

Datasheet of SAW Device

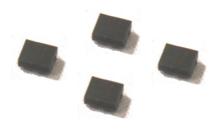
SAW Duplexer

for Band30 / Unbalanced / LR /1814

Murata PN: SAYEY2G31BA0F0A

Feature

- > Small Size
- High Isolation
- > 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.



Revision Number	Date	Description
SAYEY2G31BA0F0A_rev. A	May-09-2013	■ Initial Release
SAYEY2G31BA0F0A_rev. B	Aug-23-2013	■ Updated a Measurement Circuit
SAYEY2G31BA0F0A_rev. C	Sep-11-2013	■ Updated Typical value
SAYEY2G31BA0F0A_rev. D	Mar-19-2014	■ Updated for MP
SAYEY2G31BA0F0A_rev. E	May-27-2014	■ Updated a Unit of Ideal capacitor
SAYEY2G31BA0F0A_rev. F	Sep-03-2015	■ Updated Feature
SAYEY2G31BA0F0A_rev. G	Sep-15-2016	■ Updated General Information
SAYEY2G31BA0F0A_rev. H	Sep-13-2017	■ Updated General Information

- 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)

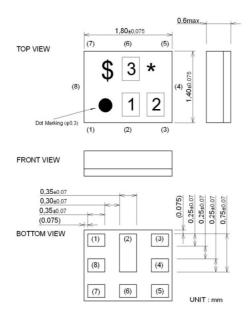
Minimum Resistance between the terminals : 10M ohm
 RoHS compliance : Yes
 ESD (ElectroStatic Discharge) sensitive device



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)

1:5

2: G

3 : A

Terminal Number

(6): Ant

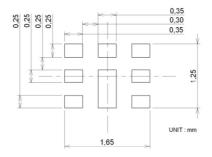
(3):TX

(1): RX

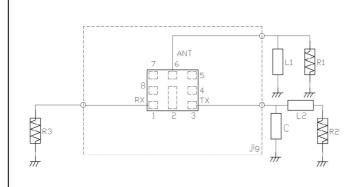
Others: GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :20nH(Ideal inductor)
	:24nH(LQP03TN24N)
	<reference></reference>
R2 : 50 ohm	L2 :2.8nH(Ideal inductor)
	C :0.5pF(Ideal capacitor)
R3 : 50 ohm	



Electrical Characteristic < TX→ANT. >

TX			Characteristics (-20 to +85 deg.C)			Unit	Note		
					min.	typ.*	max.		
Center Frequency						2310		MHz	
Insertion Loss	2305.25	to	2314.75			1.8	2.8	dB	
	2305.25		2314.75	MHz		1.8	2.7	dB	+23 to +27deg.C
		to	2312.5	MHz		1.8	2.7	dBINT	Any 4.5MHz
	2307.5	to	2312.5	MHz		1.8	2.5	dBINT	+23 to +27deg.C ,Any 4.5MHz
Ripple Deviation	2305.25	to	2314.75	MHz		0.2	1.2	dB	Any 5MHz
VSWR	2305.25	to	2314.75	MHz		1.3	2.4		TX
A	2305.25		2314.75	MHz	00	1.4	2.4	ID.	ANT.
Absolute Attenuation		to	1565.42	MHz	38	42		dB	FM, 921-960MHz
		to	1250. 1563.	MHz	38	43		dB	GPS L2
	1559. 1565.42	to	1573.37	MHz MHz	38 38	44 44		dB dB	Compass Wideband GPS lower side
			1577.47	MHz	38	44		dВ	Regular GPS main lobe
	1577.47	to	1585.42	MHz	38	44		dB	Wideband GPS upper side
	1597.55	to_	1605.89	MHz	38	44		dB	GLONASS
	1605.88	to	1680.	MHz	38	44		dB	GLONASS
		to	1880.	MHz	38	46		dB	B3
		to	1920.	MHz	40	47		dB	B33
		to	2025.	MHz	40	49		dB	B34
		to	2170.	MHz	40	52		dB	B1
		to	2360.	MHz	50	59		dB	RX band
		to	2485.	MHz	40	50		dB	
		to	2620.	MHz	40	51		dB	B38
		to	2690.	MHz	40	51		dB	B7
		to	4630.	MHz	40	66		dB	2f
	4900.	to	5950.	MHz	40	66		dB	ISM 5G
	6915.	to	6945.	MHz	35	61		dB	3f
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT.→RX >

Characteristics Characteristics Characteristics											
				Cha	racteri	stics					
Al	$NT. \rightarrow RX$				(-20 to +85 deg.C) min. typ.* max.		Unit	Note			
0 1 5				min.		max.	N 41 1				
Center Frequency	0050.05 +-	0050.75	NAL I		2355	0.0	MHz dB				
Insertion Loss	2350.25 to 2350.25 to	2359.75 2359.75	MHz MHz		2.3	2.9	dВ	+23 to +27deg.C			
	2352.5 to	2357.5	MHz		2.3	3.0	dBINT	Any 4.5MHz			
	2352.5 to	2357.5	MHz		2.3	2.9	dBINT	+23 to +27deg.C, Any 4.5MHz			
Ripple Deviation	2350.25 to	2359.75	MHz		0.2	0.8	dB	Any 5MHz			
VSWR	2350.25 to	2359.75	MHz		1.7	2.0		RX			
	2350.25 to	2359.75	MHz		1.7	2.0		ANT.			
Absolute Attenuation	1. to	2305.	MHz	36	41		dB				
	40. to	50.	MHz	50	86		dB	RX-TX			
	2305. to	2315.	MHz	50	57		dB	TX			
	2327. to	2337.	MHz	2.0	4.9		dB dB	(RX+TX)/2			
	2336.2 to 2400. to	2341.3 6000.	MHz MHz	1.8 40	3.1 46		dВ	Averaged over 5MHz OoB rejection			
	2400. to	2500.	MHz	40	46		dВ	ISM2.4			
	4900. to	5950.	MHz	40	55		dB	ISM 5G			
	6960. to	6990.	MHz	40	49	 	dB	RX+2TX			
	7050. to	7080.	MHz	40	48		dB	3f			
	9400. to		MHz	20	44		dB	4f			
	11750. to	11800.	MHz	20	44		dB	5f			
		12750.	MHz	15	36		dB				
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < TX→RX. >

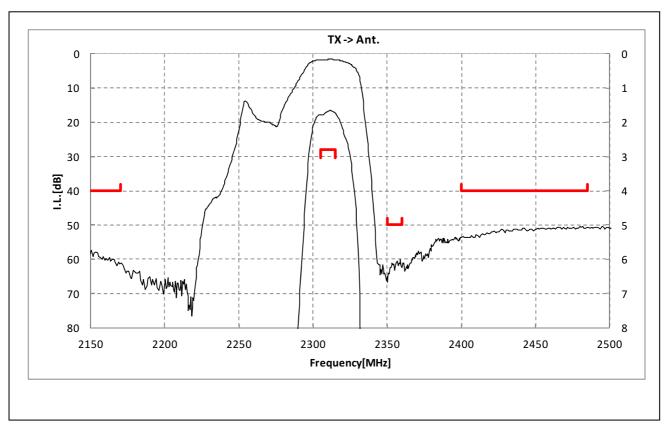
					ctice				
	$X \rightarrow RX$				Characteristics (-20 to +85 deg.C)			Unit	Note
	/ / N/					typ.*		Offic	INOLE
Isolation					1111111.	1,96.	max.		
iooidiioii	2305.	to	2315.	MHz	55	57		dB	
	2350.	to	2360.	MHz	55	59		dB	
	1574.	to	1577.	MHz	40	63		dB	
	4610.	to	4620.	MHz	35	52		dB	
	6915.	to	6945.	MHz	30	50		dB	
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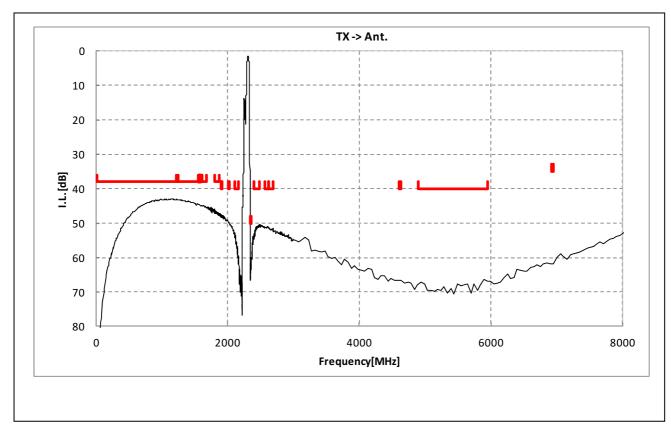
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< TX→ANT. >

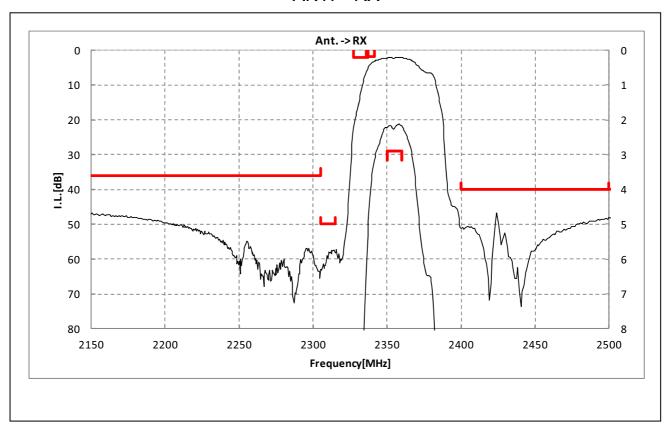


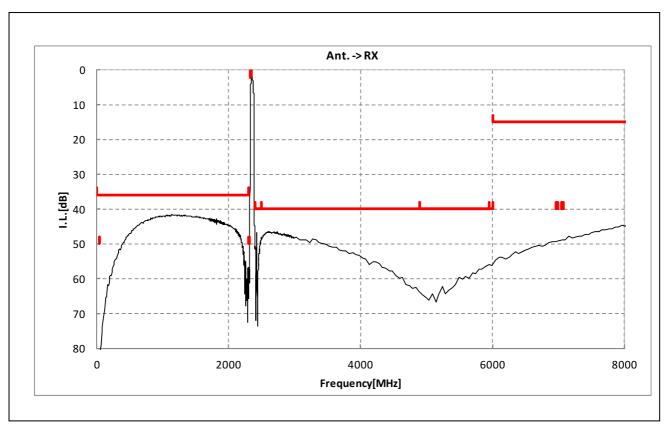




Electrical Characteristic

< ANT.→RX >

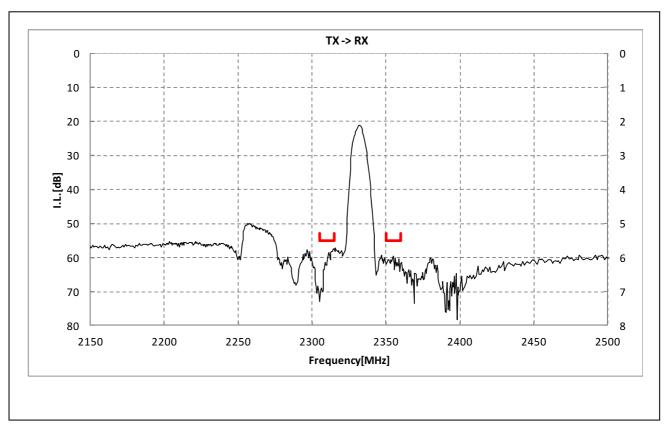


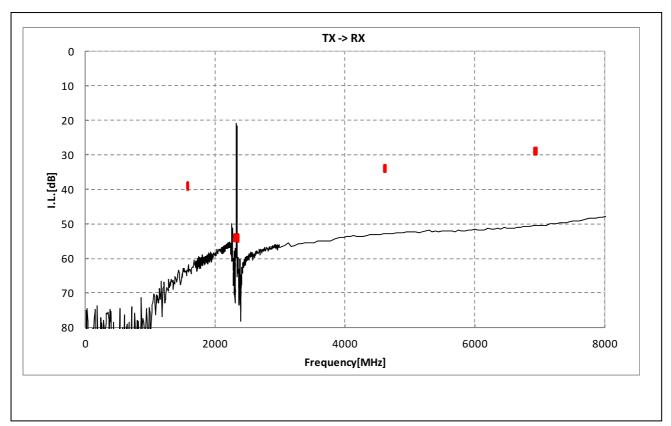




Electrical Characteristic

< TX→RX. >

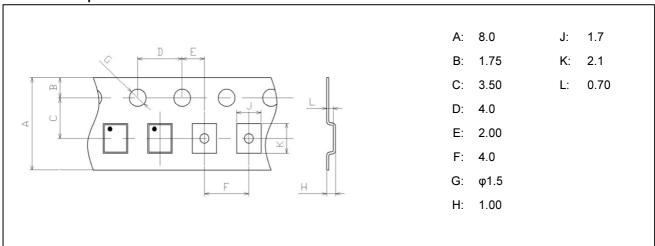




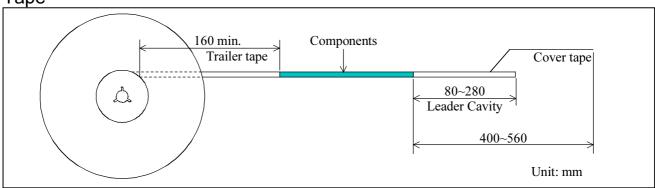


Dimensions of Tape & Reel unit: mm

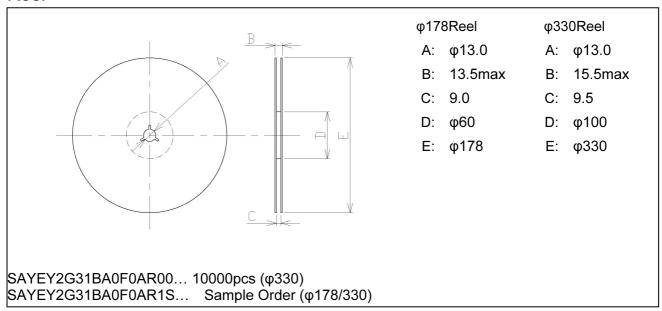
Carrier Tape



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	С	D	Е	F	G	Ι	٦	K	١	М
2014	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2018 2022	Ν	Р	Ø	R	S	Т	U	٧	W	Х	Υ	Z
2015	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2019 2023	а	ь	10	d	е	f	9,0	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	u	٦	3	×	y	3

Table B: Date Code

date code	21st W	22nd X	23rd	24th	25th a	26th b	27th	28th	29th e	30th	31st g
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.

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