

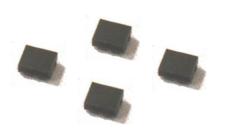
Datasheet of SAW Device

SAW Duplexer for Band1 / Unbalanced / LR /1612

Murata PN: SAYAV1G95BA0F0A

Feature

- Low Insertion Loss
- > High Isolation
- > 5GNR



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 H



General Information

- Operating temperature : -20 to +85 deg.C - Storage temperature : -40 to +85 deg.C

- Input Power : +30.0dBm 5000h +50deg.C (1) +28.5dBm 5000h +50deg.C (2)

(1) applicable for W-CDMA, SC-FDMA, DFT-s-OFDM

(2) applicable for CP-OFDM

D.C. Volatage between the terminals : 3V (25+/-2 deg.C)
 Minimum Resistance between the terminals : 10M ohm
 RoHS compliance : Yes

- ESD (ElectroStatic Discharge) sensitive device

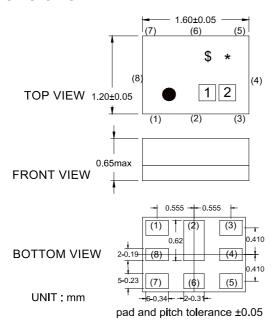
The input power shall be applied to Tx-port within own Tx passband frequency range.



Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions



Marking: Laser Printing

*: Month code

\$: Date code

1:2

2:2

Terminal Number

(6): Ant

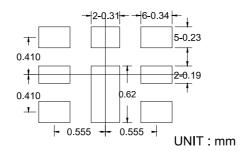
(3):TX

(1): RX

Others: GND

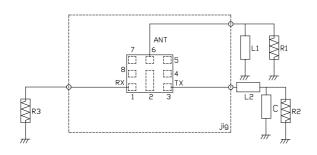
Notice) Please refer to Measurement Circuit for Port information in detail.

Land Pattern



pad and pitch tolerance ±0.05

Measurement Circuit (Top Thru View)



R1:50 ohm	L1 :2.6nH(Ideal inductor)
	:2.9nH(LQP03TN2N9)
	<reference></reference>
R2 : 50 ohm	L2 :1.8nH(Ideal inductor)
	C :0.8pF(Ideal capacitor)
R3 : 50 ohm	



Electrical Characteristic < TX → ANT. >

$TX \rightarrow ANT$.					Characteristics (-20 to +85 deg.C)			Unit	Note
			min.	typ.*	max.				
Center Frequency						1950		MHz	
Insertion Loss		to	1980.	MHz		1.5	1.9	dB	
		to	1979.75 1977.5	MHz		1.5	1.9	dB	A second SMI In
Ripple Deviation		to	1977.5	MHz MHz		1.4 0.2	1.9 0.5	dB _{INT} dB	Any 4.5MHz Over any 5MHz in-band
VSWR		to to	1980.	MHz		1.1	2.0	иь	TX
I VOVIN		to	1980.	MHz		1.2	2.0		ANT.
Absolute Attenuation		to	1574.	MHz	29	34		dB	,
		to	494.	MHz	40	45		dB	450MHz RX Att.
	814.	to	849.	MHz	30	37		dB	B26 TX CA
		to	915.	MHz	30	36		dB	B8 TX CA
		to	960.	MHz	30	35		dB	ISM900
		to	1250.	MHz	30	35		dB	GPS L2
		to	1462.9	MHz	30	42		dB	B11/21 TX CA
		to	1511.	MHz	34	45		dB	B11/21 RX
	1559. 1565.42	to	1563. 1573.37	MHz	43 43	49 54		dB	Compass Wideband GPS lower side
	1573.37	to	1573.37	MHz MHz	43	54		dB dB	Regular GPS main lobe
	1577.47	to	1585.42	MHz	43	58		dB	Wideband GPS upper side
	1597.55	to.	1605.89	MHz	43	61		dB	GLONASS
	1605.88	to	1805.	MHz	25	33		dB	
		to	1865.	MHz	20	24		dB	Protected DCS band
	1865.	to	1880.	MHz	10	23		dB	Protected DCS band
		to	1895.	MHz	8.0	16.5		dB	
		to	2025.	MHz	15	24		dB	+15 to +85deg.C
		to	2170.	MHz	44	55		dB	IMT Att.
		to	2400.	MHz	38	43		dB	B40
		to	2500.	MHz	34	39		dB	ISM2.4
		to	2690. 3960.	MHz MHz	29 20	33 26		dB dB	Protected 2.6GHz band 2f
		to to	5950.	MHz	17	27		dВ	2 3f
		to	5845.	MHz	17	27		dB	WLAN 801.11a
	7680.	to	7920.	MHz	9.0	28.1		dB	4f
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT. → RX >

ANT. → RX						racteri			
					Characteristics (-20 to +85 deg.C)		Unit	Note	
					min.	typ.*	max.		
Center Frequency						2140		MHz	
Insertion Loss	2110.	to	2170.	MHz		1.7	2.3	dB	
	2110.25		2169.75	MHz		1.7	2.3	dB	
Dinale Deviation		to	2167.5	MHz		1.7	2.3	dB _{INT}	Any 4.5MHz
Ripple Deviation VSWR	2110. 2110.	to	2170. 2170.	MHz		0.5 1.7	1.2 2.1	dB	DV
VSVVR	2110.	to	2170.	MHz MHz		1.6	2.1		RX ANT.
Absolute Attenuation	1.	to to	1920.	MHz	33	39	2.1	dB	AIVI.
/ togorate / titeridation	190.	to	190.	MHz	50	81		dB	RX-TX
	718.	to	748.	MHz	40	57		dB	B28-B TX CA
	814.	to	849.	MHz	40	55		dB	B26 TX CA
	880.	to	915.	MHz	40	54		dB	B8 TX CA
	1427.	to	1463.	MHz	39	47		dB	B11/21 TX CA
	1730.	to	1790.	MHz	35	41		dB	2TX-RX
	1710.	to	1785.	MHz	33	39		dB	B3 TX CA
	1920.	to	1980.	MHz	45	49		dB	TX
	1980.	to	2015.	MHz	15	51		dB	L(D)(; T)()()
	2015. 2255.	to	2075. 6130.	MHz	5.0 24	11.1 30		dB dB	(RX+TX)/2
	2300.	to	2400.	MHz MHz	26	31		dB dB	B40
	2400.	to to	2500.	MHz	30	35		dB dB	ISM2.4
	2500.	to	2570.	MHz	38	45		dB	B7 TX CA
	4030.	to	4150.	MHz	33	40		dB	RX+TX
	4220.	to	4340.	MHz	32	39		dB	2f
	4900.	to	5950.	MHz	27	35		dB	ISM 5G
	5950.	to	6130.	MHz	27	35		dB	RX+2TX
	6130.	to	6330.	MHz	27	34		dB	
	6330.	to	6510.	MHz	26	34		dB	3f
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < TX → RX >

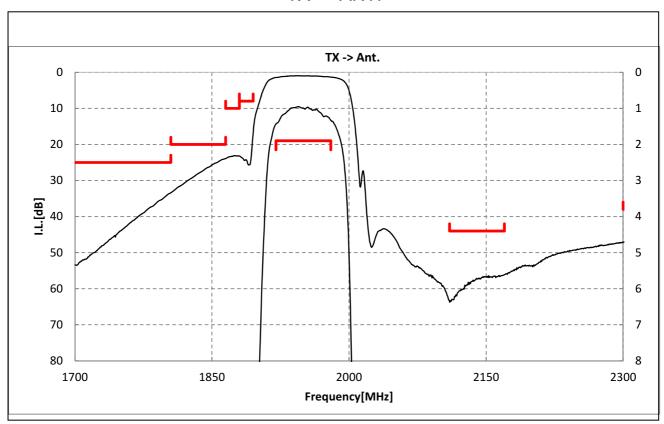
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				Cha	racteri	stics		
$TX \rightarrow RX$					(-20 to +85 deg.C)		Unit	Note
				min.	typ.*	max.	J	1 1010
laciation				1111111.	typ.	IIIax.		<u> </u>
Isolation	1574 1	1577.	NAL I	40	65		dB	
	1574. to		MHz					T)
	1920. to	1980.	MHz	54	59		dB	TX
	1920.25 to	1979.75		54	59		dB	TX
	1922.5 to	1977.5	MHz	54	59		dB _{INT}	Any 4.5MHz, TX
	2110. to	2170.	MHz	55	64		dB	RX
	2110.25 to	2169.75	MHz	55	64		dB	RX
	2112.5 to	2167.5	MHz	55	65		dB_{INT}	Any 4.5MHz, RX
	3830. to	3970.	MHz	20	57		dB	TX 2nd harmonic Att.
	5750. to	5950.	MHz	20	74		dB	TX 3rd harmonic Att.
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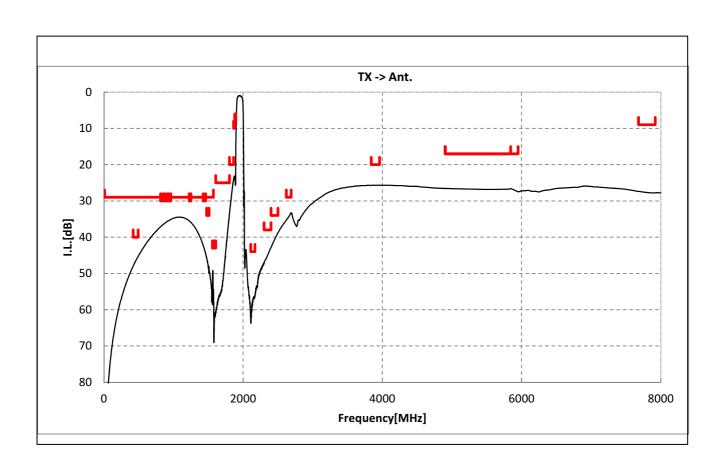
^{*} Typical value at 25±2deg.C



Electrical Characteristic

 $< TX \rightarrow ANT. >$

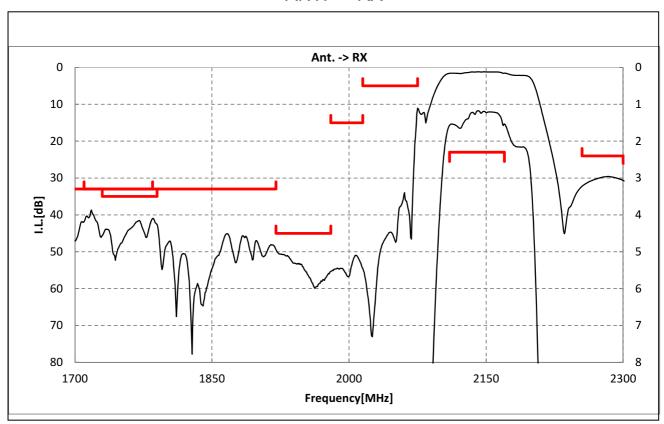


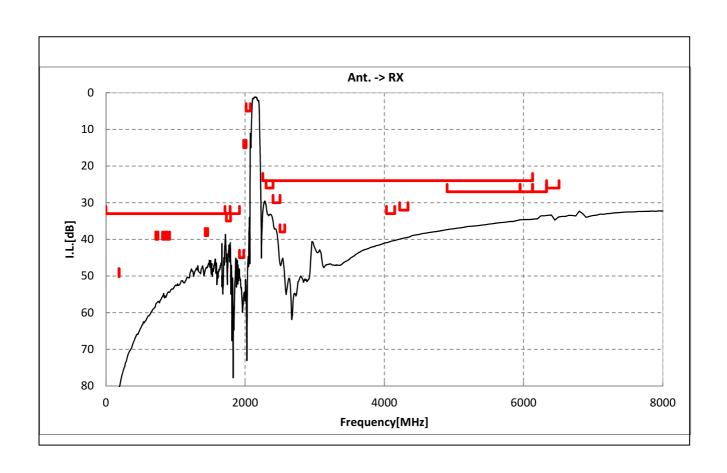




Electrical Characteristic

 $< ANT. \rightarrow RX >$

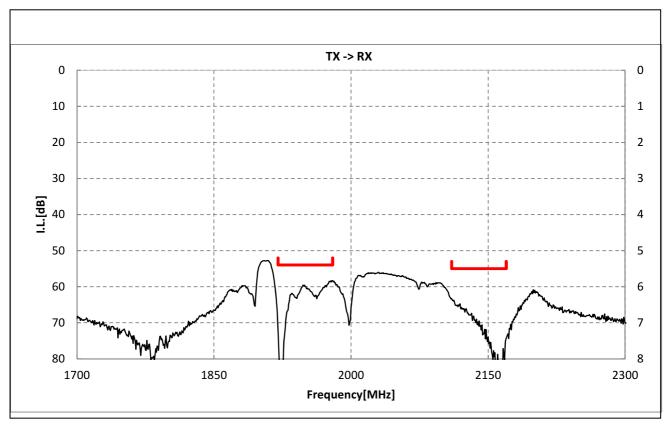


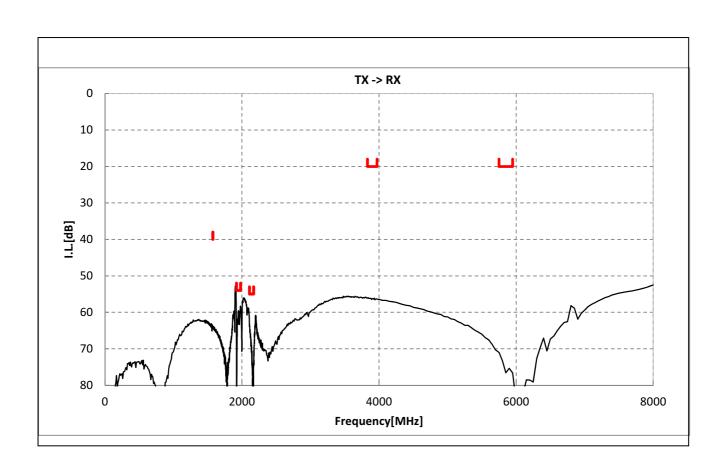




Electrical Characteristic

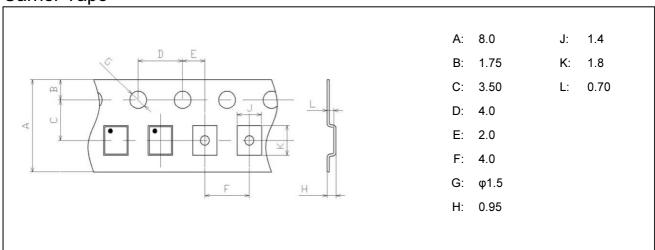
$$< TX \rightarrow RX >$$



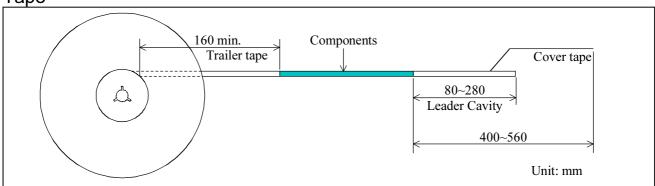


Dimensions of Tape & Reel unit: mm

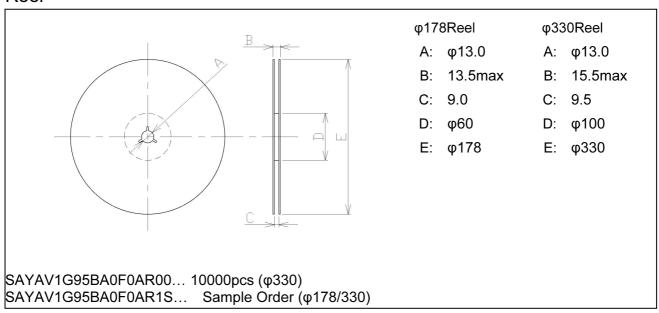
Carrier Tape



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.

We do not warrant or represent that any license, either express or implied, is granted under any our patent right, copyright, mask work right, or our other intellectual property right relating to any combination, machine, or process in which our Products or services are used. Information provided by us regarding third-party products or services does not constitute a license from us to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from us under our patents or other intellectual property.

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

- •the use of the engineering sample other than for evaluation purposes, particularly the installation or integration in the Product to be sold by you,
 - 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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>>Murata(村田)