

Datasheet of SAW Device

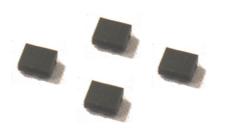
SAW Multiplexer

for Band2_Band4 / Unbalanced / 3620

Murata PN: SAHRT1G73BA0B0A

Feature

- Quadplexer
- ➤ For CA
- High Cross Isolation



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						
SAHRT1G73BA0B0A_rev. A	Oct-07-2014	■ Initial Release						
SAHRT1G73BA0B0A_rev. B	Dec-09-2014	■ Updated Spec						
SAHRT1G73BA0B0A_rev. C	Feb-03-2015	■ Updated Maximum Input Signal Level / Electrical Spec						
SAHRT1G73BA0B0A_rev. D	Feb-06-2015	■ Updated Spec						
SAHRT1G73BA0B0A_rev. E	Jun-16-2015	■ Updated SPEC						
SAHRT1G73BA0B0A_rev. F	Sep-28-2017	■ Updated General Information						

Withstanding Voltage for short term between the signal terminal and ground terminal	10V (Minimum Resistance : 1M ohm at +25+/-2deg.C)
D. C. Voltage between the signal terminal and ground terminal	(1) For Rx ports, Max 3V is tolerable.(2) For the other ports (such as Ant/Tx/GND), Voltage supply is NOT available.(Remark) If voltage supply is necessary for these ports, please place DC cut capacitors.
Maximum Input Signal Level for short term	: Band2 +29.0 dBm at CW tone/ NCDMA modulation +28.8 dBm at LTE modulation(*) : Band4 +29.0dBm at CW tone/ NCDMA modulation / LTE modulation (*)
Power Capacity	: +29.0 dBm 5000 h +55 deg.C
Minimum Resistance between the terminals	: 1M ohm
RoHS compliance	: Yes
Operating Temperature Range	: -20 to +85 deg.C
Storage Temperature Range	: -40 to +85 deg.C
ESD (ElectroStatic Discharge) sensiti	ve device

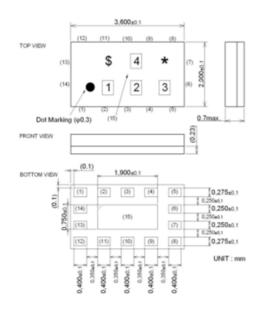
(*)CBW 5MHz, RB(24,1), QPSK



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 : S

2:1

3 : J

4:0

Terminal Number

(10): ANT. Port (B2/4)

(5): TX Port (B4)

(1): RX Port (B2)

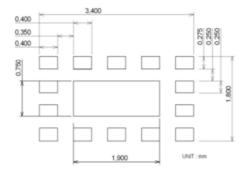
(8): TX Port (B2)

(12): RX Port (B4)

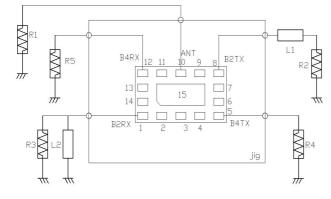
Others: GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	
R2 : 50 ohm	L1 :2nH(Ideal inductor)
R3 : 50 ohm	L2 :25nH(Ideal inductor)
R4 : 50 ohm	
R5 : 50 ohm	



Electrical Characteristic < Band2 TX.→ANT. >

T	K → ANT.				Cha (-201	racteri to +85 d	stics eg.C)	Unit	Note
					min.	typ.	max.		
Center Frequency						1880		MHz	
Insertion Loss	1851.25		1908.75	MHz		2.6	3.5	dB _{INT}	Any 1.25MHz
Discola Daviation	1852.5	to	1907.5	MHz		2.5	3.2	dB _{INT}	Any 4.5MHz
Ripple Deviation	1850.25	to_	1909.75 1909.75	MHz		0.5	1.5 1.75	dB	Any 5MHz
VSWR	1850.25 1850.25	to_	1909.75	MHz MHz		1.40 1.3	2.0		TX ANT.
Absolute Attenuation			728.	MHz	30	44	2.0	dB	ANI.
Absolute Atteridation		<u>to</u> to	716.	MHz	30	44		dB	B17 TX CA
		to	764.	MHz	35	43		dB	700MHz RX Att.
		to	787.	MHz	30	42		dB	B13 TX CA
		to	894.	MHz	30	40		dB	US-cell RX Att.
		to	1250.	MHz	30	35		dB	GPS L2
	1559. ·	to	1563.	MHz	30	37		dB	Compass
	1565.42	to	1573.37	MHz	30	38		dB	Wideband GPS lower side
	1573.37	to	1577.47	MHz	30	39		dB	Regular GPS main lobe
	1577.47	to	1585.42	MHz	30	39		dB	Wideband GPS upper side
	1597.55	to	1605.89	MHz	30	41		dB	GLONASS
	1605.88		1680.	MHz	30	39		dB	IDOO DY AU
		<u>to</u>	1990.	MHz	37	50		dB	PCS RX Att.
		to_	2025.	MHz	20	43		dB	+15 to +85deg.C
		to_	2155. 2360.	MHz MHz	44 25	50 35		dB dB	AWS RX Att. WCS RX band
		to_	2500.	MHz	25	34		dВ	ISM2.4
		to to	3820.	MHz	5.0	12		dВ	2f
		<u>to</u> to	5850.	MHz	3.0	9.2		dB	ISM 5G
		to	5455.	MHz	3.0	9.9		dB	WLAN coexistence
		to	5845.	MHz	3.0	9.2		dB	WLAN coexistence
		to	5950.	MHz	3.0	9.2		dB	3f
		to	7650.	MHz	15	22		dB	4f
		to	9560.	MHz	15	32		dB	5f
	11090.	to	11470.	MHz	5.0	17		dB	6f
	ļ				ļ	ļ	<u> </u>		ļ .

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Band2 ANT.→RX. >

						racteri				
Al	$NT. \rightarrow RX$					to +85 d		Unit	Note	
					min.	typ.*	max.			
Center Frequency						1960		MHz		
Insertion Loss	1931.25		1988.75	MHz		2.9	4.5	dB _{INT}	Any 1.25MHz	
D: 1 D : (:	1932.5	to	1987.5	MHz		2.9	4.1	dB _{INT}	Any 4.5MHz	
Ripple Deviation	1930.	to	1990.	MHz		0.6	2.2	dB	Any 5MHz	
VSWR	1930. 1930.	to	1990. 1990.	MHz MHz		2.0 1.6	2.4		RX ANT.	
Absolute Attenuation	0.2	to	1850.	MHz	40	49	2.0	dB	ANI.	
Absolute Atteridation	0.2	to	80.	MHz	50	101		dB	RX-TX	
	699.	to	716.	MHz	40	64		dB	B12 TX CA	
	777.	to	787.	MHz	40	64		dB	B13 TX CA	
	824.	to	849.	MHz	40	64		dB	B5 TX CA	
	1770.	to	1830.	MHz	40	51		dB	2TX-RX	
	1850.	to	1910.	MHz	37	56		dB	TX rejection	
	1910.	to	1915.	MHz	10	41		dB	(RX+TX)/2	
	2005.	to	2050.	MHz	3.0	9.2		dB	OoBB -44dBm,-20 to +25deg.C	
	2005.	to	2050.	MHz	5.0	9.2		dB	OoBB -44dBm,+25 to +85deg.C	
	2050.	to	2075.	MHz	25	55		dB	OoBB -30dBm	
	2075.	to	6000.	MHz	40	47		dB		
	2305.	to	2315.	MHz	40	50		dB	WCS TX CA	
	2400.	to	2500.	MHz	40	52		dB	ISM2.4	
	3780.	to	3900.	MHz	40	59		dB	RX+TX	
	3860.	to	3980.	MHz	40	59		dB	2f	
	3980.	to	13025.	MHz	15	36		dB		
	4900.	to	5950.	MHz	40	63		dB	ISM 5G	
	5610.	to	5845.	MHz	48	63		dB	WLAM and DL CA	
	5630.	to	5810.	MHz	40	63		dB	RX+2TX	
	5790.	to	5970.	MHz	40	63		dB	3f	
	5970. 7720.	to	7720.	MHz	35 30	56 52		dB dB	I AE	
	9650.	to	7960. 9950.	MHz MHz	20	50		dВ	4f 5f	
	11580.	to to	11940.	MHz	15	36		dB	51 6f	
	11360.	ιο	11940.	IVITIZ	13	30		иь	01	
	-									
						ļ				
						ļ				
	<u> </u>					ļ				
	<u> </u>					-				
						<u> </u>				
						1				
	1				1	1	l .	1	* T 0 0 0 0	

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Band4 TX.→ANT. >

					Cha	racteri	stics			
T.	$X \rightarrow ANT$.					to +85 d		Unit	Note	
					min.	typ.*	max.			
Center Frequency						1732.5		MHz		
Insertion Loss	1710.25		1754.75	MHz		2.3	2.5	dB		
Dinale Deviation	1712.5	to	1752.5	MHz		2.2	2.4	dB _{INT}	Any 4.5MHz	
Ripple Deviation VSWR	1710. 1710.	to	1755. 1755.	MHz MHz		0.3 1.6	1.2 2.0	dB	Any 5MHz	
VSWK	1710.	to	1755.	MHz		1.8	2.0		TX ANT.	
Absolute Attenuation	17.10.	to to	728.	MHz	30	50	2.0	dB	AIVI.	
/ tosolate / titeridation	699.	to	716.	MHz	30	50		dB	B12 TX	
	704.	to	716.	MHz	30	50		dB	B17 TX	
	716.	to	764.	MHz	40	49		dB	700MHz RX Rejection	
	777.	to	787.	MHz	30	49		dB	B13 TX	
	824.	to	849.	MHz	30	48		dB	B5 TX	
	851.	to	894.	MHz	37	47		dB	BC10 RX	
	1226.	to	1250.	MHz	35	44		dB	GPS L2	
	1559.	to	1563.	MHz	45	55		dB	COMPASS	
	1565.42	to	1573.37	MHz	45	56		dB	Lower GPS	
	1573.37	to	1577.46	MHz	45	55		dB	Regular GPS	
	1577.46		1585.42	MHz	45	53		dB	Upper GPS	
	1597.55	to	1605.89	MHz	40	48		dB	GLONASS	
	1805.	to	1880.	MHz	20	49 51		dB	DCS RX	
	1930. 2110.	to	1990. 2155.	MHz MHz	44 45	51		dB dB	PCS RX RX	
	2350.	to	2360.	MHz	35	43		dB	WCS RX	
	2400.	to to	2500.	MHz	35	43		dB	2.4GHz ISM	
	2440.	to	2494.	MHz	35	43		dB	WLAN co-ex	
	2500.	to	2570.	MHz	30	43		dB	B7 TX	
	3410.	to	3520.	MHz	25	39		dB	2f	
	4900.	to	5950.	MHz	10	17		dB	ISM 5G, 3f	
	4905.	to	5267.	MHz	10	19		dB	WLAN co-ex	
	6830.	to	7030.	MHz	5.0	14.0		dB	4f	
	8540.	to	8785.	MHz	5.0	15.0		dB	5f	
	10250.	to	10540.	MHz	5.0	16.0		dB	6f	
	11960.	to	12295.	MHz	10	21		dB	7f	
						1				
						ļ				
						 				
						1				
L	1				l	I	l		* T	

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Band4 ANT.→RX. >

				- 0	Cha	racteri	stics			
Al	$NT. \rightarrow RX$				(-20	to +85 d	eg.C)	Unit	Note	
					min.	typ.*	max.			
Center Frequency	2110.25	4 -	215475	NAL I-		2132.5		MHz dB		
Insertion Loss	2110.25 2112.5	to to	2154.75 2152.5	MHz MHz		2.5 2.3	3.1 2.9	dB _{INT}	Any 4.5MHz	
Ripple Deviation	2110.	to	2155.	MHz		0.3	1.5	dB	Any 5MHz	
VSWR	2110.	to	2155.	MHz		1.8	2.3		RX	
	2110.	to	2155.	MHz		1.8	2.3		ANT.	
Absolute Attenuation	10.	to	1710.	MHz	40	47		dB		
	400.	to	400.	MHz	50	71		dB	RX - TX	
	699. 777.	to	716. 787.	MHz MHz	45 40	60 59		dB dB	B12 TX B13 TX	
	824.	to to	849.	MHz	40	58		dB	B5 TX	
	1310.	to	1355.	MHz	40	52		dB	2TX - RX	
	1710.	to	1755.	MHz	45	56		dB	TX	
	1755.	to	2025.	MHz	15	43		dB		
	1910.	to	1955.	MHz	30	48		dB	(RX + TX) / 2	
	2255.	to	6000.	MHz	25	34		dB	IMOO TV	
	2305. 2400.	to_	2315. 2500.	MHz MHz	30 35	39 44		dB dB	WCS TX 2.4GHz ISM	
	2500.	to to	3820.	MHz	35	47		dB	2.70112 10101	
	3820.	to	3910.	MHz	40	48		dB	RX + TX	
	4420.	to	4310.	MHz	35	42		dB	2f	
	4310.	to	13025.	MHz	10	31		dB		
	4900.	to	5950.	MHz	30	37		dB	5GHz ISM	
	5510.	to	5685.	MHz	30	37		dB	WLAN co-ex	
	5530. 6330.	to	5665. 6465.	MHz MHz	30 25	37 36		dB dB	RX + 2TX 3f	
	8440.	to to	8620.	MHz	20	28		dB	31 4f	
	10540.	to	10785.	MHz	10	19		dB	5f	
	12660.	to	12930.	MHz	15	36		dB	6f	
						-			 	
						 				
									<u> </u>	
						-			<u> </u>	
						 			+	
	1				ı				* T at 25 , 24 a	

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Isolation >

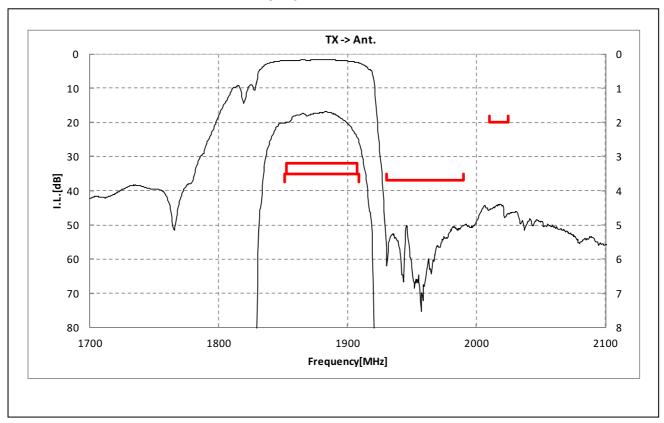
	$TX \rightarrow RX$				<u>racteri</u> to +85 d		Unit	Note	
				min.	typ.*	max.			
Isolation B2	1574. to	1577.	N/ILI-	40	76		dB		
ISUIALIUII DZ	1574. to 1850.25 to	1909.75	MHz MHz	50	59		dВ	TX	
	1851.25 to	1909.75		52	60		dB _{INT}	Any 1.25MHz, TX	
		1900.75	MHz	52	60		dB _{INT}	Any 4.5MHz, TX	
	1852.5 to	1988.75		48	55		dB _{INT}	Any 1.25MHz, RX	
	1932.5 to	1987.5	MHz	50	56	-	dB _{INT}	Any 4.5MHz, RX	
	3700. to	3820.	MHz	20	65		dB	2f	
	5550. to	5850.	MHz	20	56		dB	3f	
	0000. <u>[U</u>	0000.	IVII IZ	20	- 50		QD.		
Isolation B4	1712.5 to	1752.5	MHz	55	60		dB _{INT}	Any 4.5MHz, TX	
isolation b4	2112.5 to	2152.5	MHz	50	55		dB _{INT}	Any 4.5MHz, RX	
	1574. to	1577.	MHz	40	80		dB	7 (1) 4.0((1) 12, 10)	
	3410. to	3520.	MHz	20	68		dB	2f	
	5120. to	5275.	MHz	20	54		dB	3f	
	0.120.								
Isolation B2->B4	1850. to	1910.	MHz	52	56		dB	B2->B4. B2TX	
ioolation BE B !	1852.5 to	1907.5	MHz	52	56		dB _{INT}	Any 4.5MHz, B2->B4, B2TX	
	2110. to	2155.	MHz	50	55		dB	B2->B4. B4RX	
	2112.5 to	2152.5	MHz	50	56		dB _{INT}	Any 4.5MHz, B2->B4, B4RX	
	- 10								
Isolation B4->B2	1710. to	1755.	MHz	51	55		dB	B4->B2, B4TX	
	1712.5 to	1752.5	MHz	51	56		dB_{INT}	Any 4.5MHz, B2->B4, B2TX	
	1930. to	1990.	MHz	50	54		dB	B4->B2, B2RX	
	1932.5 to	1987.5	MHz	50	54		dB _{INT}	Any 4.5MHz, B2->B4, B4RX	

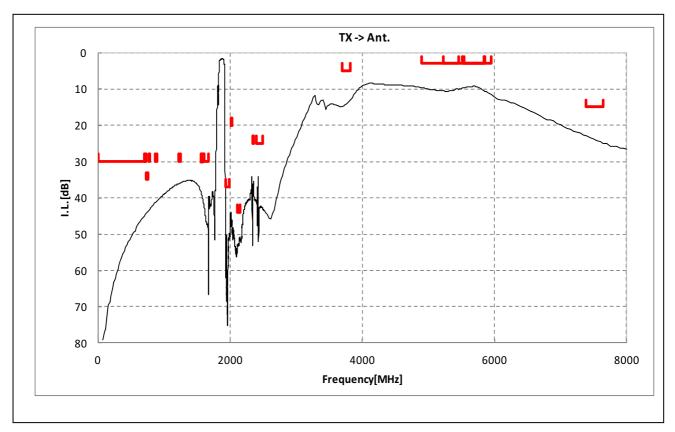
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< Band2 TX→ANT. >

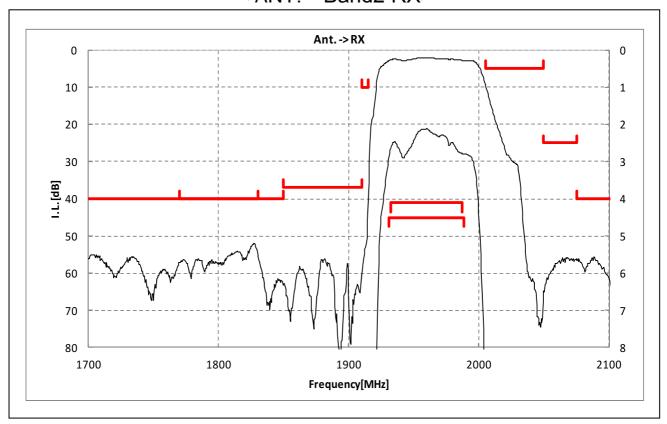


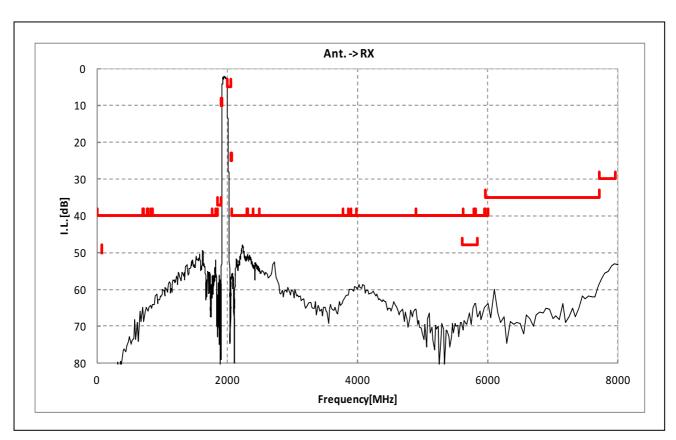




Electrical Characteristic

< ANT.→Band2 RX>

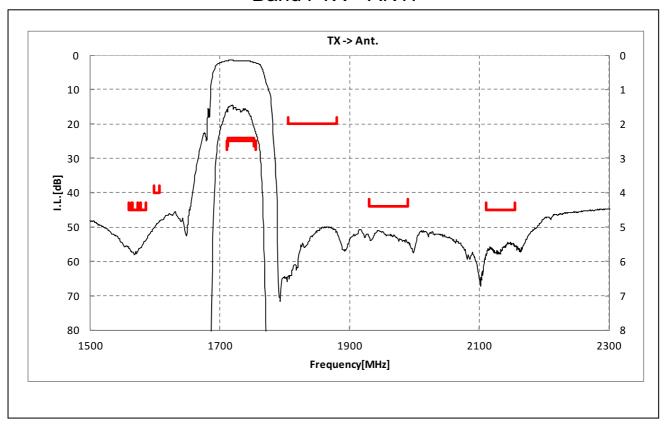


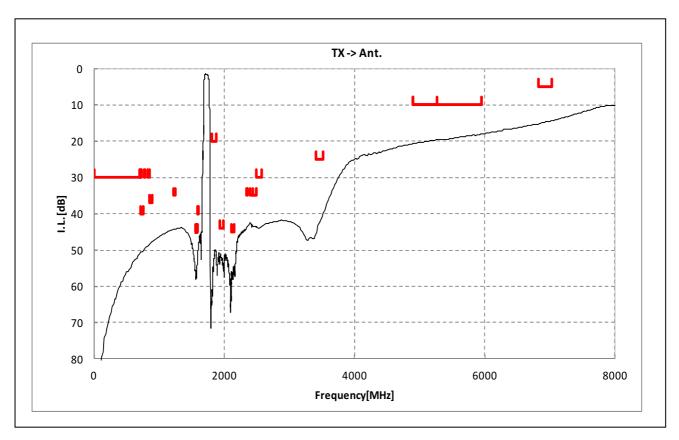




Electrical Characteristic

< Band4 TX→ANT. >

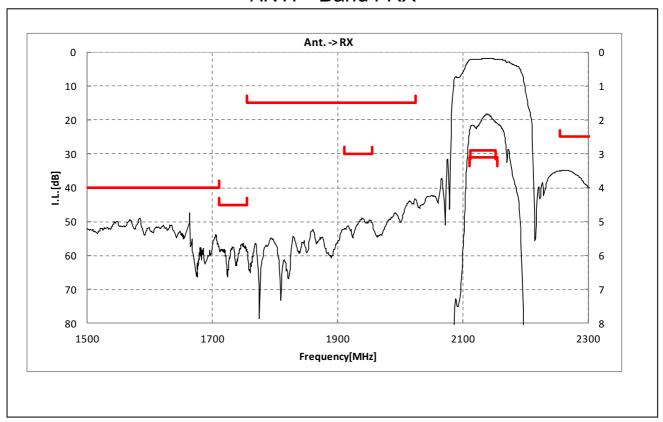


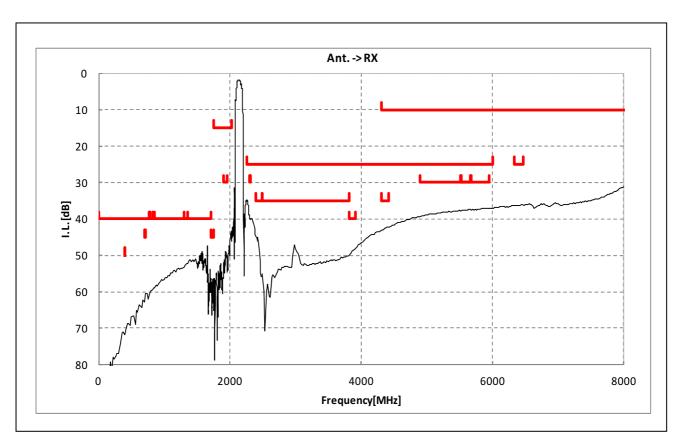




Electrical Characteristic

< ANT.→Band4 RX >

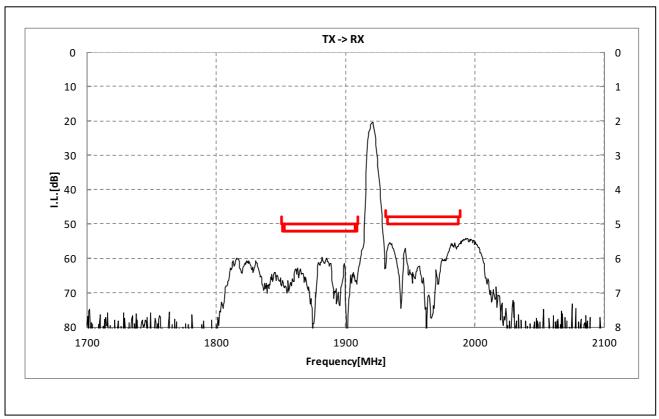




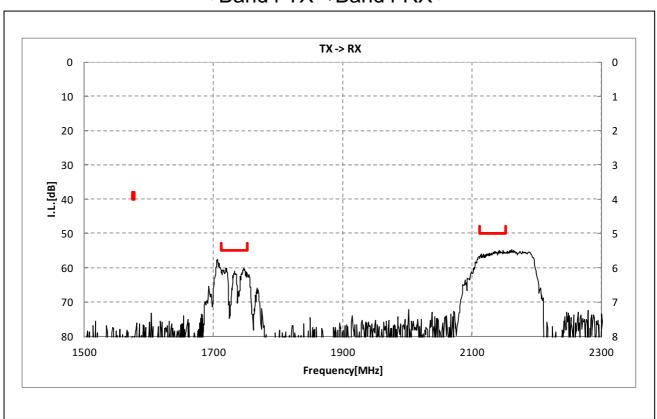


Electrical Characteristic

< Band2 TX→Band2 RX >



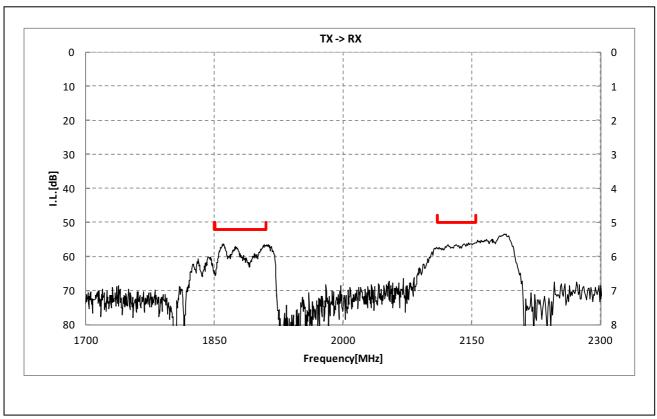
< Band4 TX→Band4 RX >



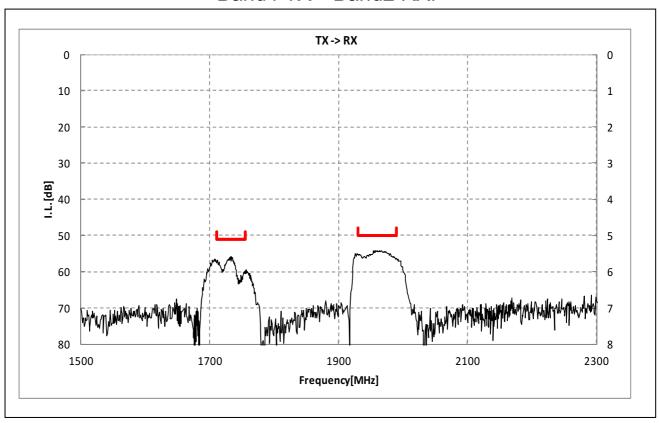


Electrical Characteristic

< Band2 TX→Band4 RX >



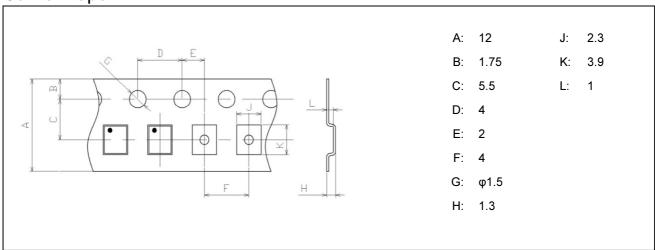
< Band4 TX→Band2 RX. >



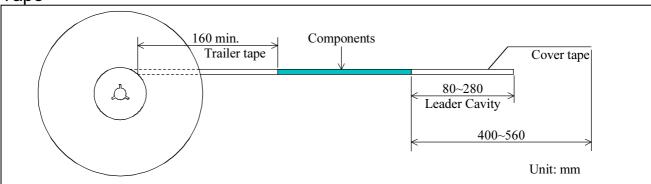


Dimensions of Tape & Reel unit: mm

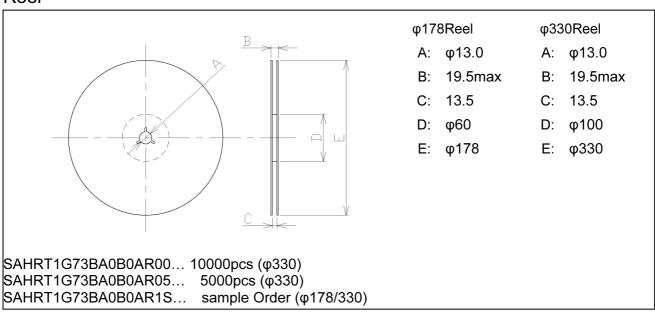
Carrier Tape



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	C	D	Е	F	G	Ι	٦	K	L	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	Y	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.

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