

# **Datasheet of SAW Device**

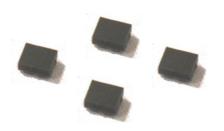
# **SAW Duplexer**

for Band4 / Unbalanced / LR /1814

Murata PN: SAYEY1G73BA0F0A

### Feature

- > LTE-A
- ➤ High Power Durability



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.





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

- Input Power : +29.5 dBm 5000 h +50 deg.C +30.0 dBm 2000 h +50 deg.C

- 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

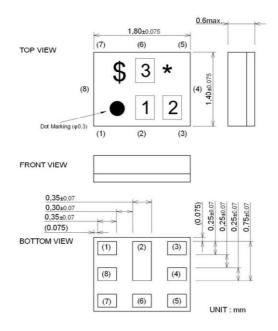
The input power shall be applied to Tx-port within own Tx passband frequency range.



### Package Dimensions & Recommended Land Pattern

unit: mm

#### **Dimensions**



Marking: Laser Printing

\*: Month code

\$: Date code

1:6

2: M

3 : A

#### **Terminal Number**

(6): Ant

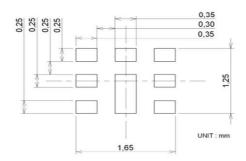
(3):TX

(1): RX

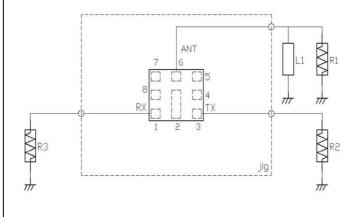
Others: GND

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

#### **Land Pattern**



# Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :3.3nH(Ideal inductor)
	:3.6nH(LQP03TN3N6)
	<reference></reference>
R2 : 50 ohm	
R3 : 50 ohm	



# Electrical Characteristic < TX→ANT. >

$TX \rightarrow ANT$ .					Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.			
Center Frequency	4740		4755			1733	4.0	MHz	
Insertion Loss	1710. 1710.25	to_	1755. 1754.75	MHz MHz		1.5 1.5	1.9 1.9	dB dB	
		to to	1754.75	MHz		1.4	1.8	dB <sub>INT</sub>	Any 4.5MHz
Ripple Deviation		to	1755.	MHz		0.3	1.5	dB <sub>INT</sub>	Any 5MHz
VSWR		to	1755.	MHz		1.4	2.0	QD.	TX
VOVII		to	1755.	MHz		1.4	2.0		ANT.
Absolute Attenuation		to	728.	MHz	30	48		dB	,
		to	716.	MHz	30	48		dB	B12 TX
		to	716.	MHz	30	48		dB	B17 TX
	716.	to	746.	MHz	40	47		dB	700MHz RX Rejection
	777.	to	787.	MHz	30	47		dB	B13 TX
	824.	to	849.	MHz	30	46		dB	B5 TX
		to	894.	MHz	37	46		dB	BC10 RX
	1226.	to	1250.	MHz	34	42		dB	GPS L2
	1559.	<u>to</u>	1563.	MHz	42	50		dB	COMPASS
	1565.42	to	1573.37	MHz	43	51		dB	Lower GPS
	1573.37		1577.46	MHz	45	53		dB	Regular GPS
	1577.46	to	1585.42	MHz	45	53		dB	Upper GPS
	1597.55 1805.		1605.89	MHz	43	53		dB	GLONASS
		to to	1880. 1990.	MHz MHz	42 41	49 47		dB dB	DCS RX PCS RX
		to	2155.	MHz	44	52		dB	RX
		to.	2360.	MHz	40	49		dB	WCS RX
		to to	2500.	MHz	35	49		dB	ISM2.4
		to to	2494.	MHz	40	47		dB	WLAN co-ex
		to	2570.	MHz	39	49		dB	B7 TX
	<b></b>	to	3520.	MHz	25	42		dB	2f
	4900.	to	5950.	MHz	10	15		dB	ISM 5G
	4905.	to	5267.	MHz	10	15		dB	WLAN co-ex
		to	7030.	MHz	10	18		dB	4f
		to	8785.	MHz	12	18		dB	5f
	10250.	to	10540.	MHz	10	18		dB	6f
	11960.	to	12295.	MHz	2.0	18.0		dB	7f
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<sup>\*</sup> Typical value at 25±2deg.C



### Electrical Characteristic < ANT.→RX >

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ANT. → RX					Characteristics			Unit	Note
					( -20 to +85 deg.C )				
					min.	typ.*	max.		
Center Frequency	1					2133		MHz	
Insertion Loss	2110.	to	2155.	MHz		1.8	2.3	dB	
linsertion Loss	2110.25	to	2154.75	MHz		1.8	2.3	dB	
	2112.5		2152.5	MHz		1.8	2.3	dB <sub>INT</sub>	Any 4.5MHz
Dinnle Deviction		to	2155.			0.2	1.2	dB <sub>INT</sub>	
Ripple Deviation	2110.	to		MHz				ав	Any 5MHz
VSWR	2110.	to	2155.	MHz		2.0	2.2		RX
	2110.	to	2155.	MHz	40	1.7	2.2		ANT.
Absolute Attenuation	10.	to	699.	MHz	40	53		dB	
	400.	to	400.	MHz	50	62		dB	RX - TX
	699.	to	714.	MHz	45	52		dB	B12 TX
	777.	to	787.	MHz	40	51		dB	B13 TX
	824.	to	849.	MHz	40	50		dB	B5 TX
	1310.	to	1355.	MHz	38	44		dB	2TX - RX
	1710.	to	1755.	MHz	45	53		dB	TX
	1755.	to	2025.	MHz	15	38		dB	
	1910.	to	1955.	MHz	30	41		dB	(RX + TX) / 2
	1955.	to	2255.	MHz	1.0	1.2		dB	<u>'</u>
	2305.	to	2315.	MHz	29	35		dB	WCS TX
	2400.	to	2500.	MHz	35	41		dB	ISM2.4
	2500.		3820.	MHz	32	38		dB	IOWIE.T
	3820.	to	3020. 3910.		33	38		dB dB	DV + TV
		to		MHz					RX + TX
	4420.	to	4310.	MHz	25	34		dB	2f
	4900.	to	5950.	MHz	21	26		dB	ISM 5G
	5510.	to	5685.	MHz	21	26		dB	WLAN co-ex
	5530.	to	5665.	MHz	21	26		dB	RX + 2TX
	6330.	to	6465.	MHz	20	25		dB	3f
	8440.	to	8620.	MHz	13	22		dB	4f
	10540.	to	10785.	MHz	10	22		dB	5f
	12660.	to	12930.	MHz	10	22		dB	6f
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<sup>\*</sup> Typical value at 25±2deg.C



### Electrical Characteristic < TX→RX. >

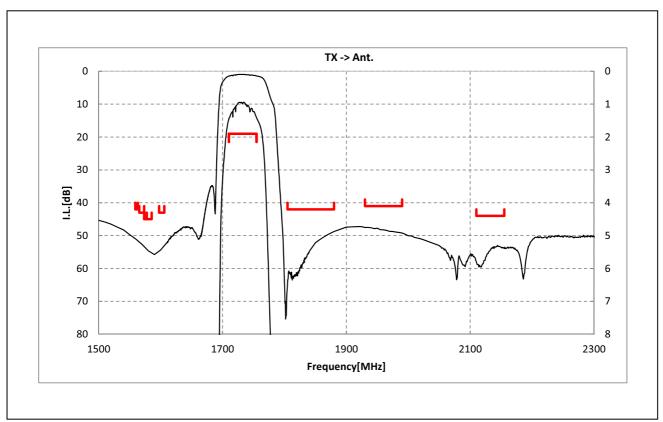
Tiectrical Cria	X → RX		<u> </u>	170	Cha	racteri to +85 d	stics eg.C)	Unit	Note
					min.	typ.*	max.		
Isolation	1710.	to	1755.	MHz	54	57		dB	TX
	1712.5	to	1752.5	MHz	54	57		dB <sub>INT</sub>	TX, Any 4.5MHz
	2110.	to	2155.	MHz	51	54		dB	RX
	2112.5	to	2152.5	MHz	51	55		dB <sub>INT</sub>	RX, Any 4.5MHz
	1574.	to	1577.	MHz	40	62		dB	GPS
	3410.	to	3520.	MHz	20	52		dB	2f
	5120.	to	5275.	MHz	20	44		dB	3f
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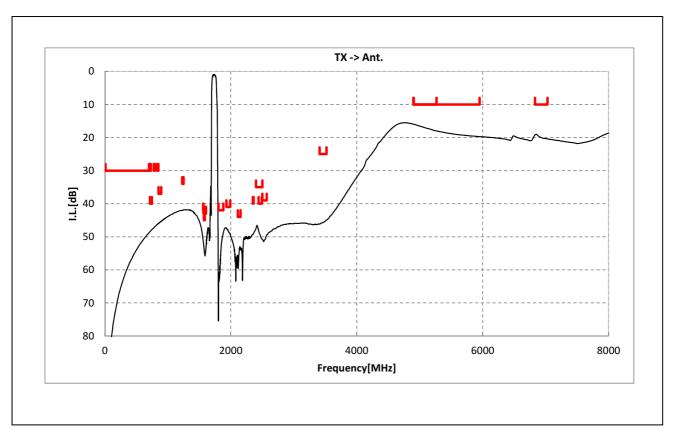
<sup>\*</sup> Typical value at 25±2deg.C



#### **Electrical Characteristic**

#### < TX→ANT. >

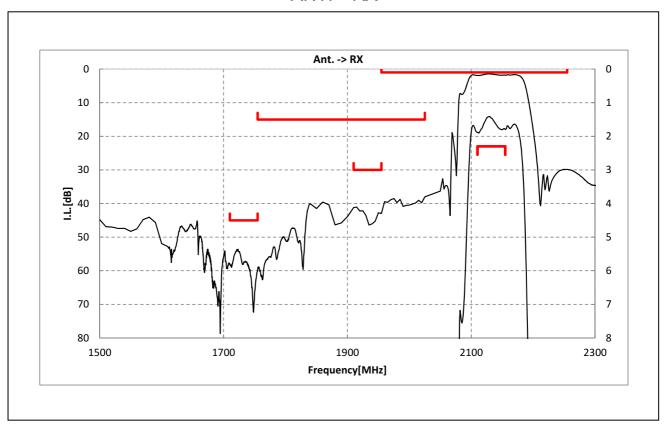


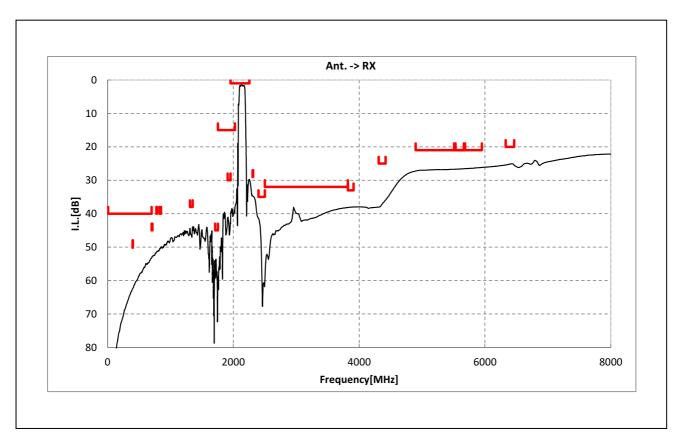




#### **Electrical Characteristic**

#### < ANT.→RX >

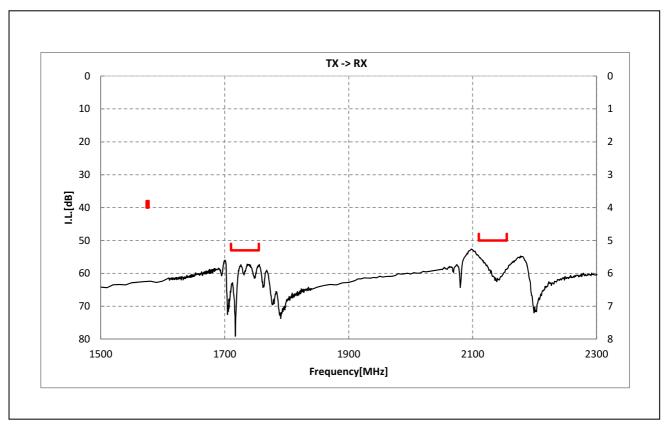


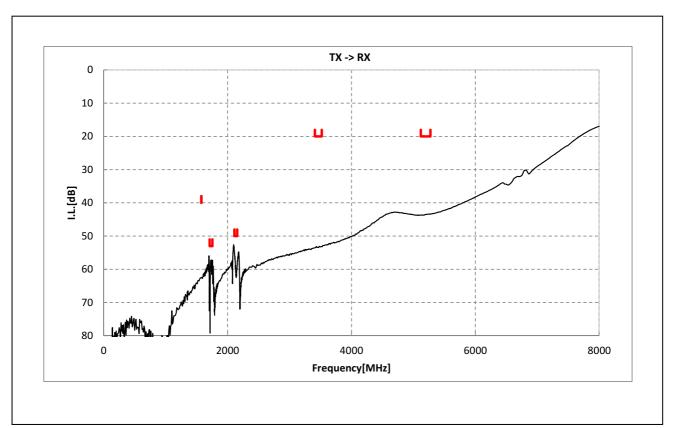




#### **Electrical Characteristic**

< TX→RX. >

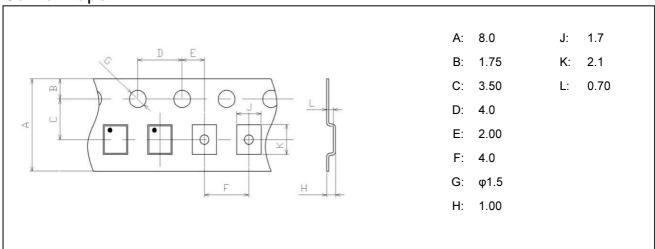




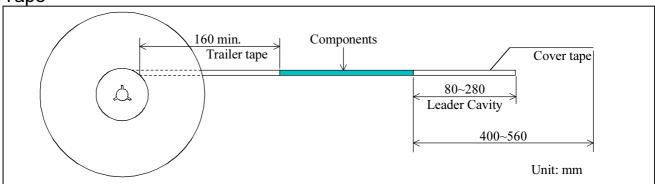


### Dimensions of Tape & Reel unit: mm

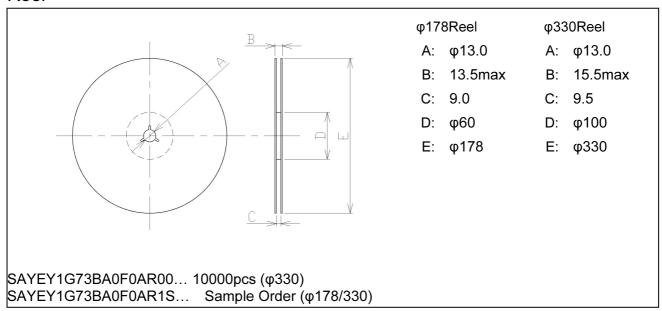
#### **Carrier Tape**



#### 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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