

Datasheet of SAW Device

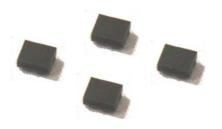
SAW Dual Filter

for GPS_GLONASS_GALILEO / 1in2out Unbalanced / LH /1511

Murata PN: SAWFD1G20AA0F0A

Feature

- Support GPS(L5)+GLONASS(G3)+BAIDOU(B2)+ GPS(L2)
- Support BAIDOU(B1)+GPS(L1)+GLONASS(G1)



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 : +15 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

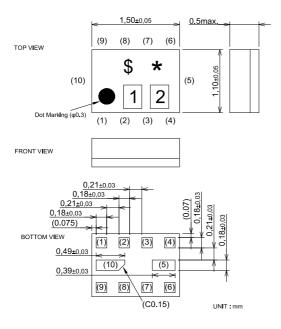


unit: mm

SAWFD1G20AA0F0A (GPS_GLONASS_GALILEO / 1in2out Unbalanced / LH / 1511)

Package Dimensions & Recommended Land Pattern

Dimensions



Marking: Laser Printing

*: Month code(Refer to the table A)

\$: Date code(Refer to the table B)

2 : y

Terminal Number

(1): Unbalanced port-Lch/Hch

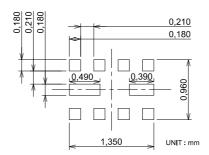
(9): Unbalanced port-Lch

(6): Unbalanced port-Hch

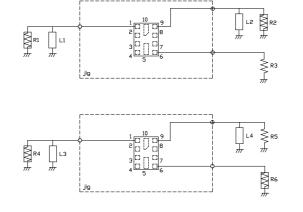
Others: GND

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

Land Pattern



Measurement Circuit (Top Thru View)



(Lch)

R1:50 ohm	L1 :4.5nH(Ideal inductor)
R2 : 50 ohm	L2 :9nH(Ideal inductor)
R3 : 50 ohm	
R4:50 ohm	L3 :4.5nH(Ideal inductor)
R5 : 50 ohm	L4 :9nH(Ideal inductor)
R6:50 ohm	

(Hch)



Electrical Characteristic < Low Freq. Filter >

Electrical Cha	OVV I								
			Cha	racteri	stics				
Low		(-20 to +85 deg.C)			Unit	Note			
			min.	typ.*	max.	0	1 1010		
Contar Fraguesia	T				/1207.1		MHz		
Center Frequency	110000	1100.00	N 41 I	1176.5				ODO LE David	
Insertion Loss	1166.22 to	1186.68			1.3	1.8	dB	GPS L5 Band	
	1205.09 to	1209.19			1.3	1.8	dB	GLONASS G3 Band	
	1226.58 to	1228.62	MHz		1.3	2.0	dB	GPS L2 Band	
Ripple Deviation	1166.22 to	1228.62	MHz		0.5	1.5	dB		
GDT Ripple Deviation	1166.22 to	1228.62			9	20	ns		
VSWR	1166.22 to	1228.62	MHz		1.4	2.0		ANT.	
	1166.22 to	1228.62	MHz		1.4	2.0		L CH	
Absolute Attenuation	638. to	698.	MHz	33	41		dB		
	698. to	748.	MHz	33	40		dB		
	777. to	798.	MHz	30	38		dB		
	807. to	915.	MHz	25	33		dB		
	925. to	960.	MHz	23	31		dB	B8Rx	
	1427. to	1463.	MHz	25	33		dB	B11Tx, B21Tx	
		1660.5	MHz	25	30		dB	B24Tx	
		1785.	MHz	28	36		dB	DLT IA	
		2025.		35	45		dВ		
			MHz		45			ID 40	
	2300. to	2400.	MHz	35			dB	B40	
	2400. to	2483.	MHz	36	43		dB	ISM2.4G	
1	2496. to	2690.	MHz	35	41		dB	B41	
	3400. to	3800.	MHz	29	35		dB	B42, B43	
	4400. to	4900.	MHz	26	33		dB		
	5150. to	5925.	MHz	26	33		dB	ISM5G	
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < High Freq. Filter >

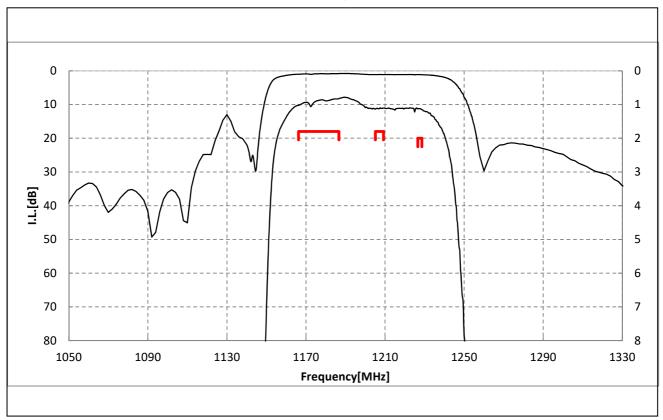
Electrical Chai	racteris	SUC	C < f	⊣ıgn	rre	q. Fi	iter :	>	
				Cha	racteri	stics			
High			(-20 to +85 deg.C)			Unit	Note		
"g"	•			min.	typ.*	max.	Offic	14010	
Contar Fraguenov	T					/1561.1/		MHz	
Center Frequency	1574.00		1570 15	N 41 I	15/5.4				
Insertion Loss	1574.39	<u>to</u>	1576.45 1576.45	MHz		1.3	2.0	dB dB	. 00 to . 07do . 0
	1574.39	<u>to</u>		MHz		1.3	1.9 2.3		+23 to +27deg.C
	1559.05 1559.05	<u>to</u>	1563.15 1563.15	MHz		1.6 1.6	2.3	dB dB	. 00 to . 07do . 0
	1597.55	<u>to</u>	1605.89	MHz		1.7	2.2	dВ	+23 to +27deg.C
	1597.55	<u> 10</u>	1605.89	MHz MHz		1.7	2.3	dВ	+23 to +27deg.C
GDT Ripple Deviation	1597.55	<u>10</u>	1605.89	MHz		3	20	ns	+23 to +27deg.C
Ripple Deviation	1574.39	10	1576.45	MHz		0.1	1.0	dB	
Inipple Deviation	1559.05	<u>10</u>	1563.15	MHz		0.1	1.0	dB	
	1597.55	<u>to</u>	1605.89	MHz		0.1	1.0	dB	
VSWR	1574.39	to to	1576.45	MHz		1.3	2.0	ub	ANT.
VOWIT	1559.05	to to	1563.15	MHz		1.7	2.2		ANT.
	1597.55	to to	1605.89	MHz		1.7	2.2		ANT.
	1574.39	to	1576.45	MHz		1.3	2.0		H CH
	1559.05	to	1563.15	MHz		1.2	2.0		H CH
		to	1605.89	MHz		1.7	2.2		H CH
Absolute Attenuation			698.	MHz	39	45	۲.۲	dB	11_0/1
, assolute / titeriuation		<u>to</u> to	748.	MHz	38	43		dB	
		to	798.	MHz	35	42		dB	
		to	915.	MHz	34	39		dB	
		to	925.	MHz	33	38		dB	
		to	960.	MHz	33	38		dB	
		to	1463.	MHz	32	43		dB	
		to	1785.	MHz	40	43		dB	DCS-Tx
		to	1797.	MHz	40	44		dB	Jee IX
		to	1910.	MHz	38	42		dB	PCS-Tx
		to	1980.	MHz	37	40		dB	. 66 1.
		to	2025.	MHz	37	42		dB	В34Тх
		to	2315.	MHz	41	46		dB	B30 Tx
		to	2483.	MHz	42	47		dB	2.4G ISM
		to	2690.	MHz	40	48		dB	B41
		to	5925.	MHz	23	35		dB	5G ISM

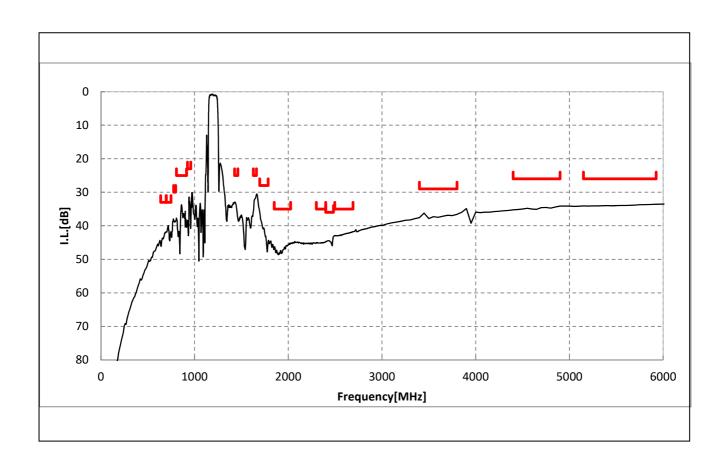
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< Low Freq. Filter >

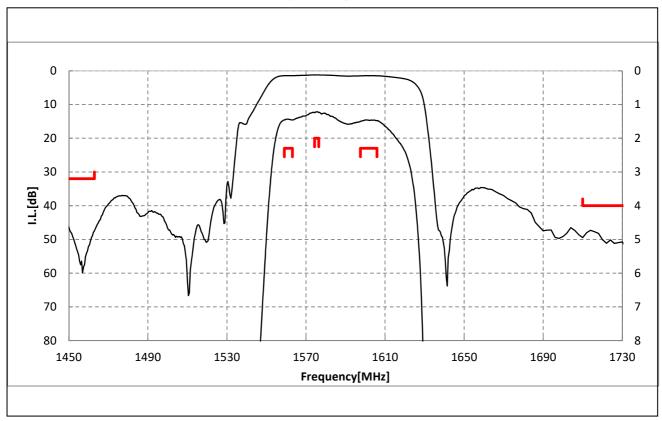


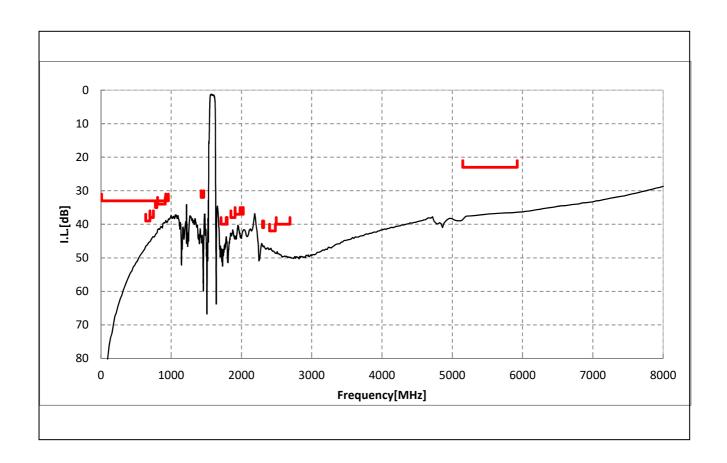




Electrical Characteristic

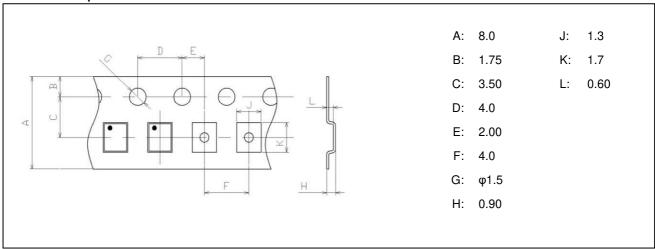
< High Freq. Filter >



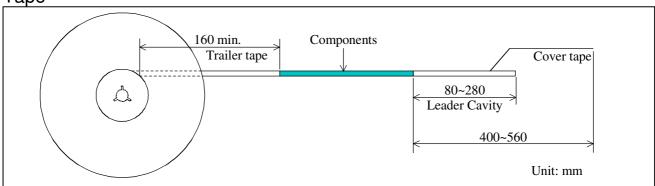


Dimensions of Tape & Reel unit: mm

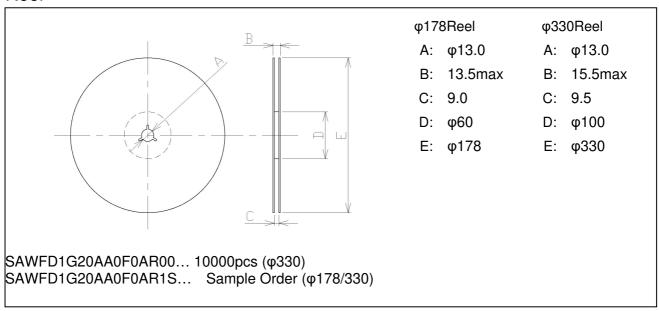
Carrier Tape



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	E	F	G	Н	J	K	L	M
2014	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2018 2022	N	Р	Q	R	S	T	U	V	W	Х	Υ	Z
2015	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2019 2023	а	b	10	d	е	f	g	h	j	k	Q	m
2016	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2020 2024	n	P	8	r	d	t	a	U	ω	æ	y	8

Table B: Date Code

date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
code	Α	В	С	D	Е	F	G	Н	J	K	
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	L	М	N	Р	Q	R	S	Т	U	V	
date	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	Х	Υ	Z	а	b	Ċ	d	е	f	g

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.