

# **Datasheet of SAW Device**

# SAW Dual Filter for Band1\_Band25 / 1in2out Unbalanced / LH /1511

# Murata PN: SAWFD1G96AM1F0A

Feature
For Diversity Rx



Note : This Murata SAW Component is Consumer grade product and applicable for Cellular phone or similar end devices. Please also read Important Notice at the end of this document.

| Revision |
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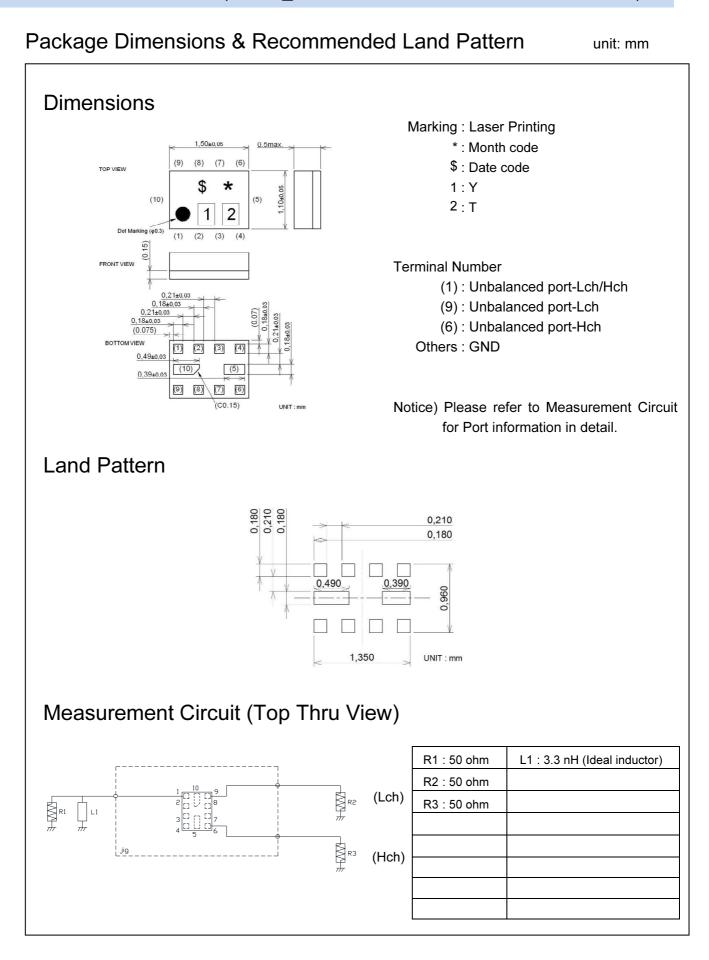


- Operating temperature : -20 to +85 deg.C
- Storage temperature : -40 to +85 deg.C
- Input Power : +13 dBm 2000 h
- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)

: Yes

- Minimum Resistance between the terminals : 10M ohm
- RoHS compliance
- ESD (ElectroStatic Discharge) sensitive device







# Electrical Characteristic < Low Freq. Filter >

| Low Freq. Filter     |                      |             |            | Characteristics<br>(-20 to +85 deg.C) |          | Unit | Note              |                              |
|----------------------|----------------------|-------------|------------|---------------------------------------|----------|------|-------------------|------------------------------|
|                      |                      |             |            | min.                                  | typ.*    | max. | Onit              | Note                         |
| Center Frequency     |                      |             |            |                                       | 1960     | max. | MHz               |                              |
| Insertion Loss       | 1930.48 to           | 1989.52     | MHz        |                                       | 3.0      | 4.1  | dB                |                              |
|                      | 1930.48 to           | 1989.52     |            |                                       | 3.0      | 3.5  | dB                | +23 to +27deg.C              |
|                      | 1930. to             | 1995.       | MHz        |                                       | 3.1      | 4.3  | dB                |                              |
|                      | 1932.5 to            | 1992.5      | MHz        |                                       | 2.8      | 3.5  | dB <sub>INT</sub> | Any 4.5MHz                   |
| Ripple Deviation     | 1930. to             |             | MHz        |                                       | 1.8      | 3.1  | dB                |                              |
| VSWR                 | 1930. to             |             | MHz        |                                       | 2.1      | 2.6  |                   |                              |
| Absolute Attenuation | <u>1. to</u>         |             | MHz        | 20                                    | 29       |      | dB                |                              |
|                      | 699. to              | 80.<br>716. | MHz        | 50<br>40                              | 84<br>45 |      | dB<br>dB          | RX - TX                      |
|                      |                      |             | MHz<br>MHz | 38                                    | 45       |      | dB                | B12 TX<br>B26 TX             |
|                      | 814. to<br>1710. to  |             | MHz        | 26                                    | 30       |      | dB                | TX (B4)                      |
|                      | 1710.48 to           | 1754.52     |            | 26                                    | 30       |      | dB                | TX (B4)                      |
|                      | 1770. to             |             | MHz        | 30                                    | 35       |      | dB                | 2TX - RX                     |
|                      | 1850. to             |             | MHz        | 40                                    | 43       |      | dB                | TX (B2)                      |
|                      | 1850.48 to           | 1909.52     | MHz        | 40                                    | 43       |      | dB                | TX (B2)                      |
|                      | 1850.48 to           | 1909.52     | MHz        | 40                                    | 43       |      | dB                | +23 to +27deg.C              |
|                      | 1850. to             | 1915.       | MHz        | 30                                    | 43       |      | dB                | TX (B25)                     |
|                      | 1852.5 to            | 1912.5      | MHz        | 40                                    | 44       |      | dB <sub>INT</sub> | Any 4.5MHz                   |
|                      | 2055. to             |             | MHz        | 25                                    | 32       |      | dB                |                              |
|                      | 2080. to             |             | MHz        | 27                                    | 31       |      | dB                |                              |
|                      | 2400. to             |             | MHz        | 27                                    | 35       |      | dB                | ISM2.4                       |
|                      | 4900. to             |             | MHz        | 30                                    | 34       |      | dB                | ISM 5G                       |
|                      | 5790. to             |             | MHz        | 30                                    | 34       |      | dB                | 3f                           |
|                      | 7720. to<br>9650. to |             | MHz<br>MHz | 27<br>20                              | 31<br>30 |      | dB<br>dB          | 4f<br>5f                     |
|                      |                      | 11970.      | MHz        | 15                                    | 29       |      | dB                | 6f                           |
|                      |                      | 12750.      | MHz        | 15                                    | 29       |      | dB                | 0                            |
|                      | 0000. [[]            | 12750.      |            | 13                                    | 23       |      | чь                |                              |
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| L                    | 1                    |             |            | 1                                     | 1        | 1    | 1                 | * Typical value at 25±2deg.C |

\* Typical value at 25±2deg.C



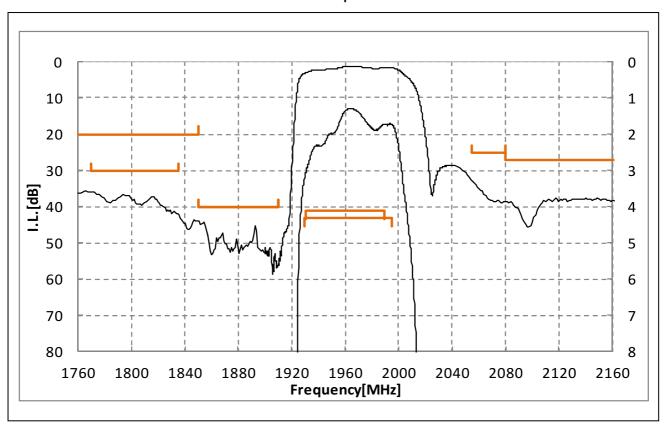
### Electrical Characteristic < High Freq. Filter >

| Characteristics     Unit     Note       Center Frequency     Imit: 19 Pr.*     max.       Center Frequency     Preprint Previous Colspan="2">Note       Center Frequency       2110 48 10 2170 MHz     Center Frequency     Center Frequency       Vision MHz     Center Frequency       Vision MHz     Center Frequency       Vision MHz     Center Frequency       Vision MHz     Center Frequency   | Electrical Cha       | ractensi   | <u>10 ~ r</u> | пдп |                 | <u>q. ⊢ı</u>       |      | /   |                   |
|--|----------------------|------------|---------------|-----|-----------------|--------------------|------|-----|-------------------|
| High Freq. Filter     (-20 to +55 ceg.C.)     Unit     Note       Center Frequency     2110     0     2170     MHz     255     3.1     dB       2110     0     2170     MHz     2.5     3.1     dB   |                      |            |               |     | Characteristics |                    |      |     |                   |
| min.     type.*     max.       insertion Loss     2110     10     2710     MHz     2.5     2.8     d8     H2310 + 27deg.C       2110 48     10     2710     MHz     2.5     2.8     d8     H2310 + 27deg.C       2110 48     10     2159 28     Hz     2.5     2.8     d8     H2310 + 27deg.C       Ripple Deviation     2110     10     2170     MHz     2.8     1.5     d8     H2     H2     1.5     d8     H2   | Hiah Frea. Filter    |            |               |     |                 | (-20 to +85 deg.C) |      |     | Note              |
| Center Frequency     1     2110     10     2170     MHz     2.5     3.1     dB       2110     10     2170     MHz     2.5     2.8     dB     +2310 +27deg.C       2110     10     2170.270 MHz     2.5     3.1     dB     +2310 +27deg.C       2110     10     2170.0     MHz     2.5     3.4     dB     +2310 +27deg.C       Ripple Deviation     2110     10     2170.0     MHz     2.0     2.5     3.4     dB     +2310 +27deg.C       XSWR     2110       |                      |            |               |     | min             | typ.*              | max  |     |                   |
| Insertion Loss     2110.     0.     2170.     MHz     2.5     2.8     dB     dB     description       2110 48     0.     216952     MHz     2.5     2.8     dB     dB  | Contor Fraguanay     |            |               |     |                 |                    | παλ. | MHz |                   |
| 2110     to     2170     MHz     2.5     2.8     4B     +23 to +27deg.C       2110.46     to     2165 52     MHz     2.5     2.8     4B     +23 to +27deg.C       Ripple Deviation     2110     to     2170     MHz     2.0     2.5     2.8     4B     +23 to +27deg.C       VSWR     2110     to     2170     MHz     2.0     2.5     44     4B     - <t< td=""><td></td><td>2110 +-</td><td>2170</td><td></td><td></td><td></td><td>2.1</td><td></td><td></td></t<>  |                      | 2110 +-    | 2170          |     |                 |                    | 2.1  |     |                   |
| 2110.48     0     215     3.1     4B     2       Ripple Deviation     2110     to     2170     MHz     2.5     2.8     4B     +23 to +27.0eg C       WWR     2110     to     2170     MHz     2.0     4B     +23 to +27.0eg C       Absolute Attenuation     10     to     1920     MHz     2.0     2.5     -       Absolute Attenuation     10     to     1920     MHz     2.0     2.5     -       400     MHz     10     1920     MHz     2.0     2.5     -     HB       699     to     716     MHz     40     53     -     HB     B12 TX       777     to     787     MHz     40     52     -     HB     B2     TX     B2     B2     TX     B2     STX     B2   | Insention Loss       |            |               |     |                 |                    |      |     | 1.22 to 1.27dog C |
| Ripple Deviation     2110 45     210 70     MHz     25     2.8     4B     +23 to +27deg.C       VSWR     2110     to     2170     MHz     2.0     2.5     .4       Absolute Attenuation     10     10     1920     MHz     20     2.5     .4       Absolute Attenuation     10     10     1920     MHz     50     79     .4     B     RX-TX (B1)       400     MHz     10     66     48     RX-TX (B4)     .5     .4     B     121X  |                      |            |               |     |                 |                    |      |     | +23 t0 +27deg.C   |
| Ripple Deviation     2110     to     2170     MHz     20     25       Absolute Attenuation     10     10     1920     MHz     20     25       Absolute Attenuation     10     1920     MHz     20     25     HE       Absolute Attenuation     10     1920     MHz     260     79     HB     RX-TX (B1)       400     MHz     40     55     HB     B12 TX     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     11     10     11     10     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     10     11     11     11  |                      | 2110.40 [0 | 2109.52       |     |                 |                    |      |     | 1.22 to 1.27dog C |
| VŠWR     2110     to     2120     MHz     50     79     4B       Absolute Attenuation     100     1920     MHz     50     79     4B     RX-TX (B1)       400     MHz     50     66     4B     RX-TX (B4)       699     to     716     MHz     40     55     4B     B13 TX       810     to     830     MHz     46     52     4B     B28 TX       810     to     830     MHz     46     52     4B     B28 TX       824     to     849     MHz     46     52     4B     B8 TX       880     to     925     MHz     40     43     4B     TX (B4)       1710 48     to     1754 52     MHz     40     43     4B     TX (B2)       1730 to     1920 to     1960     MHz     37     41     4B     TX (B2)       1850 to     1920 to     1960 to     MHz     40     43     4B     T   | Dinale Deviation     |            |               |     |                 |                    |      |     | +23 to +27deg.C   |
| Absolute Attenuation     10.     10     1920.     MHz     250     34     dB       400.     MHz     50     66     dB     RX-TX(B1)       699.     10.     716.     MHz     400     553     dB     B13 TX       899.     10.     716.     MHz     400     553     dB     B13 TX       814.     10.     840.     MHz     46     52     dB     B26 TX       820.     10.     915.     MHz     40     51     dB     B3 TX       880.     10.     915.     MHz     40     43     dB     TX(B4)       1710.     10.     775.52.     MHz     40     43     dB     TX(B2)       1710.48     10.     754.52.     MHz     40     48     dB     TX(B2)       1820.48     10.     90.52.     MHz     40     43     dB     TX(B2)       1820.48     0.     10.590.     MHz     20     37     41  |                      |            |               |     |                 |                    |      | uБ  |                   |
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| 400.     MHZ     50     66     dB     RX-TX (B4)       777.     to     787.     MHZ     40     53     dB     B13 TX       810.     0830.     MHZ     40     52     dB     B28 TX       814.     to     849.     MHZ     40     52     dB     B28 TX       824.     to     849.     MHZ     40     51     dB     B8 TX       898.     to     925.     MHZ     40     43     dB     TX (B4)       1710.48     to     755.     MHZ     40     43     dB     TX (B4)       1730.     to     1920.     MHZ     40     43     dB     TX (B4)       1730.     to     1920.     MHZ     40     48     dB     TX (B4)       1730.     to     1920.     MHZ     40     48     dB     TX (B1)       1850.48     to     1980.     MHZ     37     41     dB     TX (B1)   | Absolute Attenuation | 10. to     |               |     |                 |                    |      | -   |                   |
| 699.     to     716.     MHz     40     55.     dB     B13 TX       810.     to     830.     MHz     46     52.     dB       814.     to     849.     MHz     46     52.     dB       824.     to     849.     MHz     40     52.     dB       880.     to     915.     MHz     40     51.     dB     B3TX       898.     to     915.     MHz     40     43.     dB     TX     MHZ       1710.     to     1755.     MHz     40     43.     dB     TX (B4)       1710.     to     1755.     MHz     40     48     dB     TX (B2)       1850.10     1910.     MHz     40     48     dB     TX (B2)       1920.10     1980.     MHz     37     41     dB     TX (B1)       2015.     to     2075.     MHz     10     31.     dB       2480.     to     980. <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>   |                      |            |               |     |                 |                    |      |     |                   |
| 777.   10   <  |                      | 000 1      |               |     |                 |                    |      |     |                   |
| 810   b0   830   MHz   46   52   dB   B26 TX     824   to   849   MHz   46   52   dB   B8   TX     880   to   915   MHz   46   50   dB   TX     888   to   925   MHz   46   50   dB   TX(B4)     1710   to   1754.52   MHz   40   43   dB   TX(B4)     1730   to   1920   MHz   37   42   dB   27(R2)     1850 to   1910   MHz   37   41   dB   TX(B2)     1850 to   1979.52   MHz   37   41   dB   TX(B1)     1920 to   1980   MHz   37   41   dB   TX(B1)     2015   to   2195   MHz   37   41   dB   BXR2     2185 to   f130   MHz   20   3.0   dB   RX+TX     4200   to   2030   MHZ   40   43   dB   SK8     5950 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>   |                      |            |               |     |                 |                    |      |     |                   |
| 814   to   849.   MH2   46   52   dB     824   to   849.   MH2   46   50   dB   B     880   to   925.   MH2   40   51   dB   B   TX     898.   to   925.   MH2   40   43   dB   TX (B4)     1710.   to   1755.   MH2   40   43   dB   TX (B4)     170.0   to   1752.   MH2   40   43   dB   TX (B4)     170.1   to   1920.   MH2   37   42   dB   TX (B2)     1850.   to   1910.   MH2   40   48   dB   TX (B2)     1850.40   to   199.52   MH2   37   41   dB   TX (B1)     2015   to   2105.   MH2   10   23   dB   TX (B1)     2155   to   430.   MH2   40   40   40   B   24     2400.   to   2500.   MH2   37   41  |                      |            |               |     |                 |                    |      |     | BISIX             |
| 824.   to   849.   MH2   46   52   dB   B     886   to   925.   MH2   46   50   dB   TX(B4)     1710.   to   1755.   MH2   40   43   dB   TX(B4)     1710.4b   to   1754.52   MH2   40   43   dB   TX(B4)     1730.   to   1920.50   MH2   40   48   dB   TX(B2)     1850.4b   1910.   MH2   37   41   dB   TX(B2)     1920.4b   1979.52   MH2   10   23   dB   TX(B1)     2020.4b   1979.52   MH2   10   23   dB   TX(B1)     2015.1b   0.275.   MH2   10   23   dB   TX(B1)     2016.1b   1979.52   MH2   40   43   dB   TX(B2)     2185.1b   6.130.0   MH2   40   43   dB   K2   44     43.40   10   13025.1   MH2   37   41   dB   BK   56 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>  |                      |            |               |     |                 |                    |      |     |                   |
| 880.     10     912.     MHz     40     51     dB     TX       998.     to     925.     MHz     40     43     dB     TX(B4)       1710.     to     1755.     MHz     40     43     dB     TX(B4)       1710.     to     1755.     MHz     40     43     dB     TX(B4)       1730.     to     1920.     MHz     37     42     dB     ZTX-RX       1850.     to     1990.52     MHz     37     41     dB     TX(B2)       1920.     to     1990.52     MHz     37     41     dB     TX(B1)       2016.     to     2075.     MHz     10     23     dB     TX(B1)       2016.     to     2500.     MHz     40     43     dB     TX(B1)       2016.     to     2500.     MHz     40     50     dB     RX+TX       4340.     to     650.     MHz     37     41     dB  |                      |            |               |     |                 |                    |      |     | B26 IX            |
| 898.   to   925.   MHz   40   43   dB   TX(B4)     1710.48   to   1754.52   MHz   40   43   dB   TX(B4)     1730.   to   1920.   MHz   40   48   dB   TX(R2)     1850.48   to   1905.52   MHz   40   48   dB   TX(R2)     1850.48   to   1990.52   MHz   37   41   dB   TX(R2)     1920.48   to   1979.52   MHz   37   41   dB   TX(R2)     2185.   to   1979.52   MHz   37   41   dB   TX(R2)     2185.   to   6130.   MHz   20   30.   dB   TX(R2)     2400.   to   2500.   MHz   40   43   dB   152.4     4300.   to   5950.   MHz   37   41   dB   155     4300.   to   5950.   MHz   37   41   dB   15     6950.   MHz   37   41   dB <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></t<>   |                      |            |               |     |                 |                    |      | -   |                   |
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| 1710.48   to   1920   MHz   37   42   dB   TX(B4)     1850.   to   1910.   MHz   40   48   dB   TX(B2)     1850.48   to   1910.   MHz   40   48   dB   TX(B2)     1920.   to   1980.   MHz   37   41   dB   TX(B1)     1920.48   to   1979.52   MHz   37   41   dB   TX(B1)     2015.   to   2075.   MHz   37   41   dB   TX(B1)     2185.   to   6130.   MHz   20   23   dB   (RX + TX/2)     2185.   to   6130.   MHz   40   43   dB   ISM2.4     4030.   to   4150.   MHz   40   49   dB   2f     4340.   to   5950.   MHz   37   41   dB   ISM 5G     5950.   to   6310.   MHz   20   37   dB   3f     10550.   to   10320.   MHz   21 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>  |                      |            |               |     |                 |                    |      |     |                   |
| 1730   0   1920.   MHz   37   42   dB   2TX-RX     1850   to   1909.52   MHz   40   48   dB   TX(B2)     1880.48   to   1909.52   MHz   37   41   dB   TX(B1)     1920.48   0   1979.52   MHz   37   41   dB   TX(B1)     2015   to   01975.52   MHz   10   23   dB   (RX + TX/2)     2185   to   6130.   MHz   20.   30   dB   ISM2.4     200.   to   2500.   MHz   40   43   dB   ISM2.4     4030.   to   13025.   MHz   40   49   dB   2f     4340.   to   13025.   MHz   37   41   dB   RX+2TX     6330.   to   6130.   MHz   37   41   dB   RX +2TX     6330.   to   6130.   MHz   20   37   dB   3f     10550.   to   10850.   MHz   20  |                      |            |               |     | -               |                    |      |     |                   |
| 1850   10   1410   MHz   40   48   dB   TX(B2)     1850   48   0   1909.52   MHz   37   41   dB   TX(B1)     1920. to   1980. MHz   37   41   dB   TX(B1)     1920. to   1979.52   MHz   37   41   dB   TX(B1)     2015. to   02075. MHz   10   23   dB   (RX+TX)2     2185. to   6130. MHz   2.0   3.0   dB   SM2.4     4030. to   2500. MHz   40   43   dB   ISM2.4     4030. to   4150. MHz   40   53   dB   C   34     4340. to   13025. MHz   37   41   dB   RX+TX   420     4900. to   5950. MHz   37   41   dB   RX+2TX   6330. to   6510. MHz   37   41   dB   RX+2TX     6330. to   6510. MHz   20   37   dB   5f   12660. to   13020. MHz   15   34   dB   6f     12660. to   13020. MHz   15  |                      |            |               |     |                 |                    |      |     |                   |
| 1850.48 to   1909.52 MHz   37   41   dB   TX (B1)     1920.48 to   1979.52 MHz   37   41   dB   TX (B1)     1920.48 to   1979.52 MHz   37   41   dB   TX (B1)     2015. to   2075. MHz   10   23   dB   (RX + TX/22)     2185. to   6130. MHz   40   43   dB   ISM2.4     4030. to   4150. MHz   40   43   dB   ISM2.4     4030. to   4150. MHz   40   49   dB   2f     4340. to   13025. MHz   15   33   dB      4300. to   5550. MHz   37   41   dB   RX+TX     4300. to   5550. MHz   37   41   dB   RX+2TX     6330. to   6510. MHz   35   39   dB   37     8440. to   8680. MHz   20   37   dB   6f     10550. to   10850. MHz   15   34   dB   6f     12660. to   13020. MHz   15   34   dB   6f   |                      |            |               |     |                 |                    |      |     |                   |
| 1920. to   1980. MHz   37   41   dB   TX(B1)     1920.48 to   1979.52 MHz   37   41   dB   TX(B1)     2015. to   2075. MHz   10   23   dB   RX+TX/2     2185. to   6130. MHz   20   3.0   dB   RX+TX/2     2400. to   2500. MHz   40   43   dB   RX+TX     4200. to   4300. MHz   40   49   dB   27     4300. to   13025. MHz   15   33   dB   12     4300. to   13025. MHz   37   41   dB   ISM 5G     5950. to   6130. MHz   37   41   dB   RX+2TX     6330. to   6510. MHz   20   37   dB   37     8440. to   6680. MHz   20   37   dB   47     10550. to   10850. MHz   20   37   dB   67     12660. to   10850. MHz   20   37   dB   67     12660. to   13020. MHz   15   34   dB   67     12660. to <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>  |                      |            |               |     |                 |                    |      |     |                   |
| 1920.48 to   1979.52 MHz   37   41   dB   TX(B1)     2015. to   2075. MHz   10   23   dB   (RX + TX/22)     2185. to   6130. MHz   40   43   dB   (SX + TX)     4200. to   2500. MHz   40   43   dB   (SM2.4)     4030. to   4150. MHz   40   43   dB   (SM2.4)     4200. to   2500. MHz   40   49   dB   2f     4340. to   13025. MHz   15   33   dB   (SM 5G)     5950. to   13025. MHz   37   41   dB   (SM 5G)     5950. to   6130. MHz   37   41   dB   (SM 5G)     5950. to   10850. MHz   20   37   dB   3f     8440. to   6680. MHz   20   37   dB   6f     10550. to   10850. MHz   20   37   dB   6f     12660. to   13020. MHz   15   34   dB   6f     12660. to   13020. MHz   15   16   16     12660. to  |                      |            |               |     | -               |                    |      |     |                   |
| 2015.   10   2075.   MHz   10   23   dB   (RX+TX)/2     2185.   10   6130.   MHz   20   3.0   dB     2400.   10   2500.   MHz   40   43   dB   ISM2.4     4030.   10   4150.   MHz   40   50   dB   RX+TX     4220.   to   4340.   MHz   40   49   dB   ISM2.4     4340.   to   13025.   MHz   15   33   dB   2f     4340.   to   6950.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   20   37   dB   4f     10550.   to   1080.   MHz   20   37   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   16   1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>  |                      |            |               |     |                 |                    |      |     |                   |
| 2185.   10   6130.   MHz   2.0   3.0   dB   1     2400.   10   2500.   MHz   40   43   dB   ISM2.4     4030.   10   4150.   MHz   40   50   dB   RX+TX     4220.   to   4340.   MHz   40   49   dB   2f     4340.   to   13025.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   20   37   dB   3f     8440.   to   6860.   MHz   20   37   dB   6f     10550.   to   10850.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   16   1   1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>  |                      |            |               |     |                 |                    |      |     |                   |
| 2400.   to   2500.   MHz   40   43   dB   ISM2.4     4030.   to   4150.   MHz   40   50   dB   RX+TX     4220.   to   4340.   MHz   40   49   dB   27     4340.   to   13025.   MHz   15   33   dB   28     4300.   to   13025.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   35   39   dB   3f     8440.   to   8680.   MHz   20   37   dB   4f     10550.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   40   15   40     12660.   to   13020.   MHz   15   16   16 <td></td> <td></td> <td></td> <td></td> <td>10</td> <td>23</td> <td></td> <td>dB</td> <td>(RX + TX)/2</td>   |                      |            |               |     | 10              | 23                 |      | dB  | (RX + TX)/2       |
| 4030.   to   4150.   MHz   40   50   dB   RX + TX     4220.   to   4340.   MHz   40   49   dB   2f     4340.   to   1302.5   MHz   15   33   dB   mean     4900.   to   5950.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   35   39   dB   37     6330.   to   6510.   MHz   20   37   dB   4f     10550.   to   10850.   MHz   20   37   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12600.   to   13020.   MHz   15   4   4   4     12600.   to   13020.   MHz   4   4   4   4     12600.   to   13020.   14   4   4   4   <  |                      |            |               |     |                 |                    |      | dB  |                   |
| 4220.   to   4340.   MHz   40   49   dB   2f     4340.   to   13025.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   20   37   dB   4f     10550.   to   68440.   to   8680.   MHz   20   37   dB   4f     10550.   to   1880.   MHz   20   37   dB   5f     12660.   to   18020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   4   4   4     12660.   to   13020.   MHz   16   1   1     12660.   to   13020.   MHz   16   1   1     12660.   to   1   1   1   1   1   1<  |                      | 2400. to   |               | MHz | 40              | 43                 |      | dB  |                   |
| 4340.   to   13025.   MHz   15   33   dB     4900.   to   5950.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   35   39   dB   3f     8440.   to   8680.   MHz   20   37   dB   4f     10550.   to   1080.   MHz   20   37   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     12660.   to   13020.   MHz   15   14   15   14   15     12660.   to   13020.   MHz   15   14   16   16     12660.   to   14   15   14   16   16  |                      |            |               |     | 40              |                    |      | dB  | RX + TX           |
| 4900.   10   5950.   MHz   37   41   dB   ISM 5G     6330.   10   6130.   MHz   37   41   dB   RX+2TX     6330.   0   8680.   MHz   35   39   dB   3f     8440.   10   8680.   MHz   20   37   dB   4f     10550.   10   10850.   MHz   20   37   dB   6f     12660.   10   13020.   MHz   15   34   dB   6f   |                      | 4220. to   |               | MHz | 40              | 49                 |      | dB  | 2f                |
| 4900.   to   5950.   MHz   37   41   dB   ISM 5G     5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   35   39   dB   3f     6330.   to   8680.   MHz   20   37   dB   4f     10550.   to   10850.   MHz   20   37   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f     1             1             1              1   |                      | 4340. to   | 13025.        | MHz | 15              | 33                 |      | dB  |                   |
| 5950.   to   6130.   MHz   37   41   dB   RX+2TX     6330.   to   6510.   MHz   35   39   dB   3f     8440.   to   8680.   MHz   20   37   dB   4f     10550.   to   10850.   MHz   20   37   dB   6f     12660.   to   13020.   MHz   15   34   dB   6f <t< td=""><td></td><td></td><td></td><td>MHz</td><td>37</td><td>41</td><td></td><td>dB</td><td>ISM 5G</td></t<>   |                      |            |               | MHz | 37              | 41                 |      | dB  | ISM 5G            |
| 6330.   to   6510.   MHz   35   39   dB   3f     8440.   to   8680.   MHz   20   37   dB   4f     10550.   to   10850.   MHz   20   37   dB   5f     12660.   to   13020.   MHz   15   34   dB   6f  |                      |            |               | MHz | 37              | 41                 |      | dB  | RX +2TX           |
| 8440.   to   8680.   MHz   20   37   dB   4f     10550.   to   10850.   MHz   20   37   dB   5f     12660.   to   13020.   MHz   15   34   dB   6f   |                      |            |               |     | 35              | 39                 |      | dB  | 3f                |
| 10550.   to   10850.   MHz   20   37   dB   5f     12660.   to   13020.   MHz   15   34   dB   6f  |                      |            |               |     | 20              | 37                 |      | dB  |                   |
| 12660.   to   13020.   MHz   15   34   dB   6f     Image: Second se   |                      |            |               |     | 20              | 37                 |      | dB  | 5f                |
|  |                      |            |               |     | 15              |                    |      | dB  |                   |
| Image: sector of the sector  |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: set of the |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state of |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state                 |                      |            |               |     |                 |                    |      |     |                   |
| Image: state of the state                 |                      |            |               |     |                 |                    |      |     |                   |
| Image: Sector of the sector                |                      |            |               |     |                 |                    |      |     |                   |
| Image: Sector of the sector                |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      |     |                   |
|  |                      |            |               |     |                 |                    |      | ļ   | ļ                 |
|  |                      |            |               |     |                 |                    |      |     |                   |

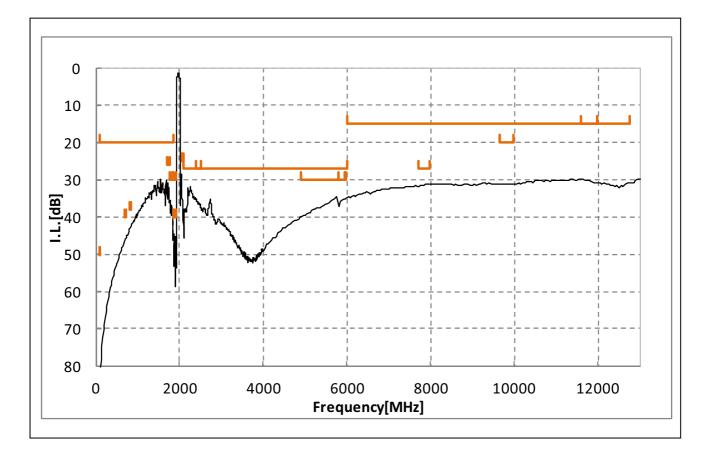
\* Typical value at 25±2deg.C



## **Electrical Characteristic**

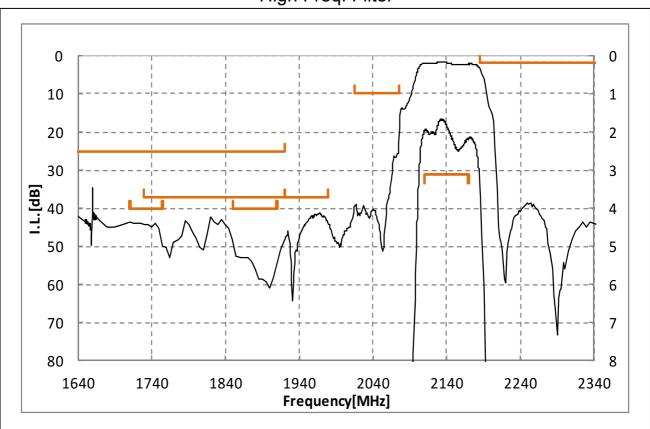


< Low Freq. Filter >

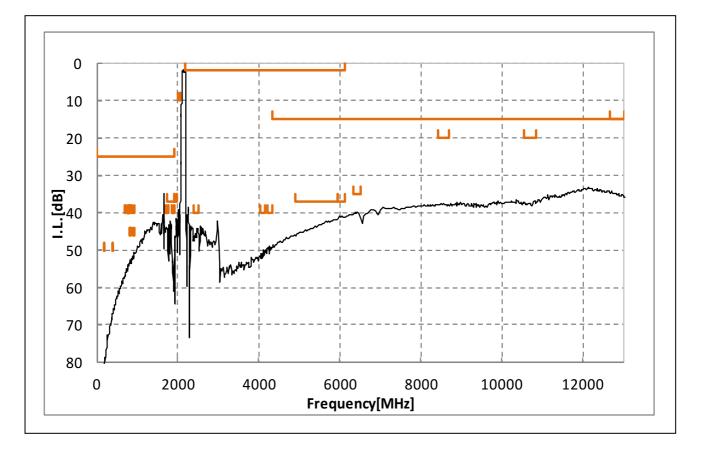








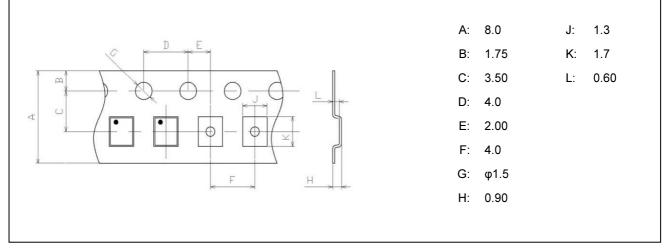
< High Freq. Filter >



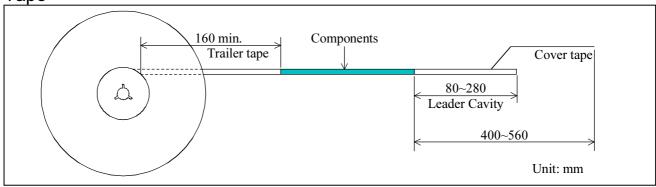


Dimensions of Tape & Reel unit: mm

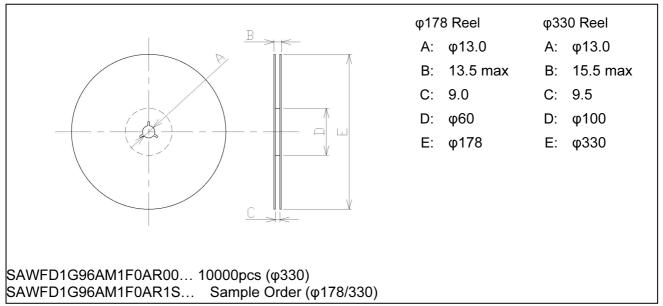
#### Carrier Tape



Tape



Reel





## Important Notice (1/2)

#### PLEASE READ THIS NOTICE BEFORE USING OUR PRODUCTS.

Please make sure that your product has been evaluated and confirmed from the aspect of the fitness for the specifications of our product specified in the front page of this product specifications (the "Product" or "Products") when our Product is mounted to your product. All the items and parameters in this product specification/datasheet/catalog have been prescribed on the premise that our Product is used for the purpose, under the condition and in the environment specified in this specification. You are requested not to use our Product deviating from the condition and the environment specified in this specification.

Please note that the only warranty that we provide regarding the Product is its conformance to the specifications provided herein. Accordingly, we shall not be responsible for any defects in products or equipment incorporating such Products, which are caused under the conditions other than those specified in this specification.

WE HEREBY DISCLAIMS ALL OTHER WARRANTIES REGARDING THE PRODUCTS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, THAT THEY ARE DEFECT-FREE, OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS.

The Product shall not be used for any application which requires especially high reliability or accuracy in order to prevent defect which incurs high possibility of damage to the third party's life, body or property such as the applications listed below as item (a) to (j) (the "Prohibited Application"). You acknowledge and agree that, if you use our Products in the Prohibited Applications, we will not be responsible for any damage caused by such use.

Furthermore, YOU AGREE TO INDEMNIFY AND DEFEND US AND OUR AFFILIATES AGAINST ALL CLAIMS, DAMAGES, COSTS, AND EXPENSES THAT MAY BE INCURRED, INCLUDING WITHOUT LIMITATION, ATTORNEY FEES AND COSTS, DUE TO THE USE OF OUR PRODUCTS IN THE PROHIBITED APPLICATIONS.

- (a) Aircraft equipment.
- (b) Aerospace equipment
- (c) Undersea equipment.
- (d) Power plant control equipment
- (e) Medical equipment.
- (f) Transportation equipment (vehicles, automotive, trains, ships, etc.).
- (g)Traffic signal equipment.
- (h)Disaster prevention / crime prevention equipment.
- (i) Burning / explosion control equipment
- (j) Application of similar complexity and/ or reliability requirements to the applications listed in the above.

For the avoidance of doubt, the Product is not automotive grade, and will not support such requests for automotive as below, also not support other specific requests for automotive.

- AEC-Q200
- PPAP
- IATF16949,VDA6.3
- Zero Defect program
- Long product life cycle
- Automotive 8D failure analysis and report



## Important Notice (2/2)

We expressly prohibit you from analyzing, breaking, Reverse-Engineering, remodeling altering, and reproducing our product. Our product cannot be used for the product which is prohibited from being manufactured, used, and sold by the regulations and laws in the world.

Please do not use the Product in molding condition.

This product is ESD (ElectroStatic Discharge) sensitive device. When you install or measure this, you should be careful not to add antistatic electricity or high voltage. Please be advised that you had better check anti serge voltage.

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Please do not use our Products, our technical information and other data provided by us for the purpose of developing of mass-destruction weapons and the purpose of military use. Moreover, you must comply with "foreign exchange and foreign trade law", the "U.S. export administration regulations", etc.

Please note that we may discontinue the manufacture of our products, due to reasons such as end of supply of materials and/or components from our suppliers.

Customer acknowledges that Murata will, if requested by you, conduct a failure analysis for defect or alleged defect of Products only at the level required for consumer grade Products, and thus such analysis may not always be available or be in accordance with your request (for example, in cases where the defect was caused by components in Products supplied to Murata from a third party).

The Product shall not be used in any other application/model than that of claimed to Murata.

Customer acknowledges that engineering samples may deviate from specifications and may contain defects due to their development status.

We reject any liability or product warranty for engineering samples.

In particular we disclaim liability for damages caused by

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·deviation or lapse in function of engineering sample,

·improper use of engineering samples.

We disclaim any liability for consequential and incidental damages.

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