

Datasheet of SAW Device

SAW Duplexer

for Band12 / Unbalanced / LR /1814

Murata PN: SAYEY707MBA0F0A

Feature

- > LTE-A
- ➤ High Power Durability
- ➤ Good 3f Linearity



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
SAYEY707MBA0F0A_rev. A	Mar-05-2014	■ Initial Release
SAYEY707MBA0F0A_rev. B	Mar-31-2014	■ Updated by new version
SAYEY707MBA0F0A_rev. C	Jul-04-2014	■ Updated for MP
SAYEY707MBA0F0A_rev. D	Sep-03-2015	■ Updated for Feature
SAYEY707MBA0F0A_rev. E	Sep-08-2015	■ Updated for Feature
SAYEY707MBA0F0A_rev. F	Jun-24-2016	■ Updated for SPEC
SAYEY707MBA0F0A_rev. G	Sep-06-2016	■ Updated General Information
SAYEY707MBA0F0A_rev. H	Aug-31-2017	■ Updated General Information
SAYEY707MBA0F0A_rev. I	Nov-13-2017	■ Updated SPEC

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

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

- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)

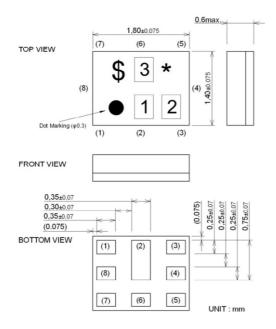
Minimum Resistance between the terminals : 10M ohm
 RoHS compliance : Yes
 ESD (ElectroStatic Discharge) sensitive device



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:N

3 : A

Terminal Number

(6): Ant

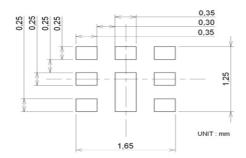
(3):TX

(1): RX

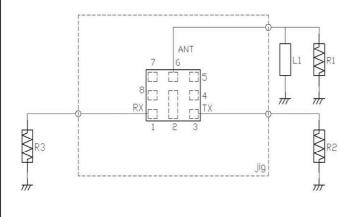
Others: GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :12nH(Ideal inductor)
	:12nH(LQP03TN12N)
	<reference></reference>
R2 : 50 ohm	
R3 : 50 ohm	



Electrical Characteristic < TX→ANT. >

T	K → ANT.				(-20 1	racteri to +85 d		Unit	Note
					min.	typ.*	max.		
Center Frequency						707.5		MHz	
Insertion Loss	699.25 701.5		715.75			1.9	2.4	dB	A several CAMILIS
Ripple Deviation	699.25	to_	713.5 715.75	MHz MHz		1.5 0.8	2.2	dB _{INT}	Any 4.5MHz
VSWR	699.25	to_	715.75	MHz		1.6	2.0	ub_	ANT.
VSVIC	699.25	to	715.75	MHz		1.7	2.0		TX
Absolute Attenuation		to	685.	MHz	30	40		dB	
		to	729.	MHz	2.0	10.0		dB	Ch56
	729.25	to	745.75	MHz	45	57		dB	RX
		to	768.	MHz	30	42		dB	
		to	805.	MHz	25	41		dB	
		to	849.	MHz	30	41		dB	B5 TX
		to	894.	MHz	36	41		dB	0.5
		to_	1432. 1563.	MHz	30 35	41 38		dB dB	2f
	1565.42	to_	1573.37	MHz MHz	35	38		dB	COMPASS Lower GPS
		to to	1577.47	MHz	35	38		dВ	Regular GPS
		to	1585.42		35	38		dB	Upper GPS
		to	1605.89	MHz	35	38		dB	GLONASS
		to	1755.	MHz	30	36		dB	B4 TX
		to	1880.	MHz	30	35		dB	DCS RX
	1930.	to	1990.	MHz	29	34		dB	
		to	2155.	MHz	29	34		dB	3f, B1 RX
		to	2170.	MHz	29	34		dB	B1 RX
		to	2484.	MHz	25	35		dB	ISM2.4
		to	2864.	MHz	12	21		dB	4f
	4900.	to	5950.	MHz	5.0	10.0		dB	ISM 5G
						 			

^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT.→RX >

Licothodi Offdidotoffstio 171111. 1777												
				Cha	racteri	stics						
l AI	$NT. \rightarrow RX$			(-20	to +85 d	eg.C)	Unit	Note				
· "	7100			min.	typ.*	max.	Orne	11010				
Contor Fraguency	1			1111111.	737.5	IIIax.	MHz					
Center Frequency	729.25 to	745.75	MILI-		1.8	2.4	dB					
Insertion Loss					1.7	2.4	dB _{INT}	A 4 5 M I I				
Diamle Deviation			MHz					Any 4.5MHz				
Ripple Deviation	729.25 to	745.75			0.5	2.0	dB	ANIT				
VSWR	729.25 to	745.75			1.7	2.0		ANT.				
	729.25 to		MHz	40	1.7	2.0		RX				
Absolute Attenuation	10. to		MHz	40	55		dB	Out-of-band rejection				
	30. to	30.	MHz	50	106		dB	RX-TX				
	699.25 to			45	56		dB	TX				
	716. to		MHz	0.5	16.0		dB	Average attenuation				
	776. to		MHz	24	29		dB	Upper 700 MHz Tx jammer				
	793. to		MHz	35	55		dB	PS mobile transmitters				
	824. to		MHz	40	56		dB	BC0 TX jammer				
	1710. to) 1755.	MHz	40	50		dB	B4 TX				
	1850. to	1920.	MHz	40	49		dB	B2 TX				
	2187. to	2238.	MHz	40	47		dB	3f				
	2400. to		MHz	40	45		dB	ISM2.4				
	4900. to		MHz	36	41		dB	ISM 5G				
	6561. to		MHz	30	49		dB	9f				
	7290. to		MHz	25	37		dB	10f				
	8019. to		MHz	15	28		dB	11f				
	8748. to		MHz	10	25		dB	12f				
	9477. to		MHz	5.0	22.0		dB	13f				
			MHz	5.0	15.0		dB	114f				
	1000		MHz	5.0	11.0		dB	15f				
	11221											
	11664. to		MHz	5.0	12.0		dB	16f				
	12393. to	12682.	MHz	5.0	15.0		dB	17f				
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < TX→RX. >

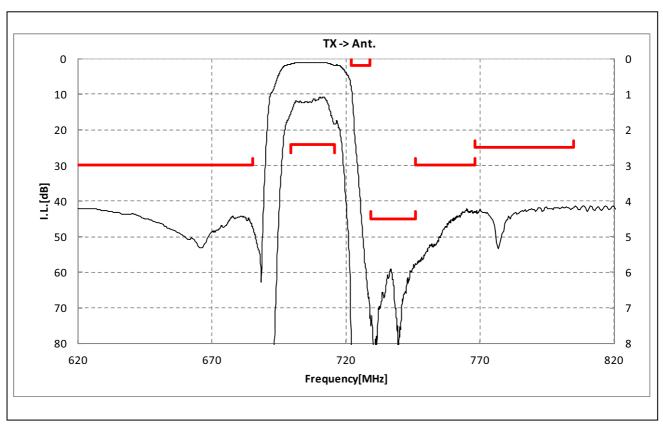
	TX -	→ RX				Cha (-201	racteri to +85 d	stics eg.C)	Unit	Note	
	.,,					min. typ.* max.			11010		
olation		699.25	to	715.75	MHz	57	60		dB		
		701.5	to	713.5	MHz	58	62		dB _{INT}	Any 4.5MHz	
		729.25	to	745.75	MHz	55	61		dB		
		731.5	to	743.5	MHz	56	65		dB _{INT}	Any 4.5MHz	
		1398.	to	1432.	MHz	30	62		dB	2f	
		2097.	to	2198.	MHz	30	55		dB	3f	
	- 2	2792.	to	2864.	MHz	30	52		dB	4f	
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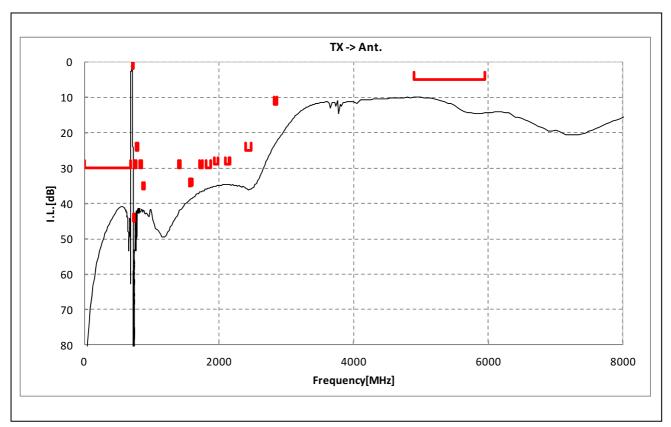
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< TX→ANT. >

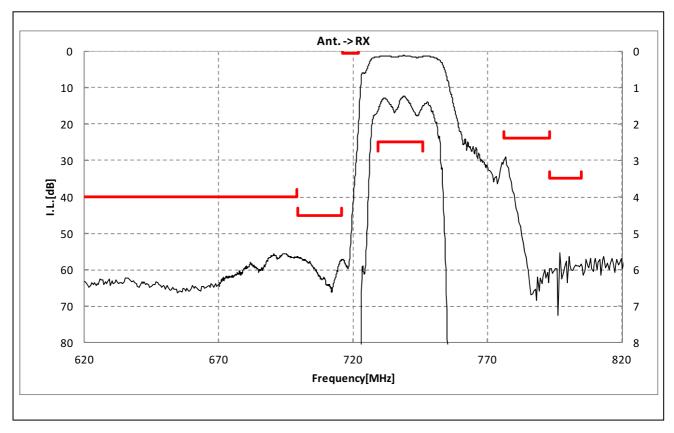


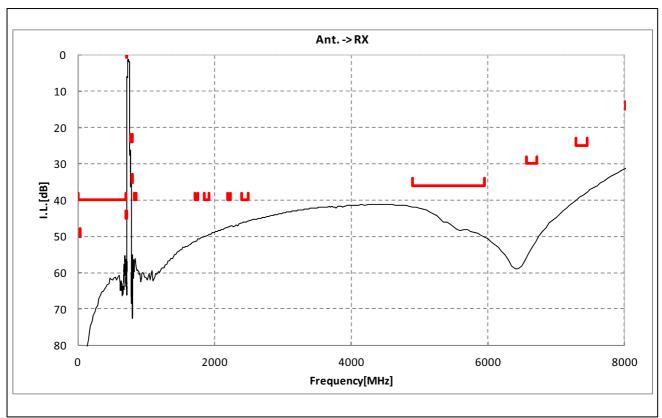




Electrical Characteristic

< ANT.→RX >

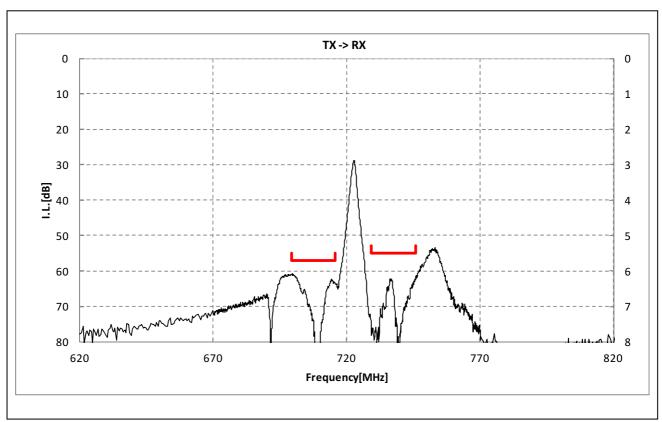


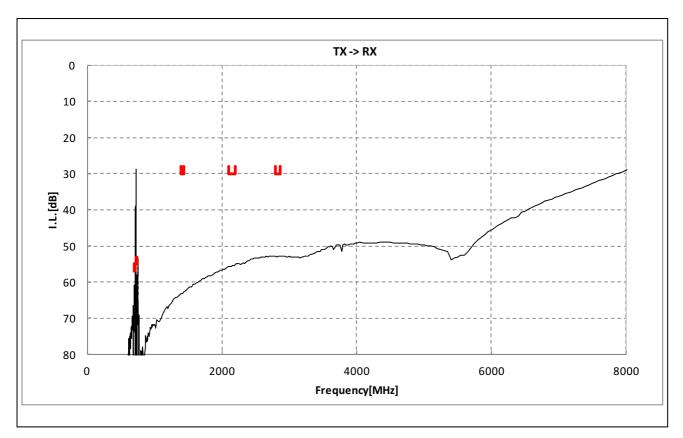




Electrical Characteristic

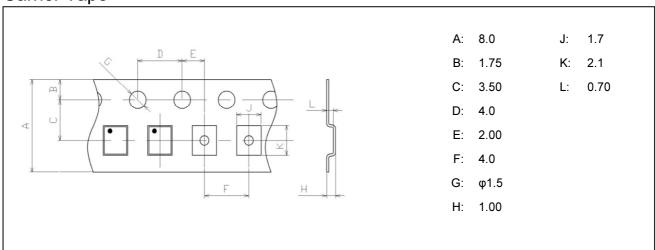
< TX→RX. >



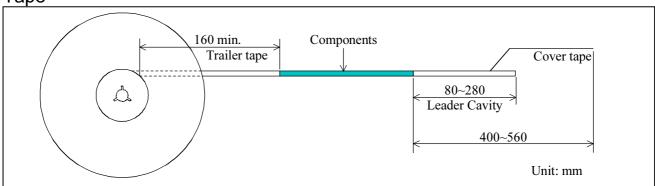


Dimensions of Tape & Reel unit: mm

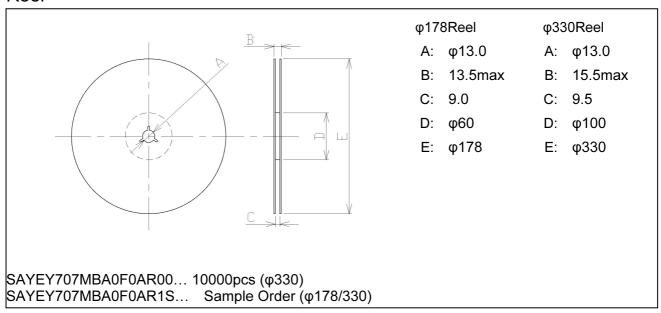
Carrier Tape



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	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 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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>>Murata(村田)