

# **Datasheet of SAW Device**

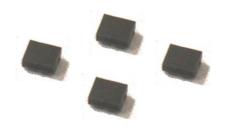
## SAW Duplexer

for Band3 / Unbalanced / LR /1814

Murata PN: SAYEY1G74BC0B0A

### Feature

- > LTE-A
- ➤ High Power Durability
- ➤ For 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.





#### **General Information**

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

- Input Power : +30.0dBm 3000h +50deg.C (1) +28.5dBm 3000h +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

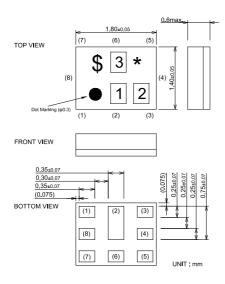
The input power shall be applied to Tx-port within own Tx passband frequency range.



### Package Dimensions & Recommended Land Pattern

unit: mm

#### **Dimensions**



Marking: Laser Printing

\*: Month code

\$: Date code

1:6

2:W

3 : A

#### **Terminal Number**

(6): Ant

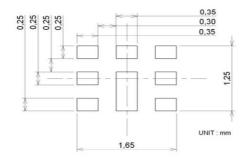
(3):TX

(1): RX

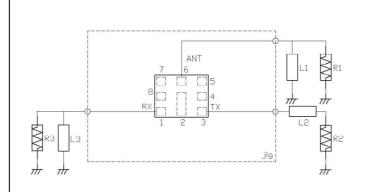
Others: GND

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

#### **Land Pattern**



## Measurement Circuit (Top Thru View)



R1:50 ohm	L1 :3.9nH(Ideal inductor)
	:4.7nH(LQP03TN4N7)
	<reference></reference>
R2 : 50 ohm	L2 :2nH(Ideal inductor)
R3 : 50 ohm	L3 :8nH(Ideal inductor)



## Electrical Characteristic < TX → ANT. >

$TX \rightarrow ANT.$				(-20	aracteris to +85 de	stics eg.C)	Unit	Note	
			min.	typ.*	max.				
Center Frequency						1747.5		MHz	
Insertion Loss	1710.	to	1785.	MHz		2.0	2.5	dB	
	1710.	to	1785.	MHz		2.0	2.4	dB	+23 to +27deg.C
		to	1782.5	MHz		1.8	2.4	dB <sub>INT</sub>	Any 4.5MHz
	1712.5	to	1782.5	MHz		1.8	2.3	dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz
Ripple Deviation	1710.	to	1785.	MHz		0.4	1.1	dB	Over any 5MHz in-band
VSWR	1710.	to	1785.	MHz		1.7	2.2		ANT.
Alexander Attance tion	1710.	to	1785.	MHz	20	1.6	2.1	4D	TX
Absolute Attenuation	10. 703.	to	1565.42 748.	MHz	28 30	34 40		dB dB	DOO To CA
	716.	to	756.	MHz MHz	35	40		dB	B28 Tx CA B28 Rx Band
	814.	to to	849.	MHz	33	38		dB	B26 Tx CA
	832.	to to	862.	MHz	33	38		dB	B20 Tx CA
	880.	to	915.	MHz	33	37		dB	B8 Tx CA
	925.	to	960.	MHz	32	37		dB	BO IX CA
		to	1250.	MHz	30	34		dB	
	1496.	to	1511.	MHz	33	38		dB	B21 Rx Band
	1559.	to	1563.	MHz	36	42		dB	Compass
	1565.42	t∩	1573.37	MHz	37	43		dB	Wideband GPS, lower side-lobe
		to	1577.47	MHz	38	44		dB	Regular GPS, main-lobe
		to	1585.42		38	44		dB	Wideband GPS, upper side-lobe
		to	1605.89	MHz	42	45		dB	GLONASS
		to	1680.	MHz	5.0	14.0		dB	
	1805.	to	1880.	MHz	42	48		dB	Rx
	1920.	to	1980.	MHz	20	40		dB	
	2110.	to	2170.	MHz	24	38		dB	
	2400.	to	2500.	MHz	28	34		dB	ISM2.4GHz
	2620.	to	2690.	MHz	25	30		dB	
	3420.	to	3570.	MHz	20	24		dB	2fo
	4900.	to	5850.	MHz	16	25		dB	ISM5GHz
	5100.	to	5385.	MHz	18	27		dB	
	5130.	to	5355.	MHz	18	27		dB	3fo
	6840.	to	7140.	MHz	12	22		dB	
	8550.	to	8925.	MHz	6.0	16.0		dB	
		to	10710.	MHz	10	20		dB	
	11970.	to	12495.	MHz	6.0	16.0		dB	
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	I				<u> </u>				* Typical value at 25±2dea C

<sup>\*</sup> Typical value at 25±2deg.C



### Electrical Characteristic < ANT. → RX >

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ANT. → RX						Characteristics (-20 to +85 deg.C)			
								Unit	Note
					min.	typ.*	max.		
Center Frequency	4005		1000			1842.5		MHz	
Insertion Loss	1805.	<u>to</u>	1880.	MHz		2.6	3.5	dB	.00 to .07 to .0
	1805. 1807.5	to	1880.	MHz		2.6 2.2	3.4	dB dB <sub>INT</sub>	+23 to +27deg.C
	1807.5	to	1877.5 1877.5	MHz		2.2	3.3	dB <sub>INT</sub>	Any 4.5MHz +23 to +27deg.C, Any 4.5MHz
Pinnle Doviction	1805.	to	1880.	MHz MHz		0.7	1.7	dB <sub>INT</sub>	Over any 5 MHz in-band
Ripple Deviation VSWR	1805.	to	1880.	MHz		1.7	2.3	uБ	ANT.
I VOVIN	1805.	to to	1880.	MHz		1.6	2.2		IRX
Absolute Attenuation	1.	to	1710.	MHz	30	39	2.2	dB	
		10	95.	MHz	50	109		dB	Rx-Tx
	718.	to	748.	MHz	40	55		dB	B28-B Tx for CA
	814.	to	849.	MHz	40	53		dB	B26 Tx for CA
	832.	to	862.	MHz	40	51		dB	B20 Tx for CA
	880.	to	915.	MHz	40	51		dB	B8 Tx for CA
	1447.	to	1463.	MHz	30	41		dB	B21 Tx for CA
	1615.	to	1690.	MHz	40	47		dB	2Tx - Rx
	1710.	to	1785.	MHz	43	50		dB	Tx
	1785.	to	1790.	MHz	24	49		dB	(Rx+Tx)/2
	1920.	to	6000.	MHz	25	39		dB	
	2400.	to	2500.	MHz	40	48		dB	ISM 2.4GHz
	2500.	to	2570.	MHz	36	43		dB	B7 Tx
	2570.	to	3515.	MHz	40	45		dB	D . T . 10 10
	3515.	to	3760.	MHz	40	50		dB	Rx+Tx and 2x LO
	3760.	to	13025.	MHz	15 31	27 39		dB	ICM FOLI-
	4900. 5205.	to	5950. 5660.	MHz MHz	32	39		dB dB	ISM 5GHz 3×LO, Rx + 2Tx
	7220.	to	7520.	MHz	27	35		dВ	4×LO
	9025.	to to	9400.	MHz	20	33		dB	5×LO
	10830.		11280.	MHz	15	27		dB	5^LO  6×LO
	12635.		12750.	MHz	15	33		dB	7×LO
	6000.		12750.	MHz	15	27		dB	1
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<sup>\*</sup> Typical value at 25±2deg.C



### Electrical Characteristic < TX → RX >

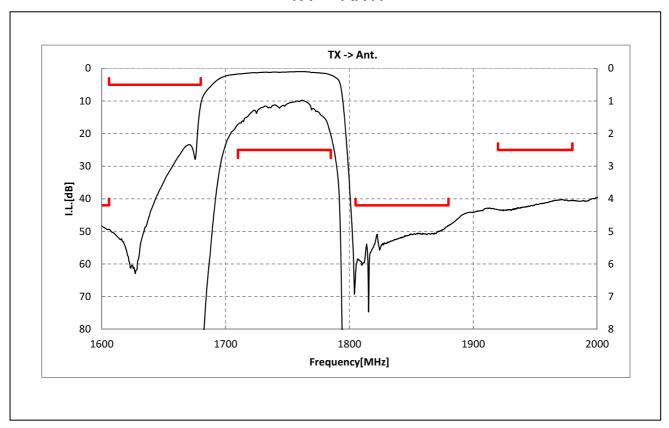
				171	Cho		otics		1
	$TX \rightarrow RX$			Characteristics (-20 to +85 deg.C)				N	
								Unit	Note
	1.0				min.		max.		
Isolation	1710.	to	1785.	MHz	53	55		dB	
	1712.5		1782.5	MHz	53	57		dB <sub>INT</sub>	Any 4.5MHz
	1805.	to	1880.	MHz	50	53		dB	
	1807.5		1877.5	MHz	50	54		dB <sub>INT</sub>	Any 4.5MHz
	1710.	to	1785.	MHz	53	55		dB	+23 to +27deg.C
	1712.5		1782.5	MHz	53	57		dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz +23 to +27deg.C
	1805.	to	1880.	MHz	50	53		dB	+23 to +27deg.C
	1807.5	to	1877.5	MHz	50	54		dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz
			-						
									* Typical value at 25±2deg.C

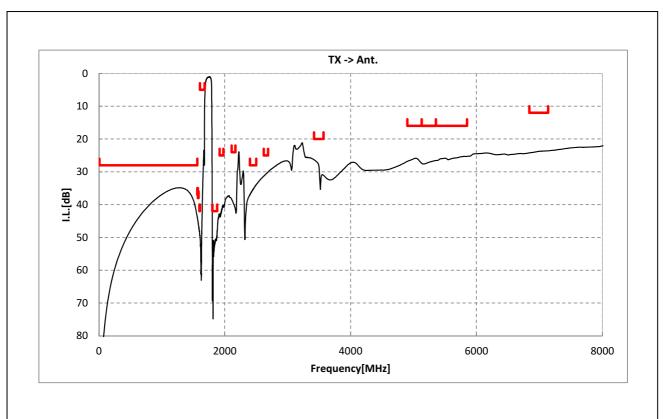
<sup>\*</sup> Typical value at 25±2deg.C



#### **Electrical Characteristic**

 $< TX \rightarrow ANT. >$ 

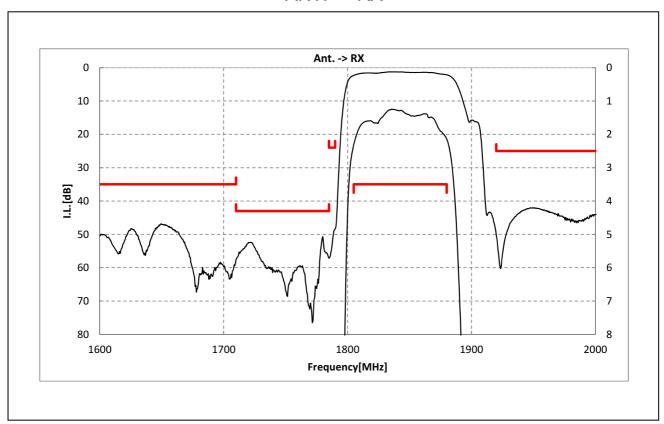


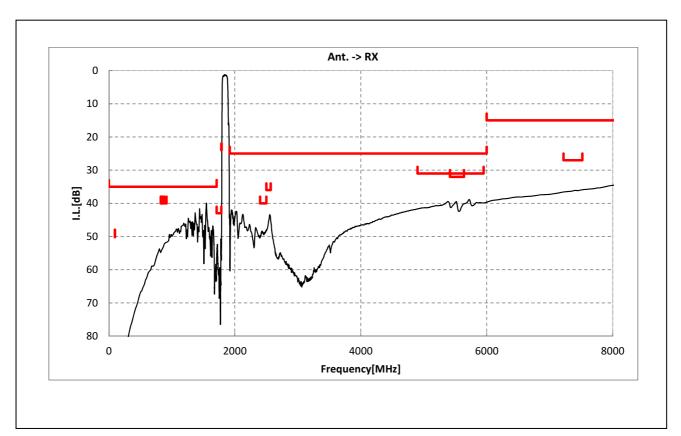




#### **Electrical Characteristic**

 $< ANT. \rightarrow RX >$ 

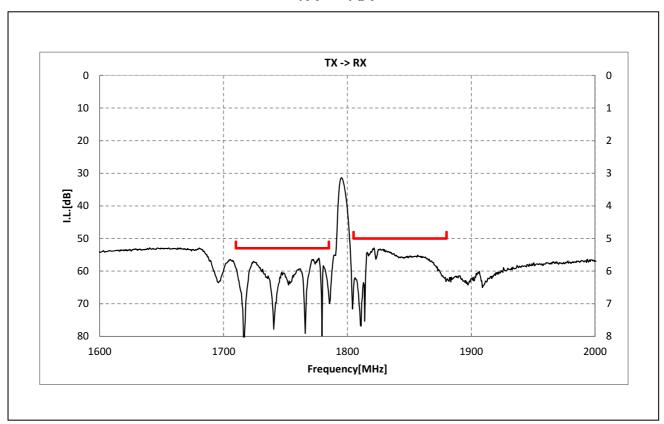


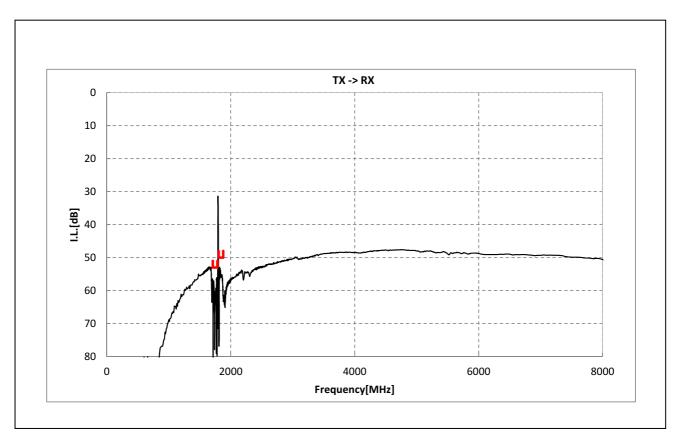




#### **Electrical Characteristic**

$$< TX \rightarrow RX >$$

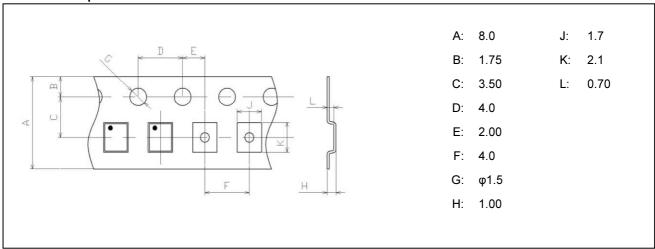




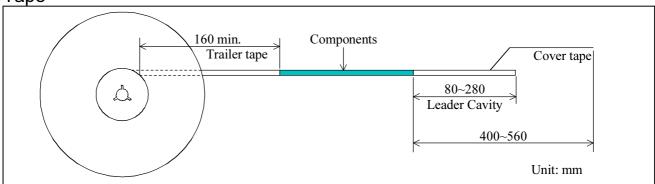


### Dimensions of Tape & Reel unit: mm

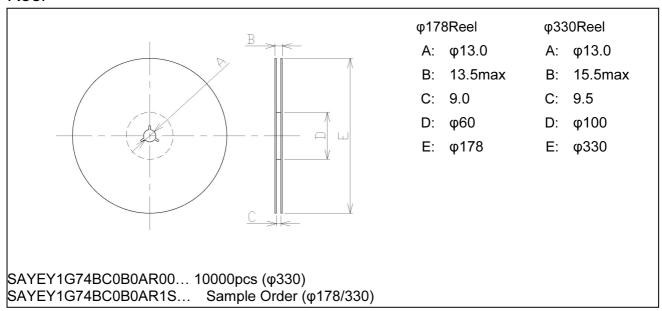
#### **Carrier Tape**



#### 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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