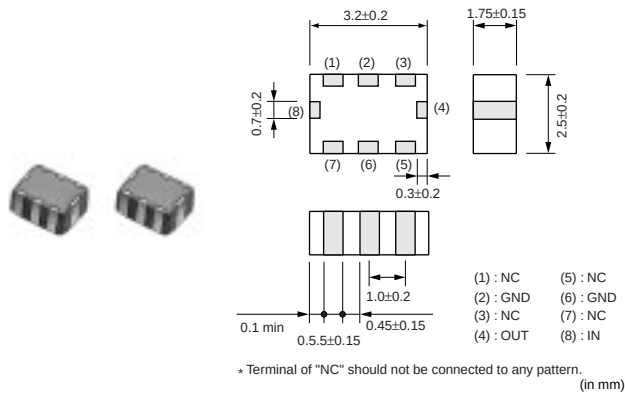


Frequency Characteristics

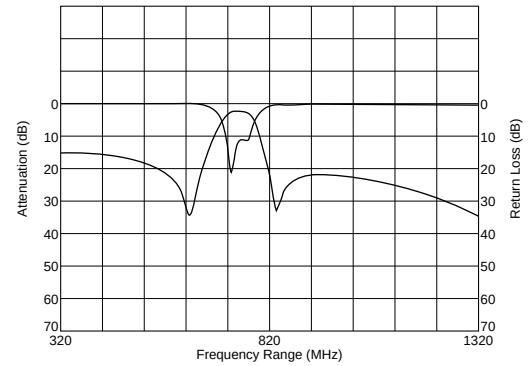


| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB311G89SP1A542 | 1890                                | fo±10.0              | 0.85 max. (at 25°C)       | 29 min. at 1416.9~1436.9Hz           | 22 min. at 900MHz                     |
| LFB311G90SP1-798 | 1906.5                              | fo±13.5              | 1.0 max. (at 25°C)        | 38 min. at 1405~1440MHz              | 12.0 min. at 1649~1680MHz             |
| LFB312G45SP1A502 | 2450                                | fo±50                | 1.4 max. (at 25°C)        | 20 min. at 902~928MHz                | 35 min. at 1500~1550MHz               |

● LFB32\_SA Series (1210)

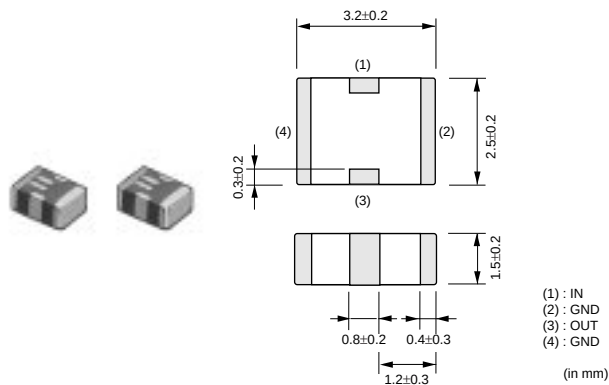


Frequency Characteristics

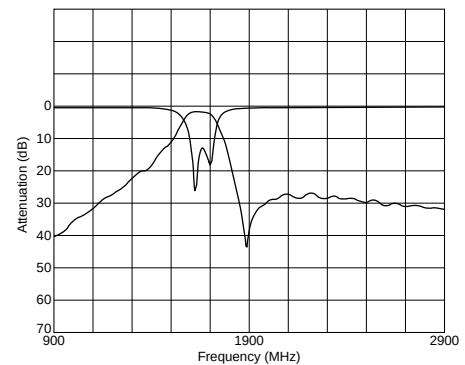


| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB32741MSA1-744 | 741.5                               | fo±19.5              | 3.5 max. (at 25°C)        | 20 min. at 612~650MHz                | 20 min. at 832~870MHz                 |
| LFB32836MSA1-747 | 836.5                               | fo±12.5              | 3 max. (at 25°C)          | 19.5 min. at fo±77.5MHz              | -                                     |
| LFB32851MSA1A540 | 851                                 | fo±19                | 3.5 max. (at 25°C)        | 20 min. at fo-90.0MHz                | 18 min. at fo+90.0MHz                 |
| LFB32881MSA1-781 | 881.5                               | fo±12.5              | 4.8 max. (at 25°C)        | 11.0 min. at 824~837MHz              | 5 min. at 846~849MHz                  |
| LFB32881MSA1A556 | 881.5                               | fo±12.5              | 3.2 max. (at 25°C)        | 20 min. at fo±77.5MHz                | -                                     |
| LFB32902MSA1A536 | 902.5                               | fo±12.5              | 3 max. (at 25°C)          | 15 min. at 802~827MHz                | 15 min. at 978~1003MHz                |
| LFB32906MSA1A539 | 906                                 | fo±19                | 3.5 max. (at 25°C)        | 20 min. at fo-90.0MHz                | 18 min. at fo+90.0MHz                 |
| LFB32947MSA1A537 | 947                                 | fo±12.5              | 3 max. (at 25°C)          | 9 min. at D.C.~835MHz                | 6 min. at 1000~1394MHz                |
| LFB32991MSA1-762 | 991.15                              | fo±12.5              | 3 max. (at 25°C)          | 20 min. at 869~894MHz                | 20 min. at 1088.3~1113.3MHz           |
| LFB321G44SA1A538 | 1441.0                              | fo±12.0              | 3 max. (at 25°C)          | 25 min. at 1607~1631MHz              | -                                     |
| LFB321G61SA1A555 | 1619                                | fo±12.0              | 2.8 max. (at 25°C)        | 20 min. at 1477~1501MHz              | 16 min. at 1429~1453MHz               |

● LFB32\_SB Series (1210)

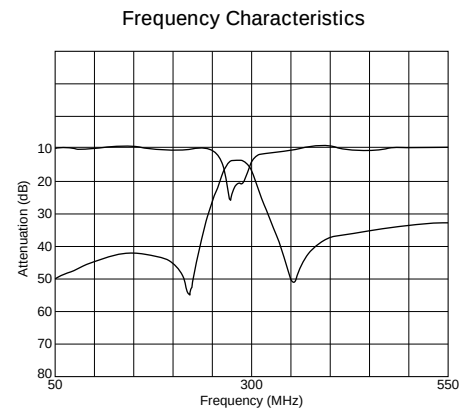
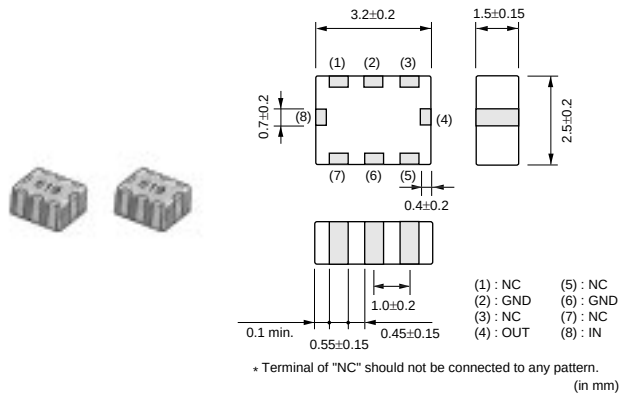


Frequency Characteristics



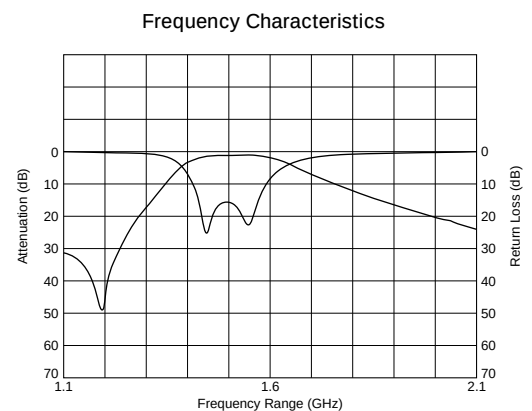
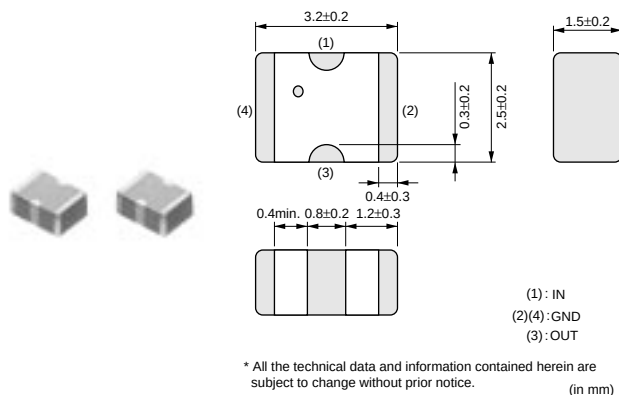
| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB321G66SB1-560 | 1662                                | fo±12.5              | 2 max. (at 25°C)          | 27 min. at 1895~1918MHz              | 20 min. at 2xfo MHz                   |
| LFB321G89SB1-591 | 1890                                | fo±10.0              | 1.2 max. (at 25°C)        | 21 min. at 1655~1675MHz              | 15 min. at 2xfo MHz                   |
| LFB321G90SB1-559 | 1907.5                              | fo±12.5              | 1.0 max. (at 25°C)        | 35 min. at 1397.5~1440MHz            | 20 min. at 1646~1680MHz               |

● LFB32\_SC Series (1210)



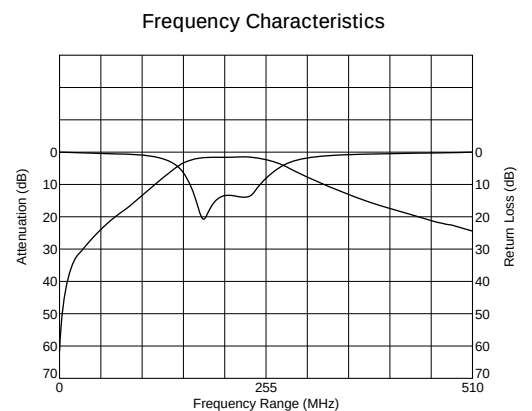
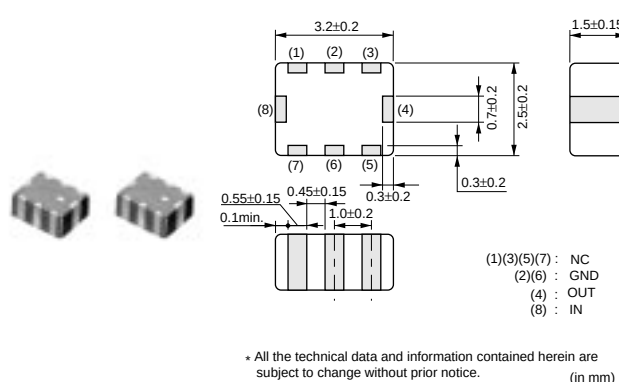
| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB32284MSC1-596 | 284                                 | fo±4                 | 3.8 max. (at 25°C)        | 31 min. at 220~228MHz                | 23 min. at 340~348MHz                 |
| LFB32312MSC1-597 | 312.25                              | fo±1.0               | 3.5 max. (at 25°C)        | 26 min. at 249.8MHz                  | 26 min. at 374.7MHz                   |
| LFB32315MSC1-604 | 315                                 | fo±0.5               | 3.5 max. (at 25°C)        | 45 min. at 180MHz                    | 29 min. at 470MHz                     |
| LFB32315MSC1-619 | 315                                 | fo±0                 | 3.5 max. (at 25°C)        | 30 min. at 235MHz                    | 30 min. at 395MHz                     |
| LFB32426MSC1-603 | 426.5                               | fo±0.5               | 3.6 max. (at 25°C)        | 25 min. at 366.5MHz                  | 20 min. at 486.5MHz                   |
| LFB32820MSC2-749 | 820                                 | fo±10.0              | 1.3 max. (at 25°C)        | 22 min. at 1070~1090MHz              | -                                     |
| LFB32847MSC2-766 | 847.5                               | fo±37.5              | 1.5 max. (at 25°C)        | 16 min. at 550~625MHz                | 15 min. at 1070~1145MHz               |

● LFB32\_SJ Series (1210)



| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFB321G47SJ1-794 | 1472                                | fo±20                | 1.3 max. (at 25°C)        | 30 min. at 1172MHz                   | -                                     |

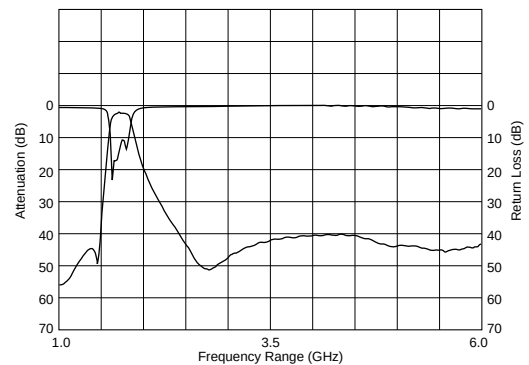
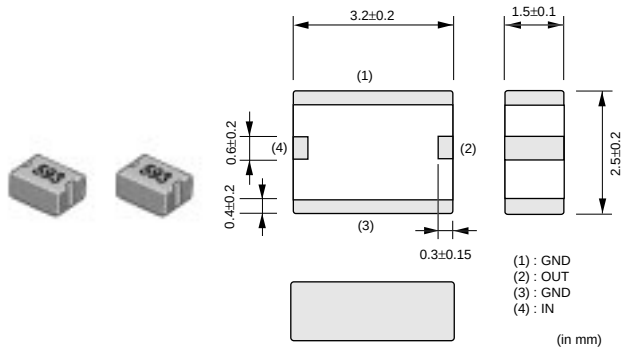
● LFB32\_SK Series (1210)



| Part Number             | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|-------------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| <b>LFB32205MSK1-948</b> | 205.5                               | fo±31.5              | 1.5 max. (at 25°C)        | 10.0 min. at 100MHz                  | 20 min. at 500MHz                     |

● LFB32\_SN Series (1210)

Frequency Characteristics



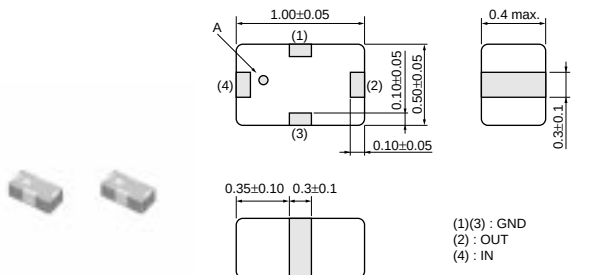
| Part Number             | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|-------------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| <b>LFB321G74SN1-770</b> | 1747.5                              | fo±37.5              | 2.5 max. (at 25°C)        | 20 min. at D.C.~1350MHz              | 30 min. at 1350~1425MHz               |
| <b>LFB321G84SN1-796</b> | 1842.5                              | fo±37.5              | 2.5 max. (at 25°C)        | 48 min. at 500~1450MHz               | 40 min. at 1450~1480MHz               |
| <b>LFB321G90SN1-593</b> | 1907.5                              | fo±12.5              | 2.5 max. (at 25°C)        | 40 min. at 1406.5~1440MHz            | 35 min. at 1655~1680MHz               |
| <b>LFB322G45SN1-947</b> | 2450                                | fo±50                | 2.5 max. (at 25°C)        | 40 min. at 1950MHz                   | 16 min. at 2200MHz                    |
| <b>LFB322G45SN1A504</b> | 2450                                | fo±50                | 1.8 max. (at 25°C)        | 48 min. at 902~928MHz                | 50 min. at 1500~1550MHz               |
| <b>LFB322G45SN5A515</b> | 2450                                | fo±50                | 2.5 max. (at 25°C)        | 40 min. at 880~1250MHz               | 20 min. at 1250~1710MHz               |

for RF/Local

Chip Multilayer LC Filters (LPF)

● LFL15\_TC (0402) /LFL18\_TC (0603) /LFL21\_TC (0805) Series

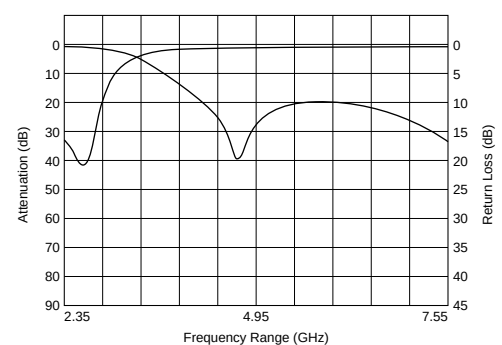
Frequency Characteristics



LFL15\_TC Series

A : Directional Input Mark

All the technical data and information contained herein are subject to change without prior notice.

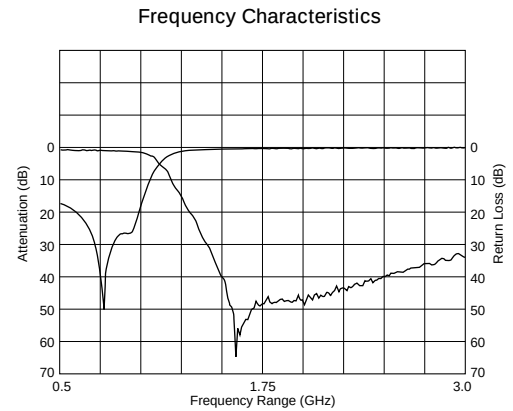
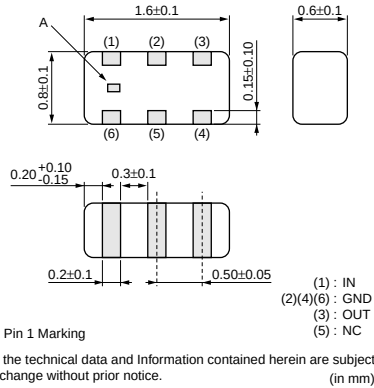


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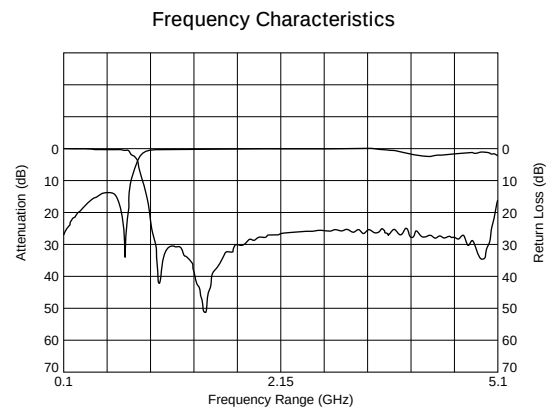
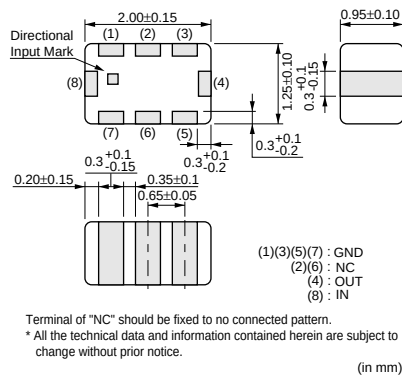
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LFL18\_TC Series



LFL21\_TC Series



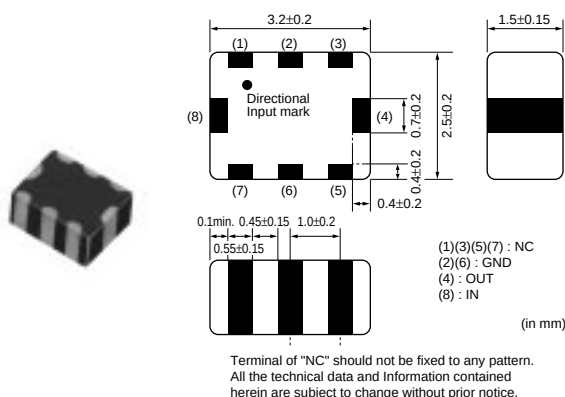
| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I) (dB) | Attenuation (Absolute Value) II) (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|--------------------------------------|---------------------------------------|
| LFL152G45TC1A219 | 2450                                | fo±50                | 0.45 max. (at 25°C)       | 21 min. at 2x(fo±50.0)MHz            | 21 min. at 3x(fo±50.0)MHz             |
| LFL18815MTC2A072 | 815.5                               | fo±9.5               | 0.80 max. (at 25°C)       | 35 min. at 2x(fo±9.5)MHz             | 30 min. at 3x(fo±9.5)MHz              |
| LFL18924MTC1A052 | 924.5                               | fo±35                | 0.40 max. (at 25°C)       | 20 min. at 2x(fo±35.0)MHz            | 15 min. at 3x(fo±35.0)MHz             |
| LFL182G45TC1A108 | 2450                                | fo±50                | 0.37 max. (at 25°C)       | 27 min. at 4800~5000MHz              | 25 min. at 7200~7500MHz               |
| LFL182G45TC1A202 | 2450                                | fo±50                | 0.40 max. (at 25°C)       | 27 min. at 4800~5000MHz              | 30 min. at 7200~7500MHz               |
| LFL21600MTC1A002 | 600                                 | fo±250               | 1.37 max. (at 25°C)       | 20 min. at 1550~4250MHz              | 9 min. at 1100MHz                     |
| LFL21847MTC1A006 | 847.5                               | fo±37.5              | 0.75 max. (at 25°C)       | 30 min. at 2x(fo±37.5)MHz            | 30 min. at 3x(fo±37.5)MHz             |
| LFL21902MTC1A018 | 902.5                               | fo±12.5              | 0.6 max. (at 25°C)        | 30 min. at 2x(fo±12.5)MHz            | 30 min. at 3x(fo±12.5)MHz             |
| LFL211G35TC1A001 | 1350.0                              | fo±250               | 0.92 max. (at 25°C)       | 25 min. at 2300~5000MHz              | -                                     |
| LFL211G44TC1A014 | 1441.0                              | fo±12.0              | 0.47 max. (at 25°C)       | 31 min. at 2xfoMHz                   | 26 min. at 3xfoMHz                    |
| LFL211G79TC1A011 | 1795                                | fo±85                | 0.47 max. (at 25°C)       | 30 min. at 2x(1747.5±37.5)MHz        | 25 min. at 2x(1842.5±37.5)MHz         |
| LFL211G89TC1A015 | 1890                                | fo±10.0              | 0.47 max. (at 25°C)       | 30 min. at 2x(fo±10.0)MHz            | 26 min. at 3x(fo±10.0)MHz             |
| LFL211G90TC1A008 | 1907.5                              | fo±12.5              | 0.47 max. (at 25°C)       | 30 min. at 2x(fo±12.5)MHz            | 25 min. at 3x(fo±12.5)MHz             |
| LFL211G92TC1A060 | 1920                                | fo±70                | 0.6 max. (at 25°C)        | 24 min. at 3335~3700MHz              | 30 min. at 3700~3820MHz               |
| LFL212G45TC1A007 | 2450                                | fo±50                | 0.50 max. (at 25°C)       | 27 min. at 2x(fo±50.0)MHz            | 30 min. at 3x(fo±50.0)MHz             |
| LFL215G25TC1A156 | 5250                                | fo±100.0             | 0.70 max. (at 25°C)       | 24 min. at 2x(fo±100)MHz             | 19 min. at 3x(fo±100)MHz              |
| LFL215G37TC1A210 | 5375                                | fo±475               | 0.70 max. (at 25°C)       | 30 min. at 2x(fo±475)MHz             | 20 min. at 3x(fo±475)MHz              |
| LFL215G51TC1A149 | 5512                                | fo±363               | 0.70 max. (at 25°C)       | 30 min. at 2x(fo±363)MHz             | 20 min. at 3x(fo±363)MHz              |
| LFL215G78TC1A155 | 5787.5                              | fo±62.5              | 0.70 max. (at 25°C)       | 30 min. at 2x(fo±62.5)MHz            | 20 min. at 3x(fo±62.5)MHz             |



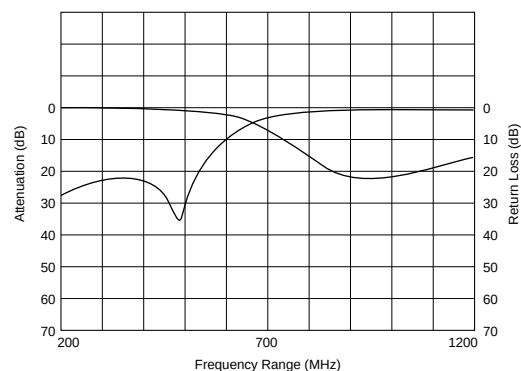
## for RF/Local

## Chip Multilayer LC Filters (HPF)

## ● LFH32\_RA Series (1210)



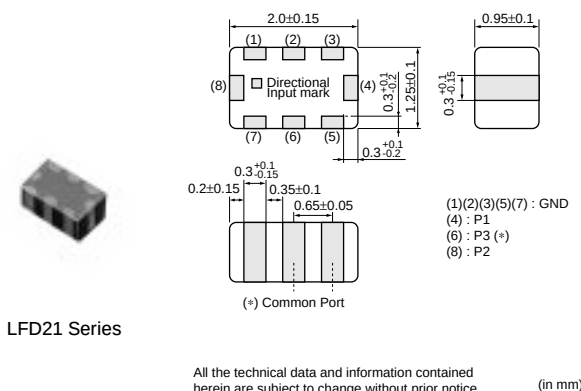
## Frequency Characteristics



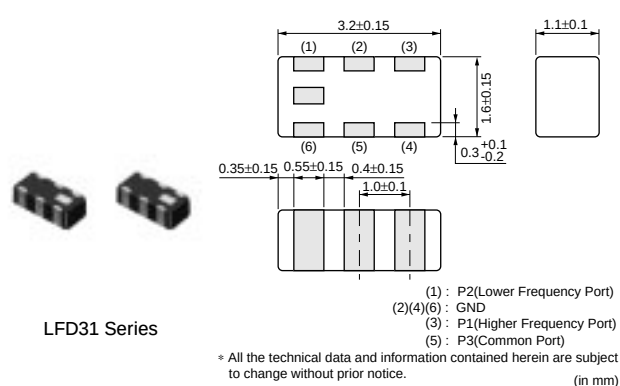
| Part Number      | Nominal Center Frequency (fo) (MHz) | Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) I (dB) | Attenuation (Absolute Value) II (dB) |
|------------------|-------------------------------------|----------------------|---------------------------|-------------------------------------|--------------------------------------|
| LFH32942MRA1A517 | 942.5                               | fo±17.5              | 0.5 max. (at 25°C)        | 4.5 min. at 480~600MHz              | 25 min. at 480MHz                    |

## for RF/Local

## Chip Multilayer Diplexers



LFD21 Series

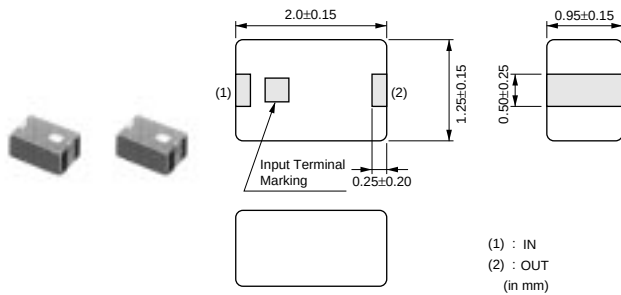


LFD31 Series

| Part Number      | Frequency Range[P1](f1) (MHz) | Frequency Range[P2](f2) (MHz) | Insertion Loss [P1-P3](in f1) (dB) | Insertion Loss [P2-P3](in f2) (dB) | Attenuation [P1-P3](in f2) (dB) | Attenuation [P2-P3](in f1) (dB) |
|------------------|-------------------------------|-------------------------------|------------------------------------|------------------------------------|---------------------------------|---------------------------------|
| LFD212G45DP3A140 | 5250 ±100.0MHz                | 2450 ±50.0MHz                 | 0.65 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 20 min.                         |
| LFD212G45DP3A151 | 5487.5 ±337.5MHz              | 2450 ±50.0MHz                 | 0.75 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 16 min.                         |
| LFD212G45DP3A188 | 5375 ±475.0MHz                | 2450 ±50.0MHz                 | 0.75 max. (at 25°C)                | 0.50 max. (at 25°C)                | 21 min.                         | 17 min.                         |
| LFD212G45DP4A189 | 2450 ±50.0MHz                 | 5375 ±475.0MHz                | 0.5 max. (at 25°C)                 | 0.75 max. (at 25°C)                | 17 min.                         | 21 min.                         |
| LFD21859MDP1A049 | 1920 ±70.0MHz                 | 859 ±35.0MHz                  | 0.45 max. (at 25°C)                | 0.40 max. (at 25°C)                | 19 min.                         | 20 min.                         |
| LFD21884MDP1A062 | 1906.5 ±13.0MHz               | 884 ±74.0MHz                  | 0.45 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 20 min.                         |
| LFD21920MDP1A048 | 1795 ±85.0MHz                 | 920 ±40.0MHz                  | 0.55 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 16 min.                         |
| LFD31859MDP1A009 | 1920 ±70.0MHz                 | 859 ±35.0MHz                  | 0.45 max. (at 25°C)                | 0.40 max. (at 25°C)                | 20 min.                         | 20 min.                         |
| LFD31884MDP1A030 | 1906.5 ±13.0MHz               | 884 ±74.0MHz                  | 0.45 max. (at 25°C)                | 0.50 max. (at 25°C)                | 19 min.                         | 19 min.                         |
| LFD31897MDP1A010 | 1810 ±100.0MHz                | 897.5 ±17.5MHz                | 0.6 max. (at 25°C)                 | 0.5 max. (at 25°C)                 | 20 min.                         | 17 min.                         |
| LFD31920MDP1A003 | 1795 ±85.0MHz                 | 920 ±40.0MHz                  | 0.55 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 16 min.                         |
| LFD31920MDP1A040 | 1850 ±140.0MHz                | 920 ±40.0MHz                  | 0.65 max. (at 25°C)                | 0.50 max. (at 25°C)                | 20 min.                         | 15 min.                         |
| LFD31993MDP1A032 | 2072.34 ±30.0MHz              | 993.84 ±12.5MHz               | 0.4 max. (at 25°C)                 | 0.4 max. (at 25°C)                 | 20 min.                         | 20 min.                         |

# for RF/Local

## Chip Multilayer LC Filters (Trap)

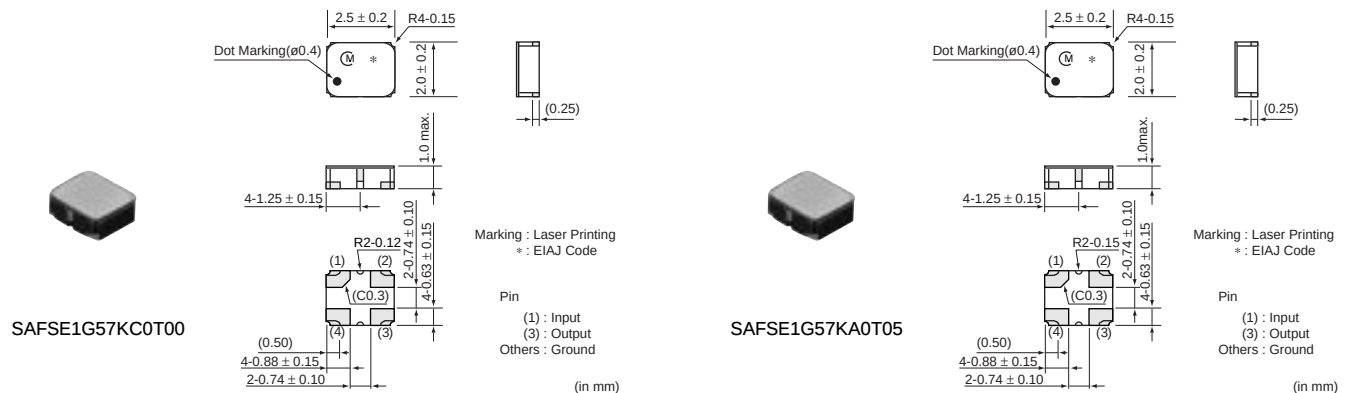


| Part Number      | Center Frequency of Rejection Band (MHz) | Pass Bandwidth (BW) (MHz) | Insertion Loss in BW (dB) | Attenuation (Absolute Value) (dB) |
|------------------|------------------------------------------|---------------------------|---------------------------|-----------------------------------|
| LFE21560MFA1A004 | 560                                      | 810~885                   | 0.7 max. (at 25°C)        | 10.0 min. at 550~570MHz           |

# for RF/Local

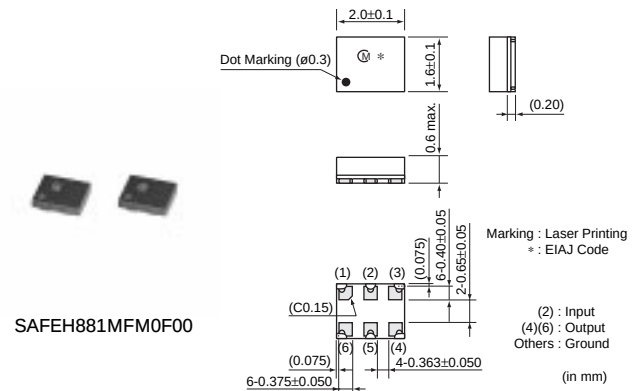
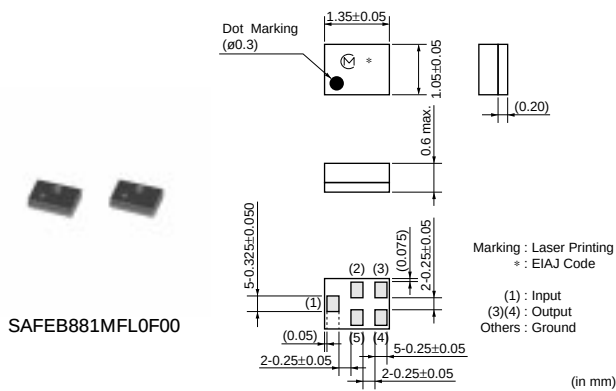
## SAW Filters

### ● GPS



| Part Number     | Center Frequency (MHz) | Insertion Loss (dB)                 | Ripple (dB max.)               | VSWR                               | Input Impedance | Output Impedance |
|-----------------|------------------------|-------------------------------------|--------------------------------|------------------------------------|-----------------|------------------|
| SAFSE1G57KC0T00 | 1575.5                 | 2.5 max.<br>(1574MHz~1577MHz)       | 0.7<br>(1574MHz~1577MHz)       | 1.6max<br>(1574MHz~1577MHz)        | 50ohm           | 50ohm            |
| SAFSD1G57FA0T00 | 1575.5                 | 1.6 max.<br>(1574MHz~1577MHz)       | 0.5<br>(1574MHz~1577MHz)       | 1.6max.<br>(1574MHz~1577MHz)       | 50ohm           | 100ohm           |
| SAFSE1G57KA0T05 | 1575.5                 | 1.6 max.<br>(1574MHz~1577MHz)       | 0.7<br>(1574MHz~1577MHz)       | 1.6max.<br>(1574MHz~1577MHz)       | 50ohm           | 50ohm            |
| SAFSE1G57KA0T09 | 1575.42                | 2.0 max.<br>(1574.42MHz~1576.42MHz) | 1.5<br>(1574.42MHz~1576.42MHz) | 1.8max.<br>(1574.42MHz~1576.42MHz) | 50ohm           | 50ohm            |

# GSM850

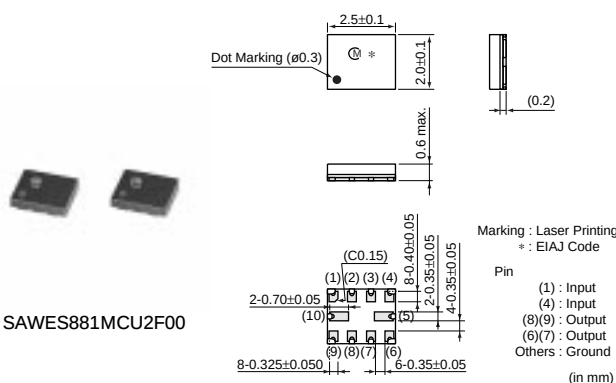


| Part Number     | Center Frequency (MHz) | Insertion Loss (dB)         | Ripple (dB max.)       | VSWR                       | Input Impedance | Output Impedance |
|-----------------|------------------------|-----------------------------|------------------------|----------------------------|-----------------|------------------|
| SAFEB881MFL0F00 | 881.5                  | 2.3 max.<br>(869MHz~894MHz) | 1.2<br>(869MHz~894MHz) | 1.8max.<br>(869MHz~894MHz) | 50ohm           | 150ohm//82nH     |
| SAFEH881MFM0F00 | 881.5                  | 2.4 max.<br>(869MHz~894MHz) | 1.5<br>(869MHz~894MHz) | 1.9max.<br>(869MHz~894MHz) | 50ohm           | 150ohm//82nH     |
| SAFEF881MAL0F00 | 881.5                  | 2.6 max.<br>(869MHz~894MHz) | 1.4<br>(869MHz~894MHz) | 1.7max.<br>(869MHz~894MHz) | 50ohm           | 50ohm            |
| SAFED881MFL0F05 | 881.5                  | 1.9 max.<br>(869MHz~894MHz) | 1.0<br>(869MHz~894MHz) | 1.8max.<br>(869MHz~894MHz) | 50ohm           | 150ohm//68nH     |
| SAFSD881MFL0T50 | 881.5                  | 3.0 max.<br>(869MHz~894MHz) | 1.4<br>(869MHz~894MHz) | 2.0max.<br>(869MHz~894MHz) | 50ohm           | 200ohm//82nH     |

# GSM850/GSM900 Dual Band

| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)         | Ripple (dB max.)       | VSWR                       | Input Impedance | Output Impedance |
|------------------------|------------------------|-----------------------------|------------------------|----------------------------|-----------------|------------------|
| SAWES881MCQ0F00(942.5) | 942.5                  | 2.9 max.<br>(925MHz~960MHz) | 1.7<br>(925MHz~960MHz) | 2.2max.<br>(925MHz~960MHz) | 50ohm           | 150ohm//56nH     |
| SAWES881MCQ0F00(881.5) | 881.5                  | 2.1 max.<br>(869MHz~894MHz) | 1.0<br>(869MHz~894MHz) | 1.9max.<br>(869MHz~894MHz) | 50ohm           | 150ohm//68nH     |

# GSM850/GSM1900 Dual Band



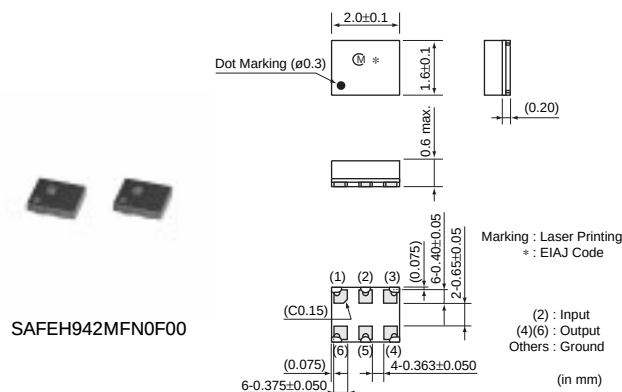
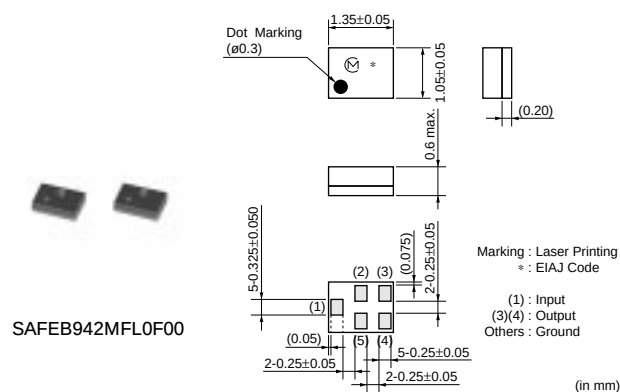
| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| SAWES881MCU2F00(881.5) | 881.5                  | 2.1 max.<br>(869MHz~894MHz)   | 1.0<br>(869MHz~894MHz)   | 1.9max.<br>(869MHz~894MHz)   | 50ohm           | 150ohm//68nH     |
| SAWES881MCU2F00(1960)  | 1960                   | 3.0 max.<br>(1930MHz~1990MHz) | 1.9<br>(1930MHz~1990MHz) | 2.4max.<br>(1930MHz~1990MHz) | 50ohm           | 150ohm//22nH     |

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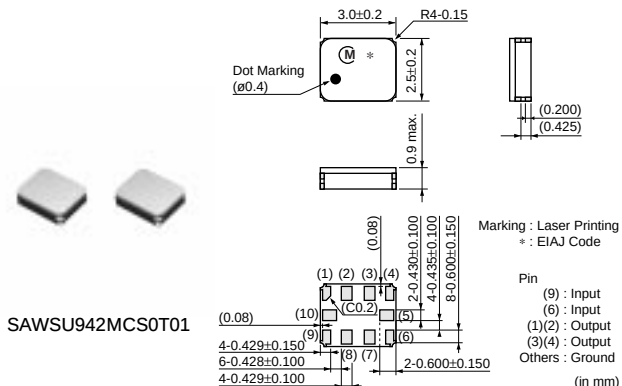
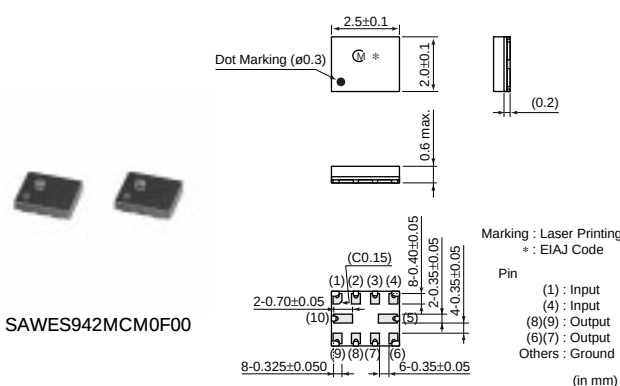
| Part Number                   | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|-------------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAWSP881MGA0T00(881.5)</b> | 881.5                  | 2.9 max.<br>(869MHz~894MHz)   | 1.5<br>(869MHz~894MHz)   | 2.0max.<br>(869MHz~894MHz)   | 50ohm           | 50ohm            |
| <b>SAWSP881MGA0T00(1960)</b>  | 1960                   | 3.2 max.<br>(1930MHz~1990MHz) | 2.0<br>(1930MHz~1990MHz) | 2.4max.<br>(1930MHz~1990MHz) | 50ohm           | 50ohm            |
| <b>SAWSU881MCQ0T01(881.5)</b> | 881.5                  | 3.0 max.<br>(869MHz~894MHz)   | 1.8<br>(869MHz~894MHz)   | 2.0max.<br>(869MHz~894MHz)   | 50ohm           | 200ohm//56nH     |
| <b>SAWSU881MCQ0T01(1960)</b>  | 1960                   | 3.0 max.<br>(1930MHz~1990MHz) | 2.4<br>(1930MHz~1990MHz) | 2.2max.<br>(1930MHz~1990MHz) | 50ohm           | 200ohm//15nH     |

● GSM900



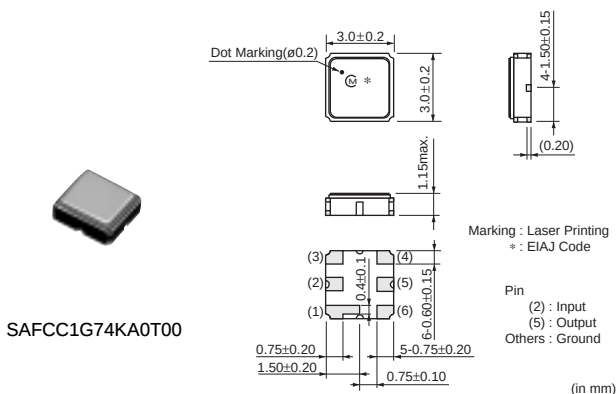
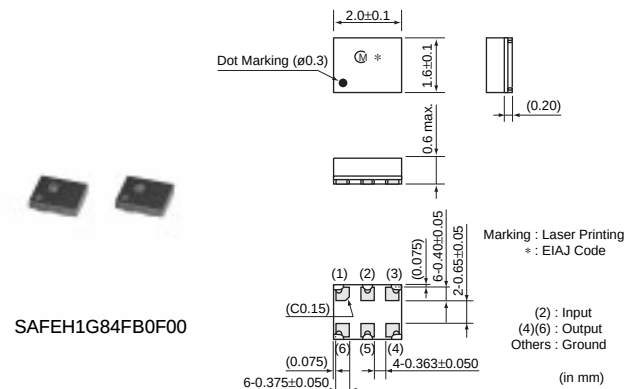
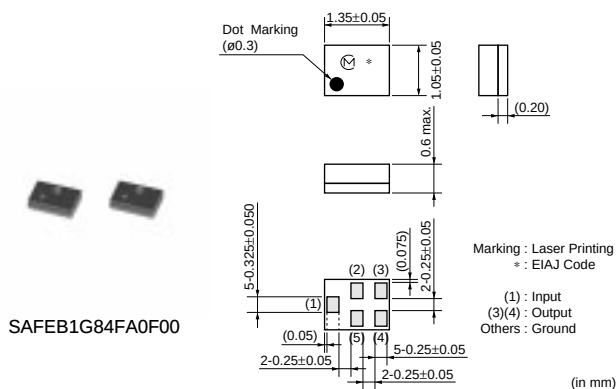
| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)         | Ripple (dB max.)       | VSWR                       | Input Impedance | Output Impedance |
|------------------------|------------------------|-----------------------------|------------------------|----------------------------|-----------------|------------------|
| <b>SAFEB942MFL0F00</b> | 942.5                  | 2.7 max.<br>(925MHz~960MHz) | 1.7<br>(925MHz~960MHz) | 2.0max.<br>(925MHz~960MHz) | 50ohm           | 150ohm//82nH     |
| <b>SAFED942MFM0F00</b> | 942.5                  | 2.2 max.<br>(925MHz~960MHz) | 1.3<br>(925MHz~960MHz) | 2.1max.<br>(925MHz~960MHz) | 50ohm           | 150ohm//82nH     |
| <b>SAFEH942MFN0F00</b> | 942.5                  | 2.7 max.<br>(925MHz~960MHz) | 1.8<br>(925MHz~960MHz) | 2.0max.<br>(925MHz~960MHz) | 50ohm           | 150ohm//82nH     |
| <b>SAFEF942MAL0F00</b> | 942.5                  | 3.0 max.<br>(925MHz~960MHz) | 1.7<br>(925MHz~960MHz) | 2.1max.<br>(925MHz~960MHz) | 50ohm           | 50ohm            |
| <b>SAFSD942MFM0T00</b> | 942.5                  | 3.2 max.<br>(925MHz~960MHz) | 2.2<br>(925MHz~960MHz) | 2.3max.<br>(925MHz~960MHz) | 50ohm           | 200ohm//82nH     |
| <b>SAFSD942MCL0T00</b> | 942.5                  | 3.3 max.<br>(925MHz~960MHz) | 1.8<br>(925MHz~960MHz) | 2.0max.<br>(925MHz~960MHz) | 50ohm           | 50ohm            |
| <b>SAFSE942MAL0T05</b> | 942.5                  | 3.2 max.<br>(925MHz~960MHz) | 2.0<br>(925MHz~960MHz) | 2.2max.<br>(925MHz~960MHz) | 50ohm           | 50ohm            |

● GSM900/GSM1800 Dual Band J-CDMA



| Part Number                    | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|--------------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAWES942MCQ0F00(942.5)</b>  | 942.5                  | 2.9 max.<br>(925MHz~960MHz)   | 1.7<br>(925MHz~960MHz)   | 2.2max.<br>(925MHz~960MHz)   | 50ohm           | 150ohm//56nH     |
| <b>SAWES942MCQ0F00(1842.5)</b> | 1842.5                 | 2.6 max.<br>(1805MHz~1880MHz) | 1.7<br>(1805MHz~1880MHz) | 2.4max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//15nH     |
| <b>SAWES942MCM0F00(942.5)</b>  | 942.5                  | 2.8 max.<br>(925MHz~960MHz)   | 1.5<br>(925MHz~960MHz)   | 2.0max.<br>(925MHz~960MHz)   | 50ohm           | 150ohm//56nH     |
| <b>SAWES942MCM0F00(1842.5)</b> | 1842.5                 | 3.0 max.<br>(1805MHz~1880MHz) | 1.8<br>(1805MHz~1880MHz) | 2.2max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//18nH     |
| <b>SAWES942MCQ0F05(942.5)</b>  | 942.5                  | 2.9 max.<br>(925MHz~960MHz)   | 1.7<br>(925MHz~960MHz)   | 2.2max.<br>(925MHz~960MHz)   | 50ohm           | 150ohm//56nH     |
| <b>SAWES942MCQ0F05(1842.5)</b> | 1842.5                 | 2.6 max.<br>(1805MHz~1880MHz) | 1.7<br>(1805MHz~1880MHz) | 2.4max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//15nH     |
| <b>SAWSP942MLD0T00(942.5)</b>  | 942.5                  | 3.0 max.<br>(925MHz~960MHz)   | 2.0<br>(925MHz~960MHz)   | 2.5max.<br>(925MHz~960MHz)   | 50ohm           | 50ohm            |
| <b>SAWSP942MLD0T00(1842.5)</b> | 1842.5                 | 3.2 max.<br>(1805MHz~1880MHz) | 2.0<br>(1805MHz~1880MHz) | 2.5max.<br>(1805MHz~1880MHz) | 50ohm           | 50ohm            |
| <b>SAWSU942MCS0T01(942.5)</b>  | 942.5                  | 3.2 max.<br>(925MHz~960MHz)   | 2.2<br>(925MHz~960MHz)   | 2.4max.<br>(925MHz~960MHz)   | 50ohm           | 200ohm//47nH     |
| <b>SAWSU942MCS0T01(1842.5)</b> | 1842.5                 | 3.2 max.<br>(1805MHz~1880MHz) | 2.2<br>(1805MHz~1880MHz) | 2.5max.<br>(1805MHz~1880MHz) | 50ohm           | 200ohm//16nH     |

● GSM1800



| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)        | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|------------------------|------------------------|----------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAWEB1G84FA0F00</b> | 1842.5                 | 2.5 max.<br>(1805~1880MHz) | 1.5<br>(1805MHz~1880MHz) | 2.2max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//18nH     |
| <b>SAFED1G84FB0F00</b> | 1842.5                 | 2.0 max.<br>(1805~1880MHz) | 1.3<br>(1805MHz~1880MHz) | 2.5max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//18nH     |

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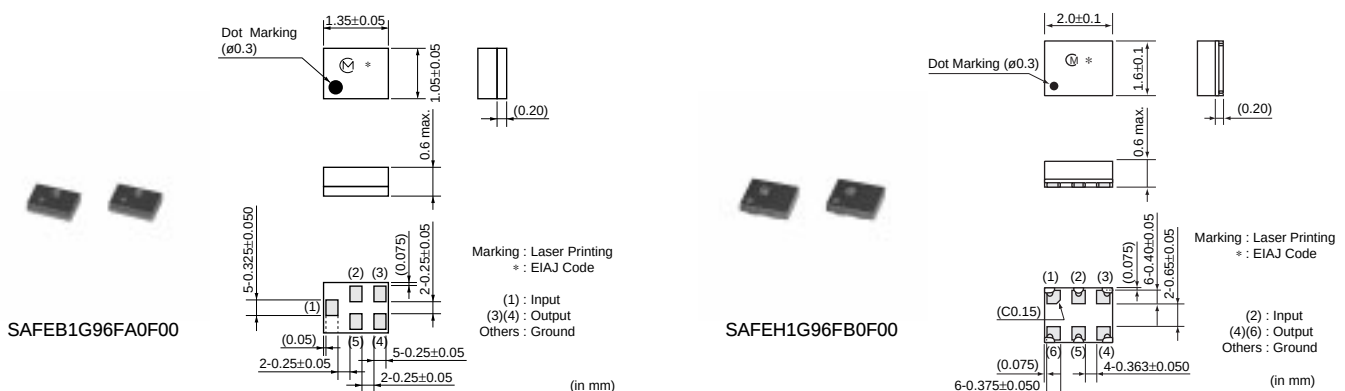
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| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAFEH1G84FB0F00</b> | 1842.5                 | 2.5 max.<br>(1805~1880MHz)    | 1.5<br>(1805MHz~1880MHz) | 2.2max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//18nH     |
| <b>SAFEF1G84AA0F00</b> | 1842.5                 | 2.8 max.<br>(1805~1880MHz)    | 1.7<br>(1805MHz~1880MHz) | 2.2max.<br>(1805MHz~1880MHz) | 50ohm           | 50ohm            |
| <b>SAFSE1G84KA0T00</b> | 1842.5                 | 3.2 max.<br>(1805~1880MHz)    | 2.2<br>(1805MHz~1880MHz) | 2.8max.<br>(1805MHz~1880MHz) | 50ohm           | 50ohm            |
| <b>SAFSD1G84FA0T00</b> | 1842.5                 | 3.0 max.<br>(1805~1880MHz)    | 2.0<br>(1805MHz~1880MHz) | 2.7max.<br>(1805MHz~1880MHz) | 50ohm           | 200ohm//27nH     |
| <b>SAFSD1G84CB0T00</b> | 1842.5                 | 3.8 max.<br>(1805~1880MHz)    | 2.0<br>(1805MHz~1880MHz) | 2.7max.<br>(1805MHz~1880MHz) | 50ohm           | 50ohm            |
| <b>SAFCC1G74KA0T00</b> | 1747.5                 | 4.2 max.<br>(1710MHz~1785MHz) | 2.6<br>(1710MHz~1785MHz) | 2.5max.<br>(1710MHz~1785MHz) | 50ohm           | 50ohm            |

### ● GSM1800/GSM1900 Dual Band

| Part Number                    | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|--------------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAWES1G84CQ0F00(1960)</b>   | 1960                   | 3.0 max.<br>(1930MHz~1990MHz) | 1.9<br>(1930MHz~1990MHz) | 2.4max.<br>(1930MHz~1990MHz) | 50ohm           | 150ohm//22nH     |
| <b>SAWES1G84CQ0F00(1842.5)</b> | 1842.5                 | 2.6 max.<br>(1805MHz~1880MHz) | 1.7<br>(1805MHz~1880MHz) | 2.4max.<br>(1805MHz~1880MHz) | 50ohm           | 150ohm//15nH     |

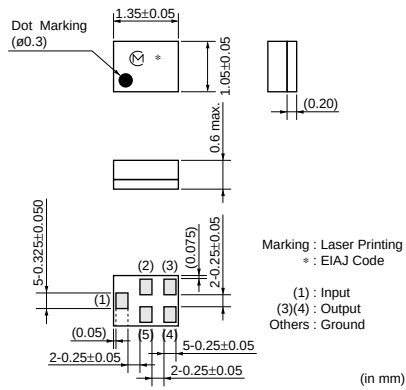
### ● GSM1900



| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)        | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|------------------------|------------------------|----------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAFEH1G96FA0F00</b> | 1960                   | 2.6 max.<br>(1930~1990MHz) | 1.8<br>(1930MHz~1990MHz) | 2.2max.<br>(1930MHz~1990MHz) | 50ohm           | 150ohm//27nH     |
| <b>SAFED1G96FA0F00</b> | 1960                   | 2.6 max.<br>(1930~1990MHz) | 1.4<br>(1930MHz~1990MHz) | 2.2max.<br>(1930MHz~1990MHz) | 50ohm           | 150ohm//18nH     |
| <b>SAFEH1G96FB0F00</b> | 1960                   | 2.6 max.<br>(1930~1990MHz) | 1.8<br>(1930MHz~1990MHz) | 2.2max.<br>(1930MHz~1990MHz) | 50ohm           | 150ohm//22nH     |
| <b>SAFEF1G96AA0F00</b> | 1960                   | 2.8 max.<br>(1930~1990MHz) | 1.7<br>(1930MHz~1990MHz) | 2.4max.<br>(1930MHz~1990MHz) | 50ohm           | 50ohm            |
| <b>SAFSE1G96KD0T00</b> | 1960                   | 3.0 max.<br>(1930~1990MHz) | 2.0<br>(1930MHz~1990MHz) | 2.5max.<br>(1930MHz~1990MHz) | 50ohm           | 50ohm            |
| <b>SAFSD1G96FB0T00</b> | 1960                   | 3.0 max.<br>(1930~1990MHz) | 2.4<br>(1930MHz~1990MHz) | 2.4max.<br>(1930MHz~1990MHz) | 50ohm           | 200ohm//22nH     |

## ● J-CDMA

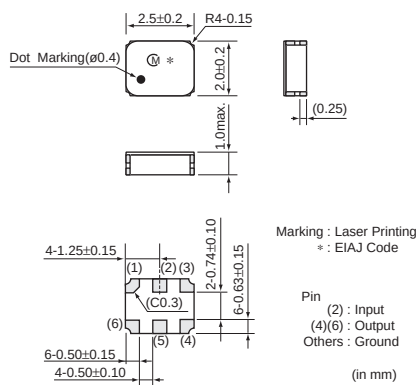
SAFEC851MCL0F00



| Part Number     | Center Frequency (MHz) | Insertion Loss (dB)         | Ripple (dB max.)       | VSWR                       | Input Impedance | Output Impedance |
|-----------------|------------------------|-----------------------------|------------------------|----------------------------|-----------------|------------------|
| SAFEC851MCL0F00 | 851                    | 2.8 max.<br>(832MHz~870MHz) | 1.7<br>(832MHz~870MHz) | 2.5max.<br>(832MHz~870MHz) | 50ohm           | 100ohm//56nH     |
| SAFEF906MAM0F00 | 906                    | 3.2 max.<br>(887MHz~925MHz) | 1.5<br>(887MHz~925MHz) | 2.4max.<br>(887MHz~925MHz) | 50ohm           | 50ohm            |
| SAFSE906MAM0T00 | 906                    | 4.0 max.<br>(887MHz~925MHz) | 2.5<br>(887MHz~925MHz) | 2.4max.<br>(887MHz~925MHz) | 50ohm           | 50ohm            |
| SAFSE851MKB0T00 | 851                    | 3.4 max.<br>(832MHz~870MHz) | 2.5<br>(832MHz~870MHz) | 2.2max.<br>(832MHz~870MHz) | 50ohm           | 50ohm            |
| SAFSD906MCL0T00 | 906                    | 4.2 max.<br>(887MHz~925MHz) | 2.5<br>(887MHz~925MHz) | 2.8max.<br>(887MHz~925MHz) | 50ohm           | 50ohm            |
| SAFSD851MXA0T00 | 851                    | 2.6 max.<br>(832MHz~870MHz) | 1.9<br>(832MHz~870MHz) | 2.7max.<br>(832MHz~870MHz) | 50ohm           | 100ohm//56nH     |

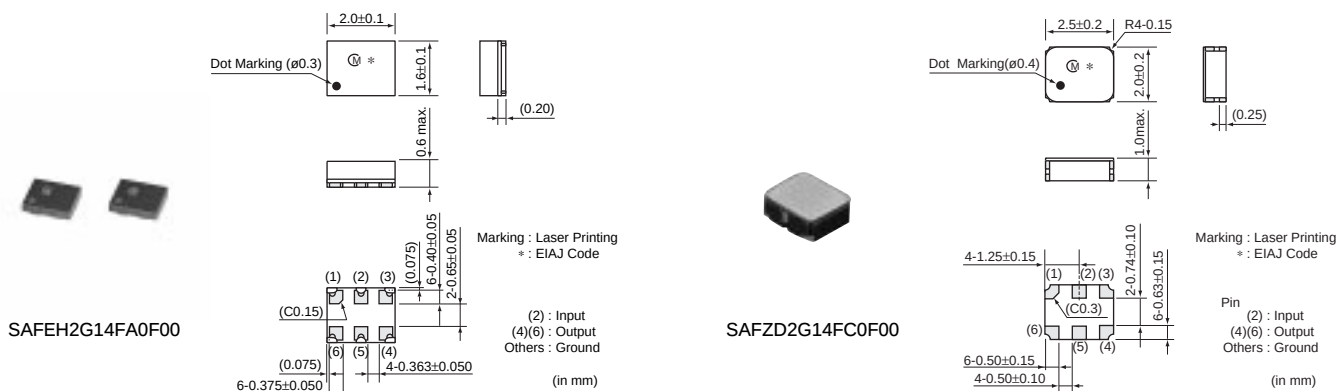
## ● PCS(CDMA)

SAFSD1G96FL0T00



| Part Number     | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|-----------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| SAFSE1G88KC0T00 | 1880                   | 5.0 max.<br>(1850MHz~1910MHz) | 3.5<br>(1850MHz~1910MHz) | 2.2max.<br>(1850MHz~1910MHz) | 50ohm           | 50ohm            |
| SAFSD1G96FL0T00 | 1960                   | 4.0 max.<br>(1930MHz~1990MHz) | 2.0<br>(1930MHz~1990MHz) | 2.1max.<br>(1930MHz~1990MHz) | 50ohm           | 100ohm           |

● W-CDMA



| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)           | Ripple (dB max.)         | VSWR                         | Input Impedance | Output Impedance |
|------------------------|------------------------|-------------------------------|--------------------------|------------------------------|-----------------|------------------|
| <b>SAFEH2G14FA0F00</b> | 2140                   | 2.3 max.<br>(2110~2170MHz)    | 1.2<br>(2110MHz~2170MHz) | 1.8max.<br>(2110MHz~2170MHz) | 50ohm           | 200ohm//27nH     |
| <b>SAFEH1G95FL0F00</b> | 1950                   | 2.8 max.<br>(1920~1980MHz)    | 1.5<br>(1920MHz~1980MHz) | 2.0max.<br>(1920MHz~1980MHz) | 200ohm//33nH    | 50ohm            |
| <b>SAFEF1G95KA0F00</b> | 1950                   | 3.0 max.<br>(1920~1980MHz)    | 1.7<br>(1920MHz~1980MHz) | 2.0max.<br>(1920MHz~1980MHz) | 50ohm           | 50ohm            |
| <b>SAFZE1G95KD0F00</b> | 1950                   | 3.2 max.<br>(1920~1980MHz)    | 1.5<br>(1920MHz~1980MHz) | 2.6max.<br>(1920MHz~1980MHz) | 50ohm           | 50ohm            |
| <b>SAFZD2G14FC0F00</b> | 2140                   | 2.7 max.<br>(2110~2170MHz)    | 1.3<br>(2110MHz~2170MHz) | 2.3max.<br>(2110MHz~2170MHz) | 50ohm           | 100ohm           |
| <b>SAFSE1G95KD0F00</b> | 1950                   | 3.2 max.<br>(1920~1980MHz)    | 1.5<br>(1920MHz~1980MHz) | 2.6max.<br>(1920MHz~1980MHz) | 50ohm           | 50ohm            |
| <b>SAFSE2G14KB0T00</b> | 2140                   | 2.7 max.<br>(2110~2170MHz)    | 1.3<br>(2110MHz~2170MHz) | 2.0max.<br>(2110MHz~2170MHz) | 50ohm           | 50ohm            |
| <b>SAFSE1G95KC0T00</b> | 1950                   | 3.0 max.<br>(1920~1980MHz)    | 1.5<br>(1920MHz~1980MHz) | 2.0max.<br>(1920MHz~1980MHz) | 50ohm           | 50ohm            |
| <b>SAFSD2G14FA0T00</b> | 2140                   | 2.7 max.<br>(2110MHz~2170MHz) | 1.5<br>(2110MHz~2170MHz) | 2.2max<br>(2110MHz~2170MHz)  | 50ohm           | 200ohm//22nH     |
| <b>SAFSD1G95FA0T00</b> | 1950                   | 3.2 max.<br>(1920~1980MHz)    | 1.6<br>(1920MHz~1980MHz) | 2.1max.<br>(1920MHz~1980MHz) | 200ohm//22nH    | 50ohm            |

● CDMA800/TDMA800/E-AMPS/GSM850

| Part Number            | Center Frequency (MHz) | Insertion Loss (dB)         | Ripple (dB max.)       | VSWR                       | Input Impedance | Output Impedance |
|------------------------|------------------------|-----------------------------|------------------------|----------------------------|-----------------|------------------|
| <b>SAFEF836MAL0F00</b> | 836.5                  | 2.8 max.<br>(824MHz~849MHz) | 1.4<br>(824MHz~849MHz) | 1.9max.<br>(824MHz~849MHz) | 50ohm           | 50ohm            |