

# **Datasheet of SAW Device**

# SAW Duplexer

for Band3 / Unbalanced / LR /1814

Murata PN: SAYEY1G74BC0B0A

### Feature

- > LTE-A
- ➤ High Power Durability



Note: Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only.

Please also read caution at the end of this document.





#### **General Information**

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

- Input Power : +29.5 dBm 5000 h +50 deg.C +30.0 dBm 3000 h +50 deg.C

: 3V (25+/-2 deg.C)

- D.C. Volatage between the terminals - Minimum Resistance between the terminals : 10M ohm - RoHS compliance : Yes

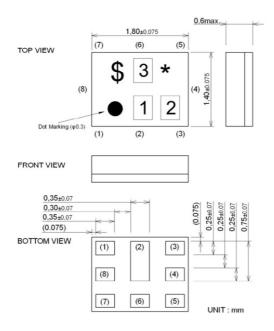
- ESD (ElectroStatic Discharge) sensitive device



### 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)

1:6

2:W

3 : A

#### **Terminal Number**

(6): Ant

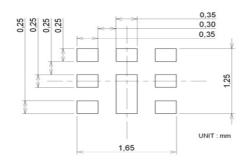
(3):TX

(1): RX

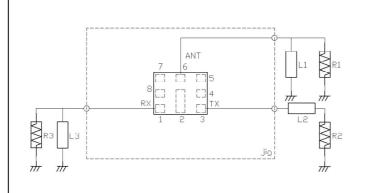
Others: GND

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. >

T>				Characteristics (-20 to +85 deg.C)			Unit	Note		
					min.	typ.*	max.			
Center Frequency						1747.5		MHz		
Insertion Loss		to	1785.	MHz		2.0	2.5	dB		
		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	
		to	1782.5	MHz		1.8	2.3	dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz	
Ripple Deviation		to	1785.	MHz		0.4	1.1	dB	Over any 5MHz in-band	
VSWR	1710.	to	1785.	MHz		1.7	2.2		ANT.	
		to	1785.	MHz		1.6	2.1		TX	
Absolute Attenuation		to	1565.42	MHz	28	34		dB		
		to	748.	MHz	30	40		dB	B28 Tx CA	
		to	756.	MHz	35	40		dB	B28 Rx Band	
	814.	to	849.	MHz	33	38		dB	B26 Tx CA	
		to	862.	MHz	33	38		dB	B26 Tx CA	
		to	849.	MHz	33	38		dB	B20 Tx CA	
		to	915.	MHz	33	37		dB	B8 Tx CA	
		to	960.	MHz	32	37		dB		
		to	1250.	MHz	30	34		dB		
		to	1511.	MHz	33	38		dB	B21 Rx Band	
	1559.	to	1563.	MHz	36	42		dB	Compass	
	1565.42	to	1573.37	MHz	37	43		dB	Wideband GPS, lower side-lobe	
	1573.37	to	1577.47	MHz	38	44		dB	Regular GPS, main-lobe	
	1577.47	to	1585.42	MHz	38	44		dB	Wideband GPS, upper side-lobe	
	1597.55	to	1605.89	MHz	42	45		dB	GLONASS	
		to	1680.	MHz	5.0	14.0		dB		
	1805.	to	1880.	MHz	42	48		dB	Rx	
		to	1980.	MHz	20	40		dB		
	2110.	to	2170.	MHz	24	38		dB		
	2400.	to	2500.	MHz	28	34		dB	ISM2.4GHz	
		to	2690.	MHz	25	30		dB		
		to	3570.	MHz	20	24		dB	2fo	
		to	5850.	MHz	16	25		dB	ISM5GHz	
		to	5385.	MHz	18	27		dB		
		to	5355.	MHz	18	27		dB	3fo	
	6840.	to	7140.	MHz	12	22		dB		
		to	8925.	MHz	6.0	16.0		dB		
	10260.	to	10710.	MHz	10	20		dB		
	11970.	to	12495.	MHz	6.0	16.0		dB		
				·						

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



### Electrical Characteristic < ANT.→RX >

<u>Licetifical Offa</u>	- actori	<u> </u>		<u> </u>		<u> </u>					
				Cha	racteri	stics					
l Al	$NT. \rightarrow RX$				(-20	to +85 d	eg.C)	Unit	Note		
					min.	typ.* max.					
Contar Fraguency	1				1111111.	1842.5		MHz	1		
Center Frequency Insertion Loss	1905	4 -	1880.	N/I LI-		2.6	3.5	dB			
Insertion Loss	1805.	<u>to</u>		MHz					1.001 .071 0		
	1805.	to	1880.	MHz		2.6	3.4	dB	+23 to +27deg.C		
	1807.5	to	1877.5	MHz		2.2	3.3	dB <sub>INT</sub>	Any 4.5MHz		
	1807.5	to	1877.5	MHz		2.2	3.2	dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz		
Ripple Deviation	1805.	to	1880.	MHz		0.7	1.7	dB	Over any 5 MHz in-band		
VSWR	1805.	to	1880.	MHz		1.7	2.3		ANT.		
	1805.	to	1880.	MHz		1.6	2.2		RX		
Absolute Attenuation	1.	to	1710.	MHz	30	39		dB			
			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.		1690.	MHz	40	47		dB	2Tx - Rx		
	1710.	to	1785.		43	50		dВ	ļ.		
		to		MHz					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			
	3515.	to	3760.	MHz	40	50		dB	Rx+Tx and 2x LO		
	3760.	to	13025.	MHz	15	27		dB			
	4900.	to	5950.	MHz	31	39		dB	ISM 5GHz		
	5205.	to	5660.	MHz	32	39		dB	3×LO, Rx + 2Tx		
	7220.	to	7520.	MHz	27	35		dB	4×LO		
	9025.	to	9400.	MHz	20	33		dB	5×LO		
	10830.		11280.	MHz	15	27		dB	6×LO		
	12635.		12750.	MHz	15	33		dB	7×LO		
	6000.		12750.		15	27		dB	/^LO		
	6000.	to	12750.	MHz	15	21		иь			
									1		
	-										
						-					
						<u></u>					
L	1				i	L	l .	1	* T 0 1 25 1 2 do C		

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



### Electrical Characteristic < TX→RX. >

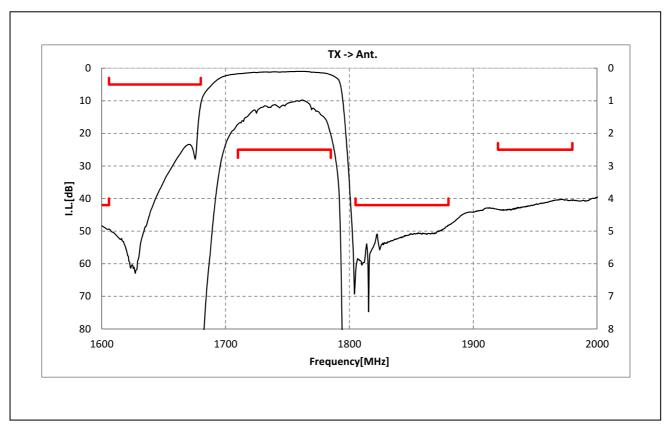
						racteri	stics				
	$TX \rightarrow RX$				(-20	to +85 d	eg.C)	Unit	Note		
	101				min.	typ.*	max.	J			
Isolation	1710.	to	1785.	MHz	53	55		dB			
	1712.5	to	1782.5	MHz	53	57		dB <sub>INT</sub>	Any 4.5MHz		
	1805.	to	1880.	MHz	50	53		dB			
	1807.5	to	1877.5	MHz	50	54		dB <sub>INT</sub>	Any 4.5MHz		
		to	1785.	MHz	53	55		dB	+23 to +27deg.C		
		to	1782.5	MHz	53	57		dB <sub>INT</sub>	+23 to +27deg.C, Any 4.5MHz		
	1805.	to	1880.	MHz	50	53		dB	+23 to +27deg.C +23 to +27deg.C, Any 4.5MHz		
	1807.5	to	1877.5	MHz	50	54		dB <sub>INT</sub>	+23 to +2/deg.C, Any 4.5MHz		
						İ					
						ļ					
						<u> </u>			* Typical value at 25+2deg (		

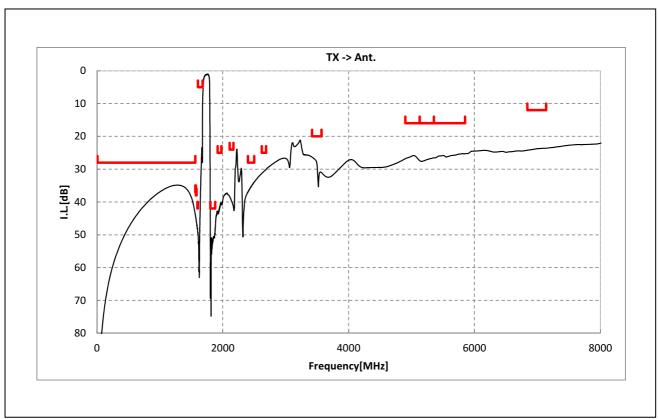
<sup>\*</sup> Typical value at 25±2deg.C



#### **Electrical Characteristic**

< TX→ANT. >

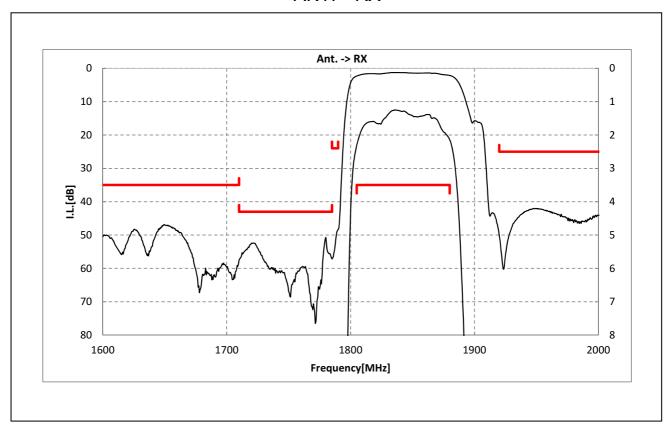


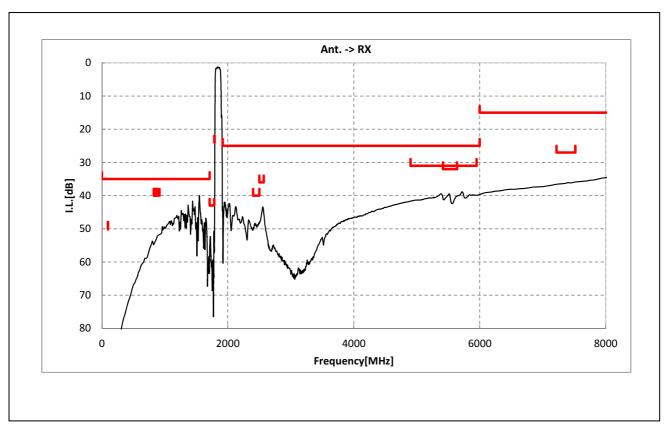




#### **Electrical Characteristic**

#### < ANT.→RX >

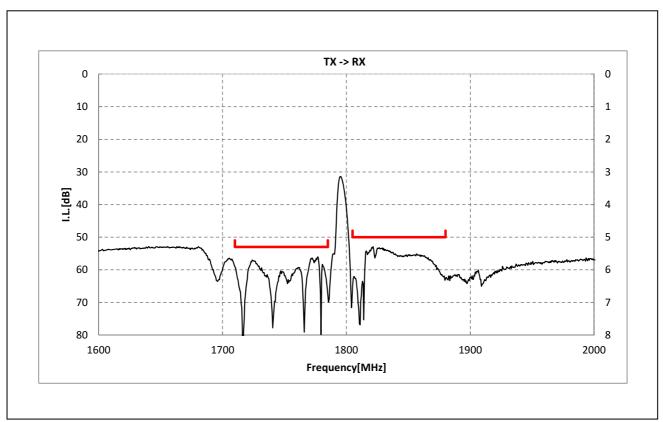


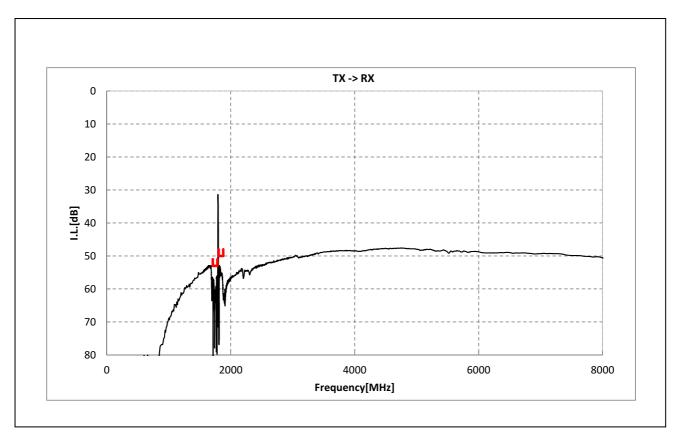




#### **Electrical Characteristic**

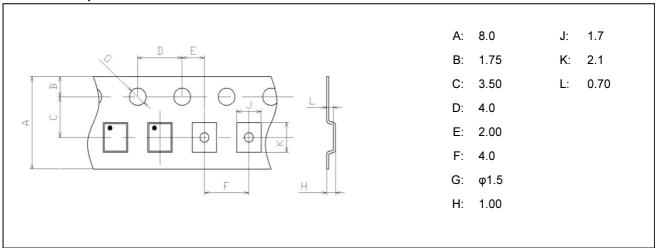
< TX→RX. >



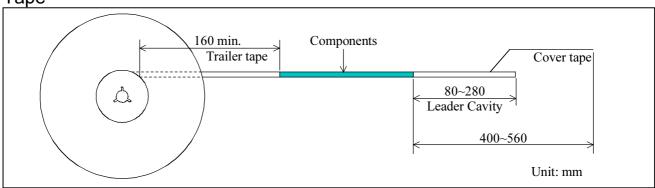


### Dimensions of Tape & Reel unit: mm

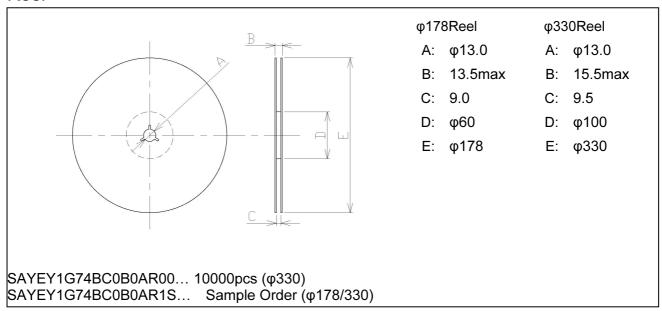
#### **Carrier Tape**



#### Tape



#### Reel





#### Marking Code

#### Table A: Month Code

2013	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2017 2021	Α	В	O	D	Е	F	G	Н	٦	К	١	М
2014	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2018 2022	N	Р	Q	R	S	Т	U	V	W	Х	Υ	Z
2015	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2019 2023	а	ь	10	đ	е	f	gg	h	j	k	Q	m
2016	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2020 2024	n	P	G	r	4	t	э	Ú	3	æ	y	3

#### Table B: Date Code

date code	21st W	22nd X	23rd	24th	25th a	26th b	27th	28th	29th e	30th	31st <b>g</b>
code	L	М	N	Р	Q	R	S	T	U	V	
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	Α	В	С	D	Е	F	G	Н	J	K	
date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	

#### 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 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 products 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 in any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property. You acknowledge and agree that, if you use our products in such applications, we will not be responsible for any failure to meet such requirements.

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 SUCH APPLICATIONS.



#### Important Notice (2/2)

- Aircraft equipment.
- 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.

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.

If you can't agree the above contents, you should inquire our sales.

### 单击下面可查看定价,库存,交付和生命周期等信息

>>Murata(村田)