

Datasheet of SAW Device

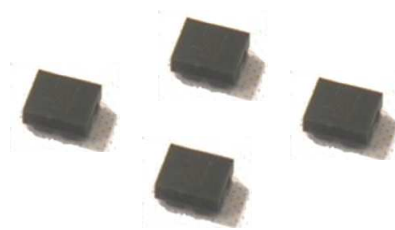
SAW Duplexer

for Band1 / Balanced / LR /1814

Murata PN: SAYEY1G95HA0F0A

■ Feature

- Small size
- LTE-A



Note : Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only.
Please also read caution at the end of this document.

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

| Revision Number | Date | Description |
|------------------------|-------------|-------------------------------|
| SAYEY1G95HA0F0A_rev. A | Jul-11-2013 | ■ Initial Release |
| SAYEY1G95HA0F0A_rev. B | Sep-20-2013 | |
| SAYEY1G95HA0F0A_rev. C | Apr-29-2014 | ■ Updated for MP |
| SAYEY1G95HA0F0A_rev. D | Sep-02-2015 | ■ Updated General Information |
| SAYEY1G95HA0F0A_rev. E | Sep-15-2016 | ■ Updated General Information |
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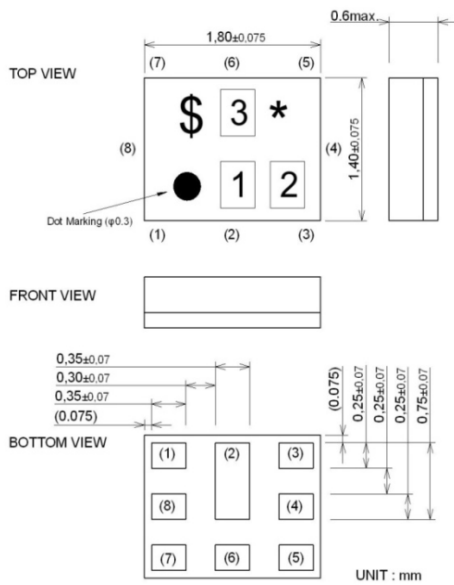
- Operating temperature : -20 to +85 deg.C
- Storage temperature : -40 to +85 deg.C
- Input Power : +29 dBm 5000 h 55 deg.C
- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)
- Minimum Resistance between the terminals : 10M ohm
- RoHS compliance : Yes

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions



Marking : Laser Printing

* : Month code(Refer to the table A)

\$: Date code(Refer to the table B)

1 : 4

2 : U

3 : A

Terminal Number

(6) : Ant

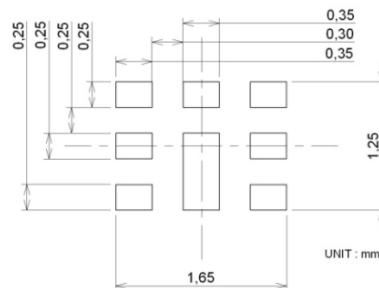
(3) : TX

(1)(8) : RX

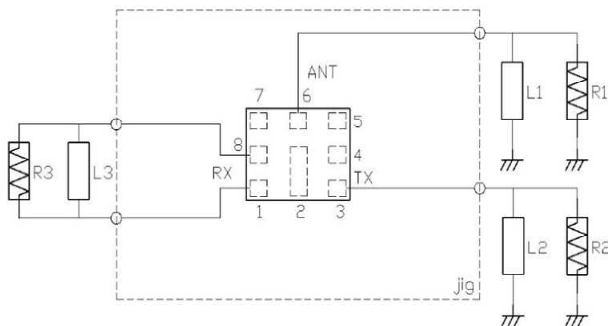
Others : GND

Notice) Please refer to Measurement Circuit for Port information in detail.

Land Pattern



Measurement Circuit (Top Thru View)



| | |
|--------------|----------------------------|
| R1 : 50 ohm | L1 : 2.1nH(Ideal inductor) |
| | : 2.5nH(LQP0603TN2N5) |
| | <Reference> |
| R2 : 50 ohm | L2 : 8nH(Ideal inductor) |
| R3 : 100 ohm | L3 : 10nH(Ideal inductor) |
| | |
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SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic < TX→ANT. >

| TX → ANT. | Characteristics (-20 to +85 deg.C) | | | Unit | Note |
|----------------------|---------------------------------------|-------|------|-------------------|-------------------------------|
| | min. | typ.* | max. | | |
| Center Frequency | | 1950 | | MHz | |
| Insertion Loss | 1920. to 1980. MHz | 1.9 | 2.0 | dB | |
| | 1920. to 1980. MHz | 1.9 | 2.0 | dB | +23 to +27deg.C |
| | 1922.4 to 1977.6 MHz | 1.8 | 1.9 | dB _{INT} | Any 3.84MHz |
| | 1922.4 to 1977.6 MHz | 1.8 | 1.9 | dB _{INT} | +23 to +27deg.C, Any 3.84MHz |
| Ripple Deviation | 1920. to 1980. MHz | 0.6 | 1.2 | dB | |
| VSWR | 1920. to 1980. MHz | 1.4 | 2.0 | | TX |
| | 1920. to 1980. MHz | 1.4 | 2.0 | | ANT. |
| Absolute Attenuation | 10. to 1574. MHz | 30 | 40 | dB | |
| | 420. to 494. MHz | 44 | 63 | dB | |
| | 815. to 830. MHz | 30 | 51 | dB | B18Tx |
| | 824. to 849. MHz | 30 | 50 | dB | B5Tx |
| | 830. to 845. MHz | 30 | 50 | dB | B19Tx |
| | 843. to 894. MHz | 44 | 49 | dB | |
| | 880. to 915. MHz | 30 | 48 | dB | B8Tx |
| | 925. to 960. MHz | 42 | 47 | dB | |
| | 1226. to 1250. MHz | 37 | 42 | dB | GPS L2 |
| | 1447.9 to 1462.9 MHz | 30 | 40 | dB | B21Tx |
| | 1475. to 1496. MHz | 38 | 40 | dB | B11Rx |
| | 1496. to 1511. MHz | 37 | 40 | dB | B21Rx |
| | 1559. to 1563. MHz | 38 | 40 | dB | Compass |
| | 1565.42 to 1573.37 MHz | 38 | 40 | dB | Wideband GPS, lower side lobe |
| | 1573.37 to 1577.46 MHz | 38 | 40 | dB | Regular GPS, main lobe |
| | 1577.46 to 1585.42 MHz | 38 | 40 | dB | Wideband GPS, upper side lobe |
| | 1597.55 to 1605.88 MHz | 38 | 41 | dB | GLONASS |
| | 1605.88 to 1805. MHz | 25 | 37 | dB | |
| | 1805. to 1865. MHz | 25 | 35 | dB | |
| | 1865. to 1880. MHz | 10 | 34 | dB | |
| | 1880. to 1895. MHz | 3.9 | 15.0 | dB | |
| | 2010. to 2025. MHz | 4.7 | 28.0 | dB | |
| | 2010. to 2025. MHz | 20 | 28 | dB | +23 to +27deg.C |
| | 2110. to 2170. MHz | 44 | 49 | dB | |
| | 2400. to 2500. MHz | 32 | 36 | dB | 2.4GHzISM |
| | 2620. to 2690. MHz | 28 | 33 | dB | |
| | 3840. to 3960. MHz | 23 | 29 | dB | 2f |
| | 4900. to 5950. MHz | 16 | 22 | dB | 3f |
| | 4905. to 5845. MHz | 17 | 22 | dB | |
| | 7680. to 7920. MHz | 15 | 26 | dB | 4f |
| | 9600. to 9900. MHz | 15 | 25 | dB | 5f |
| | 11520. to 11880. MHz | 15 | 25 | dB | 6f |
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* Typical value at 25±2deg.C

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic < ANT. →RX >

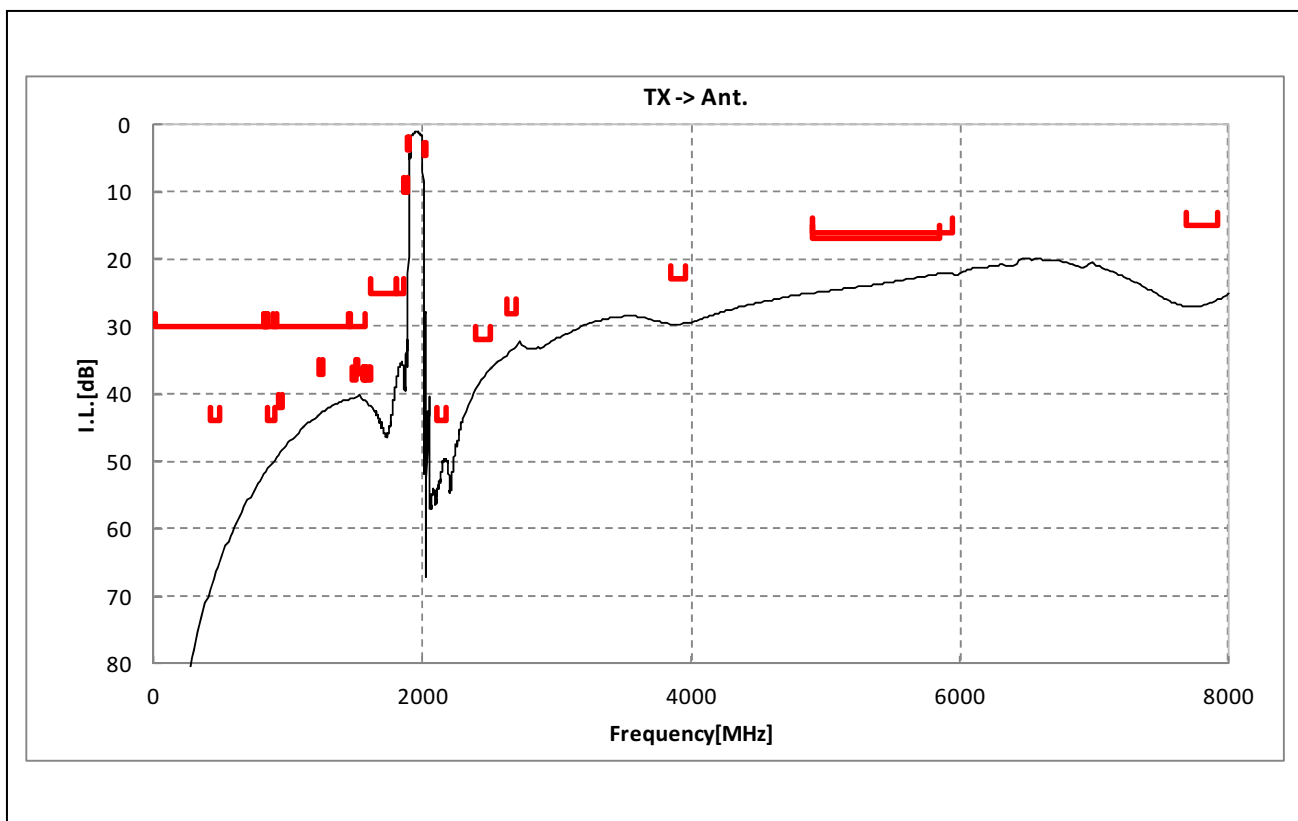
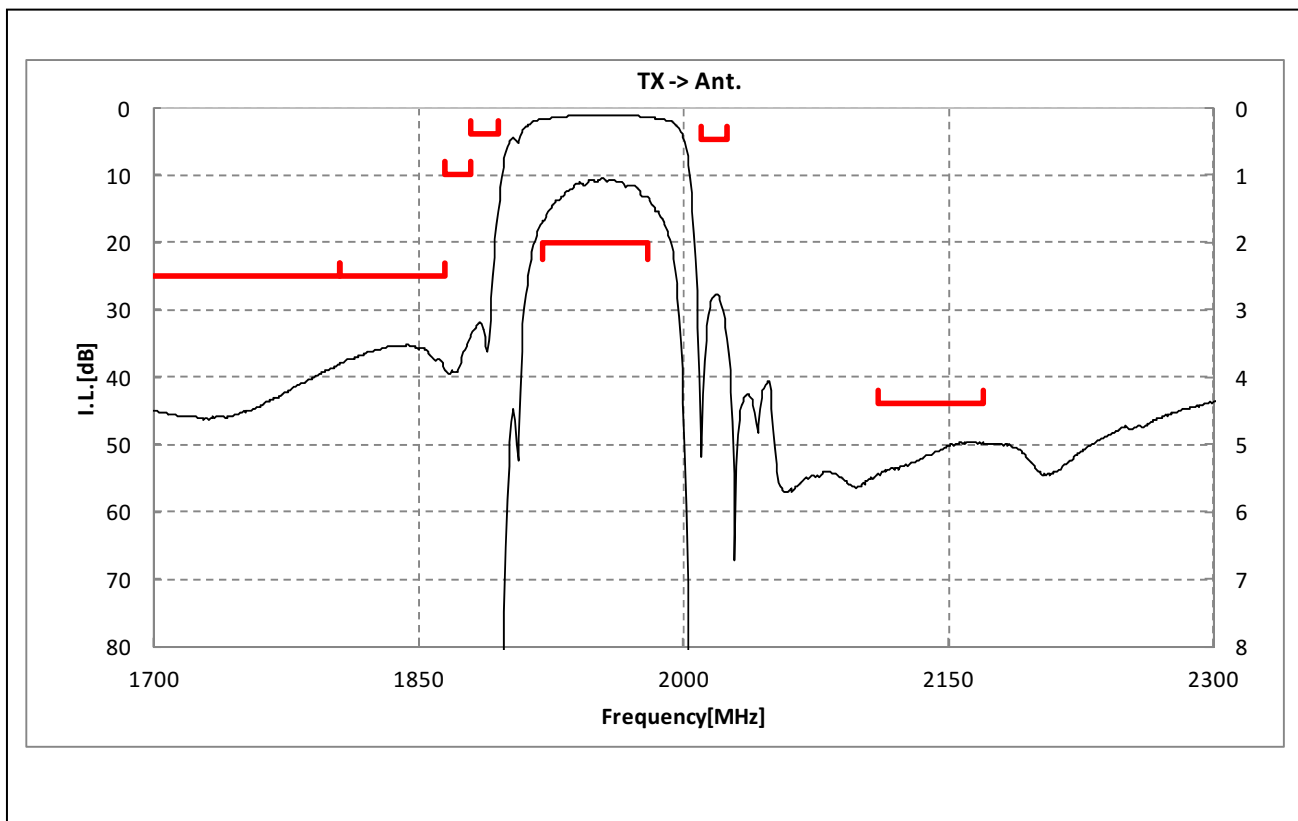
| ANT. → RX | | | | Characteristics (-20 to +85 deg.C) | | | Unit | Note | | | |
|----------------------|--------|----|--------|---------------------------------------|-------|------|------|-------------------|------------------------------|------|-----------|
| | | | | min. | typ.* | max. | | | | | |
| | | | | | | | | | | | |
| Center Frequency | | | | | 2140 | | MHz | | | | |
| Insertion Loss | 2110. | to | 2170. | MHz | 1.8 | 2.1 | | dB | | | |
| | 2110. | to | 2170. | MHz | 1.8 | 2.0 | | dB | +23 to +27deg.C | | |
| | 2112.4 | to | 2167.6 | MHz | 1.8 | 2.1 | | dB _{INT} | Any 3.84MHz | | |
| | 2112.4 | to | 2167.6 | MHz | 1.8 | 2.0 | | dB _{INT} | +23 to +27deg.C, Any 3.84MHz | | |
| Ripple Deviation | 2110. | to | 2170. | MHz | | 0.5 | 1.0 | | dB | | |
| VSWR | 2110. | to | 2170. | MHz | | 1.5 | 2.0 | | | RX | |
| | 2110. | to | 2170. | MHz | | 1.5 | 2.0 | | | ANT. | |
| Amplitude Balance | 2110. | to | 2170. | MHz | -1.0 | -0.3 | 1.0 | | | dB | |
| Phase Balance | 2110. | to | 2170. | MHz | 170 | 174 | 190 | | | deg. | |
| Absolute Attenuation | 1. | to | 1920. | MHz | 27 | 32 | | | | dB | |
| | | | 190. | MHz | 40 | 124 | | | | dB | Rx-Tx |
| | 718. | to | 748. | MHz | 50 | 83 | | | | dB | B28Tx |
| | 814. | to | 849. | MHz | 40 | 81 | | | | dB | B26Tx |
| | 880. | to | 915. | MHz | 40 | 76 | | | | dB | B8Tx |
| | 1427. | to | 1447. | MHz | 40 | 49 | | | | dB | B11Tx |
| | 1447. | to | 1463. | MHz | 40 | 49 | | | | dB | B21Tx |
| | 1730. | to | 1790. | MHz | 40 | 45 | | | | dB | 2Tx-Rx |
| | 1710. | to | 1785. | MHz | 40 | 45 | | | | dB | B3Tx |
| | 1920. | to | 1980. | MHz | 45 | 59 | | | | dB | Tx |
| | 1980. | to | 2015. | MHz | 15 | 50 | | | | dB | |
| | 2015. | to | 2050. | MHz | 18 | 29 | | | | dB | (Rx+Tx)/2 |
| | 2050. | to | 2075. | MHz | 3.9 | 9.0 | | | | dB | |
| | 2255. | to | 6130. | MHz | 28 | 33 | | | | dB | |
| | 2400. | to | 2500. | MHz | 28 | 34 | | | | dB | 2.4GHzISM |
| | 2500. | to | 2570. | MHz | 38 | 43 | | | | dB | B7Tx |
| | 4030. | to | 4150. | MHz | 40 | 52 | | | | dB | Rx+Tx |
| | 4220. | to | 4340. | MHz | 40 | 51 | | | | dB | 2f |
| | 4340. | to | 13025. | MHz | 15 | 39 | | | | dB | |
| | 4900. | to | 5950. | MHz | 34 | 48 | | | | dB | 5GHzISM |
| | 5950. | to | 6130. | MHz | 30 | 47 | | | | dB | Rx+2Tx |
| | 6130. | to | 6330. | MHz | 30 | 47 | | | | dB | |
| | 6330. | to | 6510. | MHz | 30 | 45 | | | | dB | 3f |
| | 8440. | to | 8680. | MHz | 20 | 41 | | | | dB | 4f |
| | 10550. | to | 10850. | MHz | 20 | 41 | | | | dB | 5f |
| | 12660. | to | 13020. | MHz | 15 | 41 | | | | dB | 6f |
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* Typical value at 25±2deg.C

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic

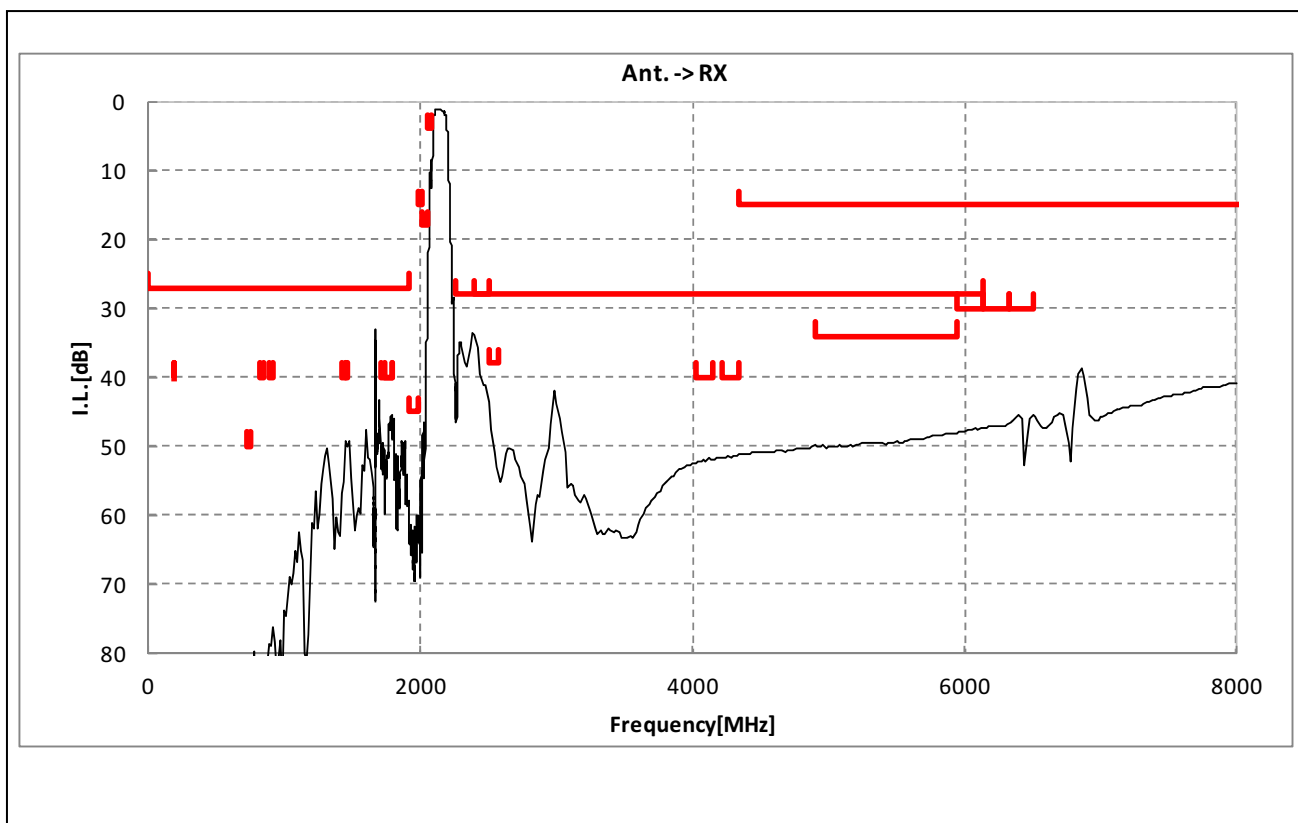
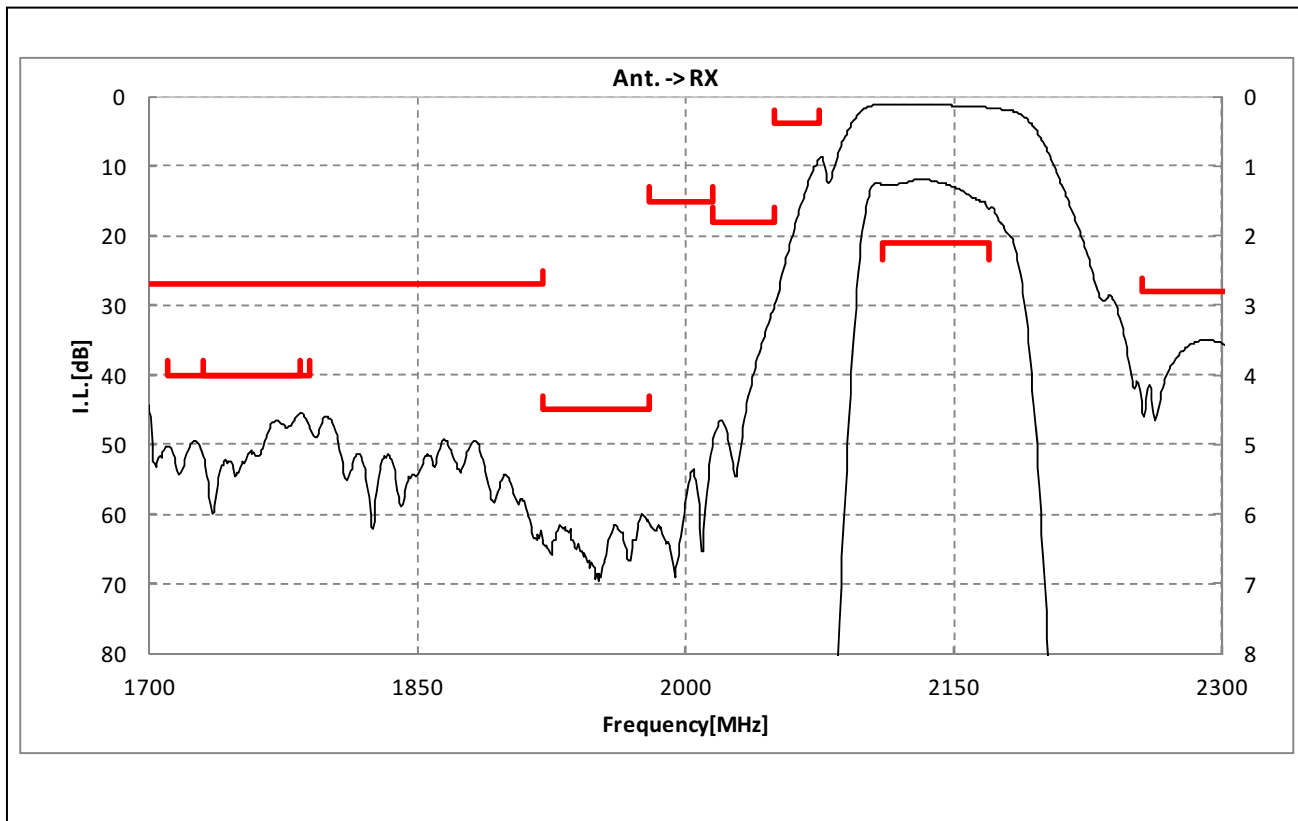
< TX→ANT. >



SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic

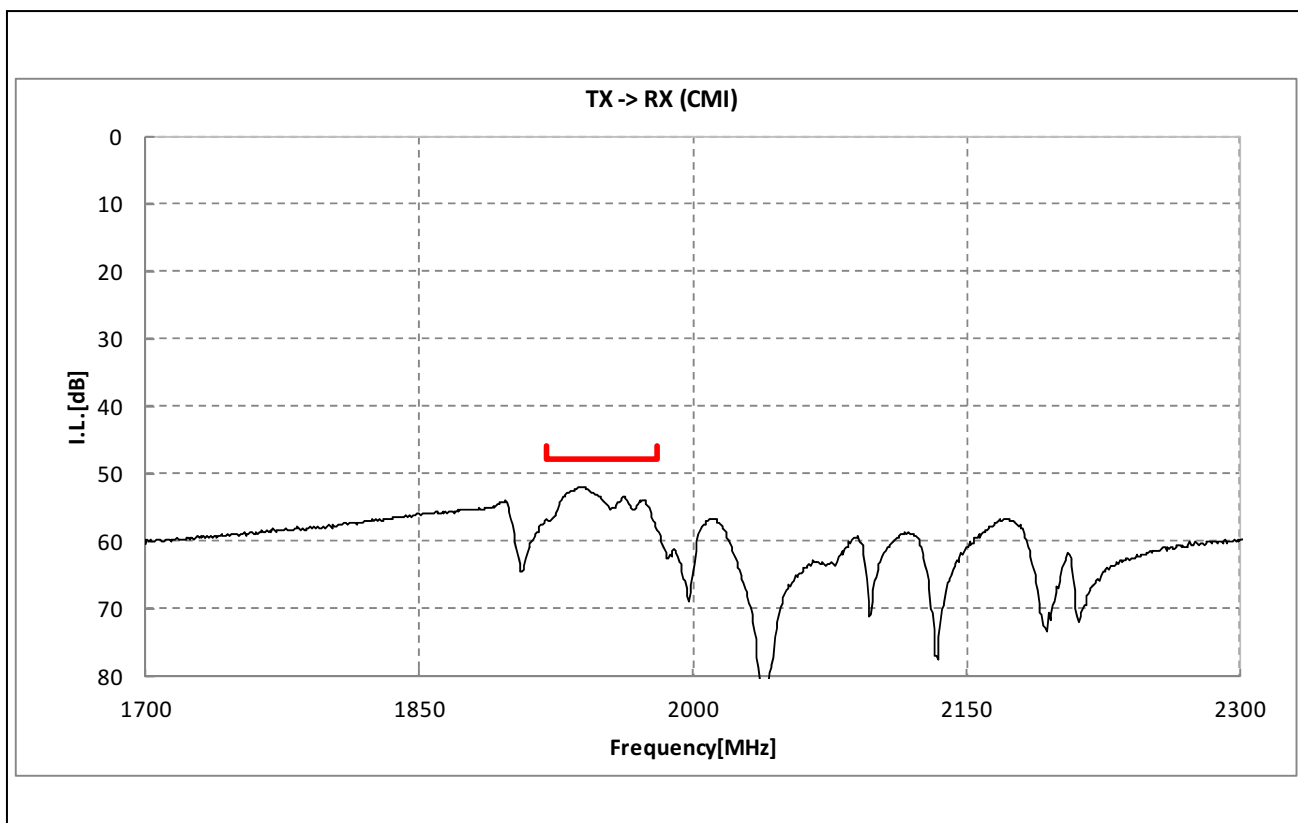
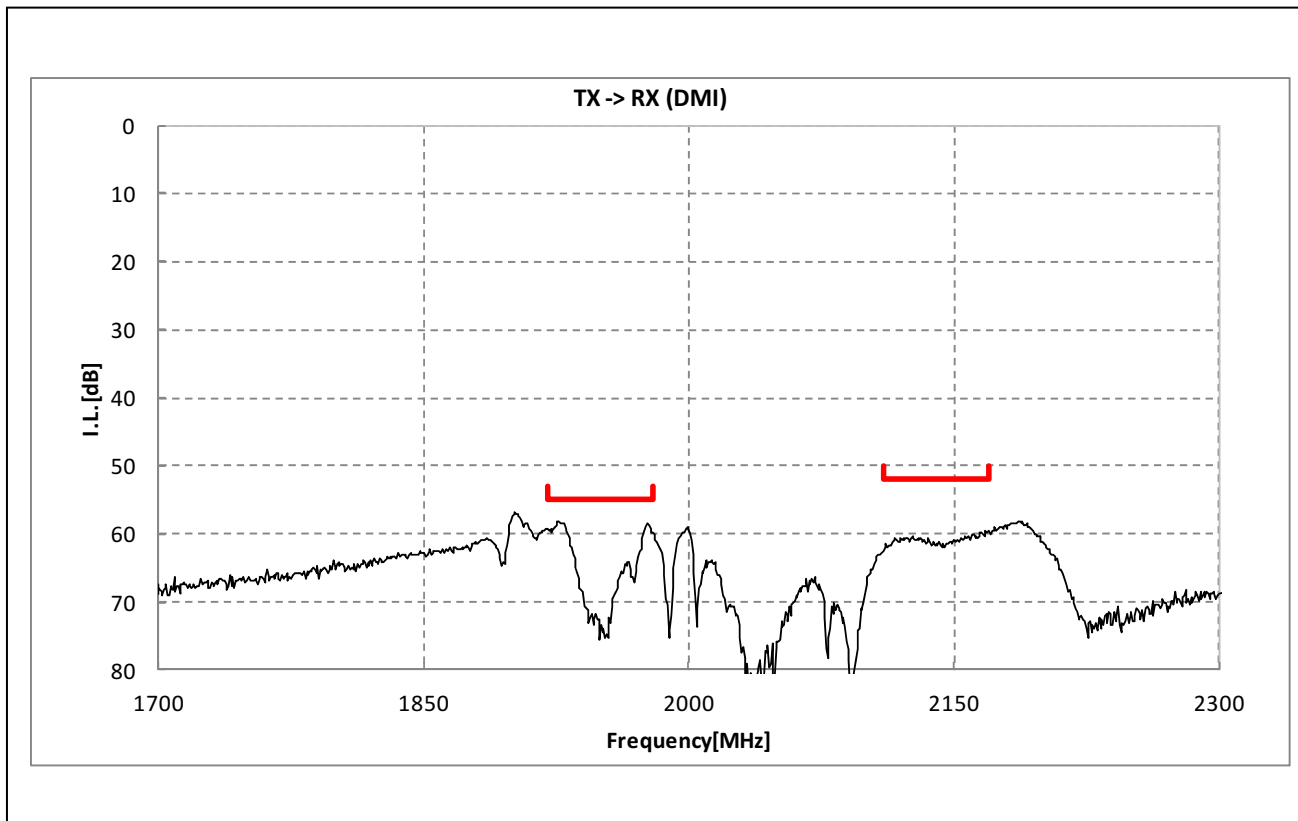
< ANT.→RX >



SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic

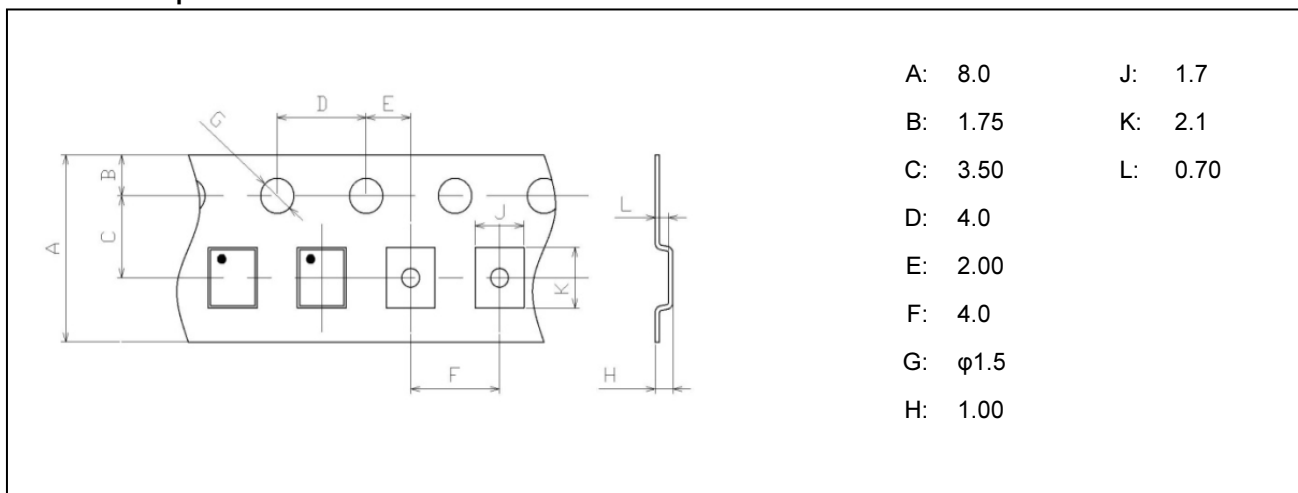
< TX→RX. >



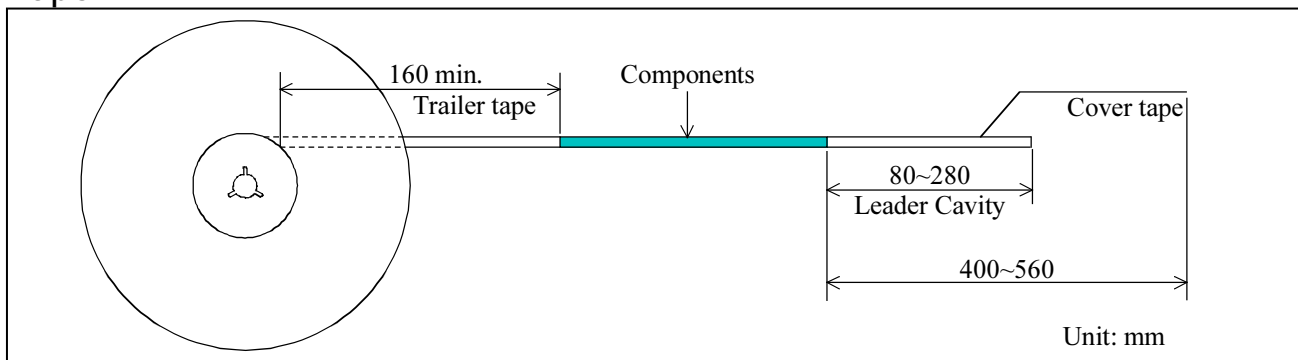
SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Dimensions of Tape & Reel unit: mm

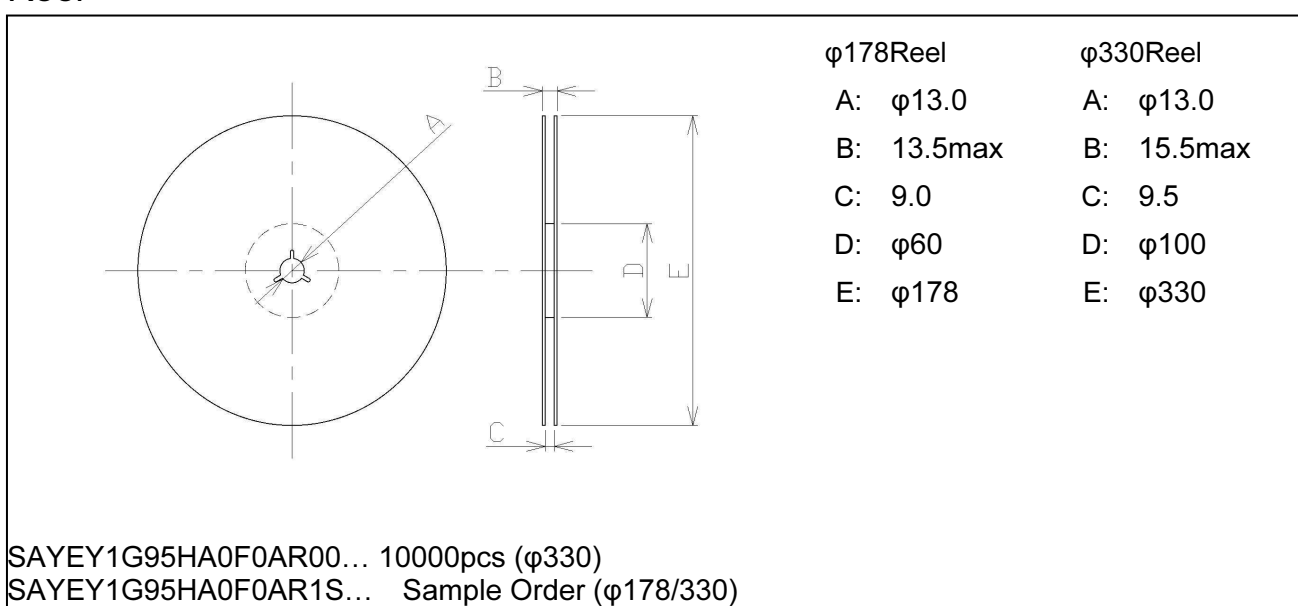
Carrier Tape



Tape



Reel



SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Marking Code

Table A: Month Code

| | | | | | | | | | | | | |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2013 2017 2021 | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | A | B | C | D | E | F | G | H | J | K | L | M |
| 2014 2018 2022 | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | N | P | Q | R | S | T | U | V | W | X | Y | Z |
| 2015 2019 2023 | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | a | b | c̄ | d | e | f | g | h | j | k | l | m |
| 2016 2020 2024 | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
| | n | p | q | r | s | t | u | v | w | x | y | z |

Table B: Date Code

| | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|
| date | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | |
| code | A | B | C | D | E | F | G | H | J | K | |
| date | 11th | 12th | 13th | 14th | 15th | 16th | 17th | 18th | 19th | 20th | |
| code | L | M | N | P | Q | R | S | T | U | V | |
| date | 21st | 22nd | 23rd | 24th | 25th | 26th | 27th | 28th | 29th | 30th | 31st |
| code | W | X | Y | Z | a | b | c̄ | d | e | f | g |

Important Notice (1/2)

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SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Important Notice (2/2)

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- Aerospace equipment
- Undersea equipment.
- Power plant control equipment - Medical equipment.
- Transportation equipment (vehicles, trains, ships, elevator, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Burning / explosion control equipment
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.

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

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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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