

Datasheet of SAW Device

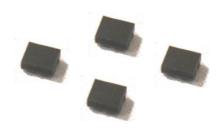
SAW Quadplexer

for Band1_Band3 / Unbalanced / 2520

Murata PN: SAHQV1G74BA0H0A

Feature

- > I.H.P. SAW
- ➤ High-Q performance



Note: This Murata SAW Component is Consumer grade product and applicable for Cellular phone or similar end devices.

Please also read Important Notice at the end of this document.

Revision H



General Information

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

- Input Power : +30.0dBm 5000h +50deg.C (1) +28.5dBm 5000h +50deg.C (2)

(1) applicable for W-CDMA, SC-FDMA, DFT-s-OFDM

(2) applicable for CP-OFDM

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

- Minimum Resistance between the terminals : 0ohm(ANT. Terminal to GND)

10Mohm(Other Terminals to GND)

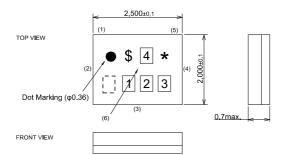
RoHS compliance : YesESD (ElectroStatic Discharge) sensitive device

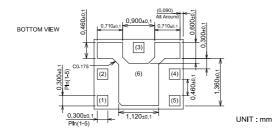
The input power shall be applied to Tx-port within own Tx passband frequency range.



Package Dimensions & Recommended Land Pattern unit: mm

Dimensions





Marking: Laser Printing

*: Month code

\$: Date code

1:S

2:2

3:A

4:0

Terminal Number

(3): ANT. Port (B1/3)

(1): TX Port (B1)

(4): RX Port (B1)

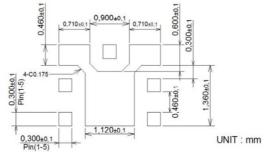
(2): TX Port (B3)

(5): RX Port (B3)

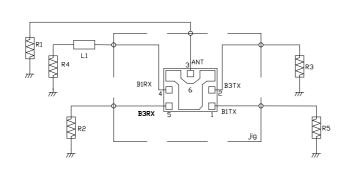
others: GND.

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	
R2 : 50 ohm	
R3 : 50 ohm	
R4:50 ohm	L1 :0.7nH(Ideal inductor)
R5 : 50 ohm	



Electrical Characteristic < Band1 TX→ANT. >

min.typ.*max.Center Frequency1950MHz	$TX \to ANT.$						racteri: to +85 d	stics eg.C)	Unit	Note
Insertion Loss 1922.5 to 1977.5 MHz 1.4 2.1 dB MHz dB MHz 1.5 2.0 TX MNT. MNT						min.	typ.*	max.		1.000
Ripple Deviation	Center Frequency						1950			
1920. to 1980. MHz 1.5 2.0 TX 1920. to 1980. MHz 1.5 2.0 ANT. 1920. to 1980. MHz 1.5 2.0 ANT. 1920. to 1980. MHz 1.5 2.0 ANT. 1920. to 1574. MHz 31 46 dB 420. to 494. MHz 50 65 dB 450MHz RX Att. 815. to 830. MHz 48 56 dB B18 TX CA 824. to 849. MHz 47 55 dB B5 TX CA 830. to 845. MHz 48 56 dB B19 TX CA 843. to 894. MHz 47 55 dB JCDMA/CELL RX Att. 880. to 915. MHz 46 54 dB B8 TX CA 925. to 960. MHz 45 53 dB WLAN and DL CA 1226. to 1250. MHz 43 49 dB GPS L2 1447.9 to 1462.9 MHz 31 46 dB B21 TX CA 1476. to 1511. MHz 40 47 dB B11 RX band 1496. to 1511. MHz 40 47 dB B11 RX band 1496. to 1573.37 MHz 42 47 dB B21 RX band 1559. to 1563. MHz 42 47 dB B21 RX band 1577.47 to 1585.42 MHz 42 47 dB Regular GPS lower side 1577.47 to 1585.42 MHz 42 47 dB Regular GPS main lobe 1577.47 to 1585.42 MHz 42 47 dB Regular GPS main lobe 1597.55 to 1605.89 MHz 43 48 dB GLONASS 1605.88 to 1805. MHz 43 48 dB GLONASS 1805. to 1865. MHz 45 61 dB Protected DCS band 1805. to 1805. MHz 45 58 dB Protected DCS band 1805. to 1805. MHz 50 25.0 dB 2010. to 2025. MHz 39 48 dB Protected DCS band 1806. to 1895. MHz 50 25.0 dB Protected DCS band 1807. to 1675.5 MHz 50 56 dB_mr Any 4.5MHz, RX 2400. to 2500. MHz 39 48 dB Protected 2.6GHz band 3840. to 3960. MHz 39 48 dB Protected 2.6GHz band 3840. to 3960. MHz 32 37 dB 2f 4900. to 5950. MHz 25 31 dB WLAN 801.11a	Insertion Loss		to							Any 4.5MHz
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7680. to 7920. MHz 23 32 08 4t										
		7680.	to	7920.	MHz	23	32		аВ	41
		-								

^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT.→Band1 RX >

					Characteristics				
AN			(-20 to +85 deg.C)		Unit	Note			
O- at-a Farmana	1				min.		max.	NALL-	
Center Frequency Insertion Loss	2112.5	+-	2167.5	MHz		2140 1.6	2.3	MHz dB _{INT}	Any 4.5MHz
Ripple Deviation	2112.5	to	2170.	MHz		0.3	1.6	dB _{INT}	Ariy 4.5ivinz
VSWR	2110.	to to	2170.	MHz		1.6	2.0	ub	RX
******	2110.	to	2170.	MHz		1.4	2.0		ANT.
Absolute Attenuation	1.	to	1920.	MHz	40	49		dB	7.1.1.1
			190.	MHz	55	87		dB	RX-TX
	718.	to	748.	MHz	55	65		dB	B28-B TX CA
	814.	to	849.	MHz	52	62		dB	B26 TX CA
	880.	to	915.	MHz	51	61		dB	B8 TX CA
	1427.	to	1447.	MHz	45	54		dB	B11 TX CA
	1447.	to	1463.	MHz	45	54		dB	B21 TX CA
	1730.	to	1790.	MHz	40	58		dB	2TX-RX
	1710.	to	1785.	MHz	44	58		dB	B3 TX CA
	1922.5	to	1977.5	MHz	45	62		dB _{INT}	Any 4.5MHz, TX
	1980. 2015.	to	2015. 2075.	MHz MHz	15 9.0	58 18.0		dB dB	(RX+TX)/2
	2255.	to	6130.	MHz	25	36		dB dB	(CA+1A)/2
	2400.	to to	2500.	MHz	50	61		dB	ISM2.4
	2500.	to	2570.	MHz	50	63		dB	B7 TX CA
	4030.	to	4150.	MHz	38	46		dB	RX+TX
	4220.	to	4340.	MHz	40	45		dB	2f
	4340.	to	13025.	MHz	4.0	14.0		dB	
	4900.	to	5950.	MHz	25	36		dB	ISM 5G
	5950.	to	6130.	MHz	34	39		dB	RX+2TX
	6130.	to	6330.	MHz	33	39		dB	
	6330.	to	6510.	MHz	31	37		dB	3f
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	<u> </u>					<u> </u>			* Typical value at 25±2dag C

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Band3 TX→ANT. >

TX → ANT.						racteri to +85 d	stics	1.124	N
1.	$X \rightarrow AIVI$.				min.	typ.*	max.	Unit	Note
Center Frequency	<u> </u>				1111111.	1747.5		MHz	
Insertion Loss	1712.5	to	1782.5	MHz		1.5	2.3	dB _{INT}	Any 4.5MHz
Ripple Deviation		to	1785.	MHz		0.8	2.0	dB	7 mg 1100m iz
VSWR		to	1785.	MHz		1.5	2.3		TX
		to	1785.	MHz		1.5	2.1		ANT.
Absolute Attenuation	10.	to	1565.42	MHz	35	46		dB	
		to	748.	MHz	45	55		dB	B28 TX CA
		to	756.	MHz	45	54		dB	B28 RX
		to	849.	MHz	43	52		dB	B26 TX CA
		to	849. 845.	MHz MHz	43 43	52 52		dB dB	B5 TX CA B19 TX CA
		to to	862.	MHz	43	52		dB	B20 TX CA
		to	915.	MHz	43	51		dB	B8 TX CA
		to	960.	MHz	42	51		dB	WLAN and DL CA
		to	1511.	MHz	44	52		dB	B21 RX band
	1559.	to	1563.	MHz	50	63		dB	Compass
	1565.42	to	1573.37	MHz	50	64		dB	Wideband GPS lower side
		to	1577.47	MHz	50	63		dB	Regular GPS main lobe
	1577.47	to	1585.42	MHz	50	60		dB	Wideband GPS upper side
	1597.55	<u>to</u>	1605.89	MHz	43	55		dB	GLONASS
	1605.88	to	1680. 1877.5	MHz	10 45	44 55		dB dB _{INT}	Any 4 FMHz DV
	1807.25 1920.		1980.	MHz MHz	38	46		dB _{INT}	Any 4.5MHz, RX
		to to	2170.	MHz	44	58		dB	
		to	2500.	MHz	38	49		dB	WLAN coexistence
		to	2494.	MHz	38	49		dB	TTE II T GOOMISTORIOS
		to	2570.	MHz	32	46		dB	B7 TX CA
	2620.	to	2690.	MHz	35	48		dB	
	3420.	to	3570.	MHz	25	46		dB	2f
		to	5950.	MHz	22	29		dB	WLAN coexistence
		to	5385.	MHz	25	35		dB	
		to	5355. 7140.	MHz	26 7.0	36 17.0		dB dB	3f
		to_	8925.	MHz MHz	3.0	13.0		dВ	4f
	10000	to to	10710.	MHz	4.0	14.0		dB	
		to	12495.	MHz	2.0	12.0		dB	
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	1				•			1	* Typical value at 25±2dag C

^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT.→Band3 RX >

					racteri				
ANT. o RX						(-20 to +85 deg.C)		Unit	Note
					min.		max.		
Center Frequency						1842.5		MHz	
Insertion Loss	1807.5	to	1877.5	MHz		2.1	3.2	dB _{INT}	Any 4.5MHz
Ripple Deviation	1805.	to	1880.	MHz		1.2	2.7 2.2	dB	l DV
VSWR	1805. 1805.	to	1880. 1880.	MHz MHz		1.7 1.6	2.2		RX ANT.
Absolute Attenuation	1.	to	1710.	MHz	42	50	2.1	dB	ANT.
Absolute Atteridation	<u>'''</u>	to	95.	MHz	60	89		dB	RX-TX
	718.	to	748.	MHz	58	64		dB	B28-B TX CA
	814.	to	849.	MHz	57	62		dB	B26 TX CA
	832.	to	862.	MHz	56	62		dB	B20 TX CA
	880.	to	915.	MHz	55	61		dB	B8 TX CA
	1447.	to	1463.	MHz	45	51		dB	B21 TX CA
	1615.	to	1690.	MHz	45	50		dB	2TX-RX
	1712.5	to	1782.5	MHz	38	58		dB _{INT}	Any 4.5MHz, TX
	1785.	to	1790.	MHz	10	47		dB	(RX+TX)/2
	1920.	to	6000.	MHz	28	39		dB	LICANO A
	2400. 2500.	to	2500. 2570.	MHz	30 32	41 49		dB dB	ISM2.4
	2570.	to	3515.	MHz MHz	28	39		dВ	B7 TX
	3515.	to to	3760.	MHz	28	40		dB	RX+TX and 2f
	4900.	to	5950.	MHz	30	39		dB	ISM 5G
	5205.	to	5660.	MHz	30	39		dB	WLAN and RX+2TX and 3f
	7220.	to	7520.	MHz	25	37		dB	4f
						-			
							<u> </u>		
						-			
						-			
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l	1						<u> </u>	l	* Typical value at 25±2dag C

^{*} Typical value at 25±2deg.C



Electrical Characteristic < Isolation >

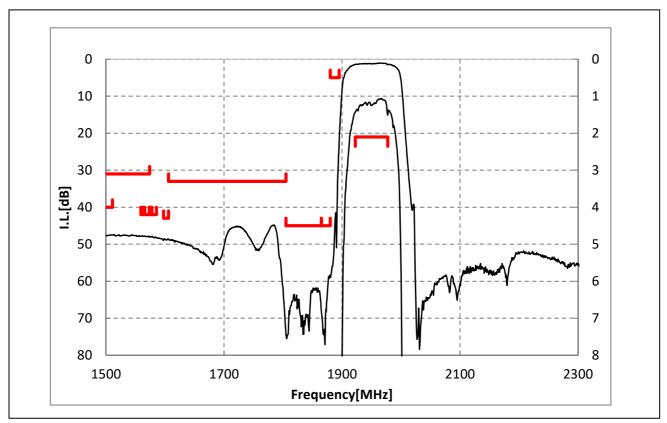
Electrical Ch	$TX \rightarrow RX$	<u> </u>		Cha	racteri to +85 d	stics eg.C)	Unit	Note
				min.	typ.*	max.		
Isolation B1	1574. to	1577.	MHz	50	74		dB	
loolation B1	1922.5 to	1977.5	MHz	56	63		dB _{INT}	Any 4.5MHz, TX
	2112.5 to	2167.5	MHz	53	57		dB _{INT}	Any 4.5MHz, RX
	3830. to	3970.	MHz	50	68		dB	TX 2nd harmonic Att.
	5750. to	5950.	MHz	40	59		dB	TX 3rd harmonic Att.
Isolation B3	1712.5 to	1782.5	MHz	55	59		dB _{INT}	Any 4.5MHz, TX
	1807.5 to	1877.5	MHz	55	59		dB _{INT}	Any 4.5MHz, RX
In alatina D4 D0	1007.5	1077.5	N 41 1-	50			dD	A TO A FAMILE DO DV
Isolation B1->B3	1807.5 to	1877.5 1977.5	MHz	56 56	59 59		dB _{INT}	Any 4.5MHz, B3 RX
	1922.5 to	1977.5	MHz	36	59		dB _{INT}	Any 4.5MHz, B1 TX
Isolation B3->B1	1712.5 to	1782.5	MHz	56	59		dB _{INT}	Any 4.5MHz, B3 TX
isolation bo->b i	2112.5 to	2167.5	MHz	55	62		dB _{INT}	Any 4.5MHz, B1 RX
	2112.0 (0	2107.0	1711 12	- 00			2. — IIV I	Trity 4.5iviriz, BTTIX
					-			
					 			
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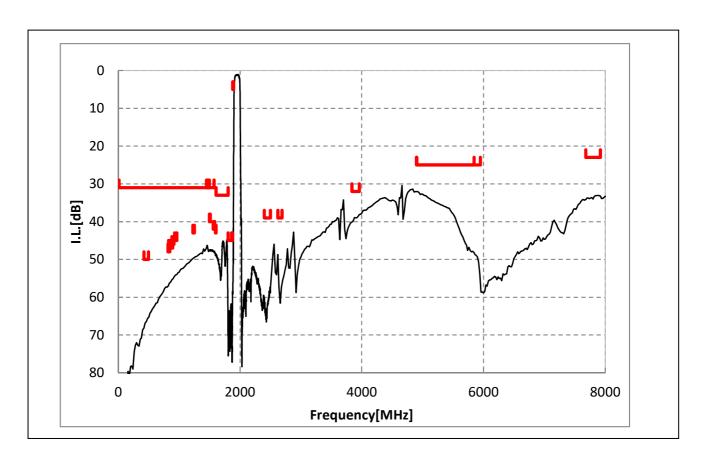
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< Band1 TX→ANT. >

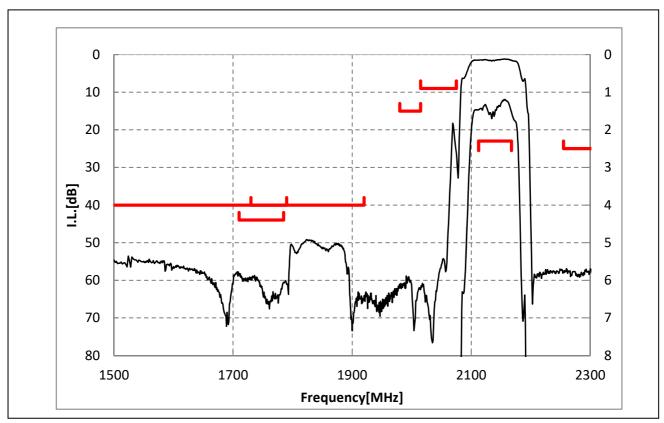


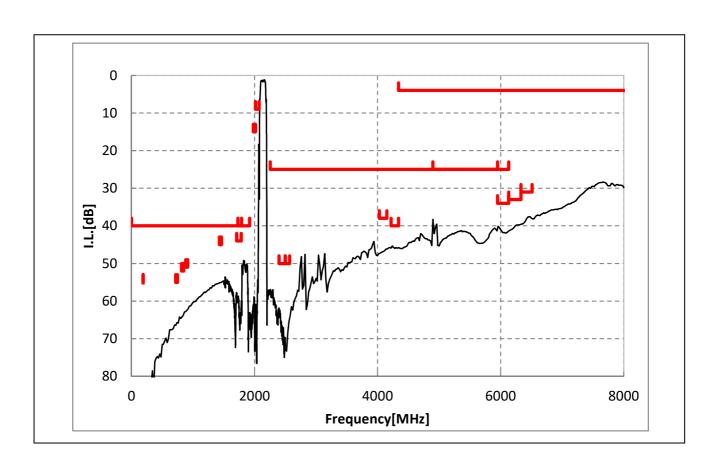




Electrical Characteristic

< ANT.→Band1 RX >

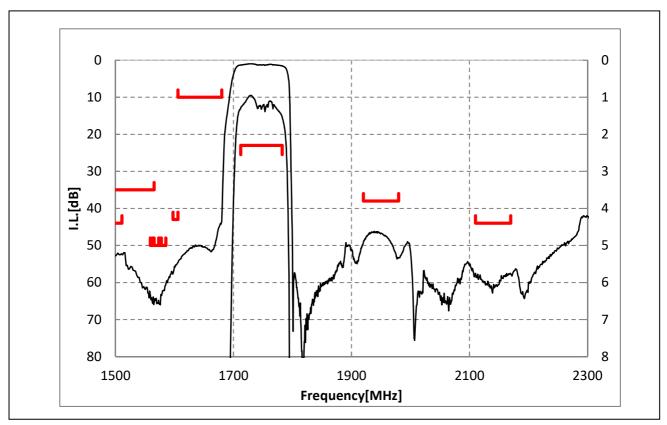


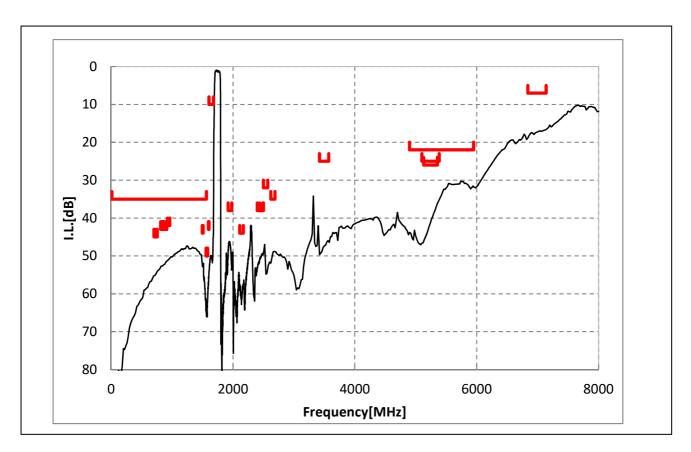




Electrical Characteristic

< Band3 TX→ANT. >

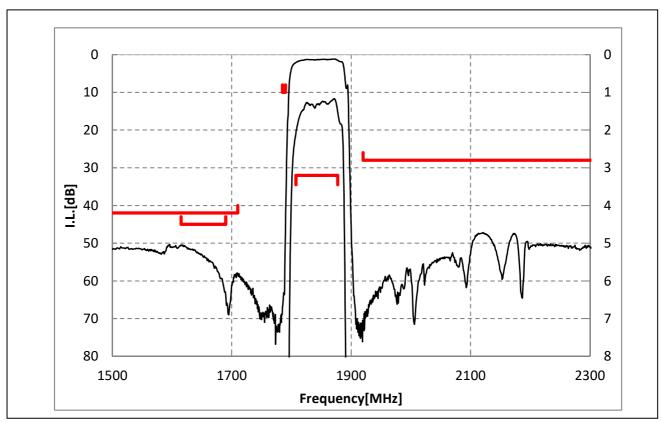


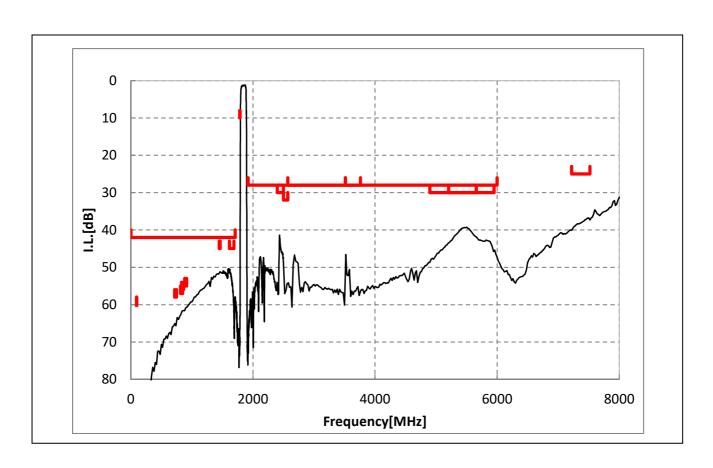




Electrical Characteristic

< ANT.→Band3 RX >



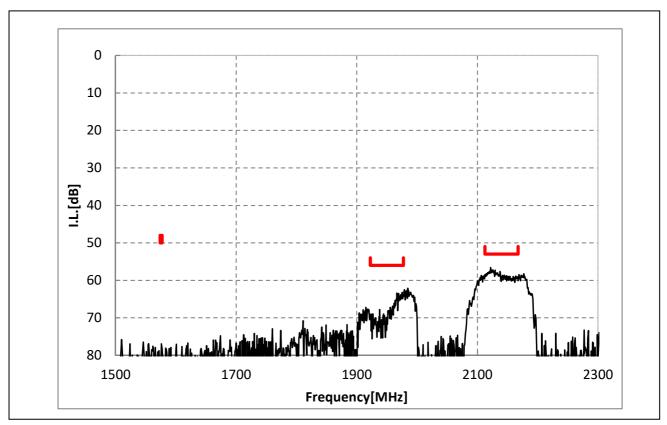




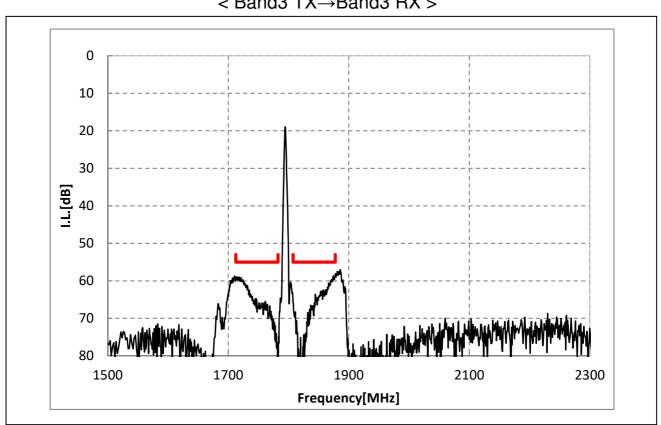
(Band1_Band3 / Unbalanced / 2520) SAHQV1G74BA0H0A

Electrical Characteristic

< Band1 TX→Band1 RX >



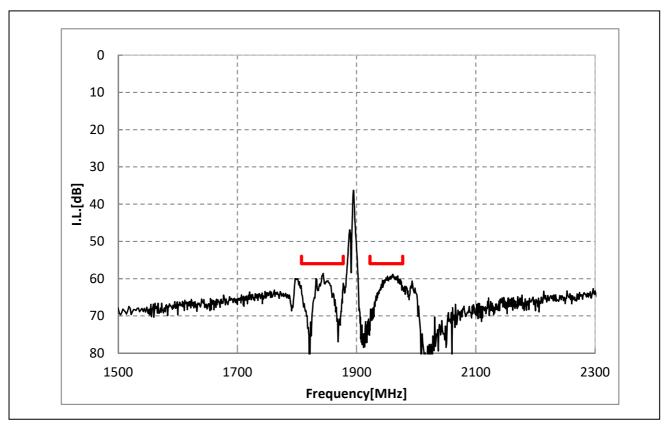
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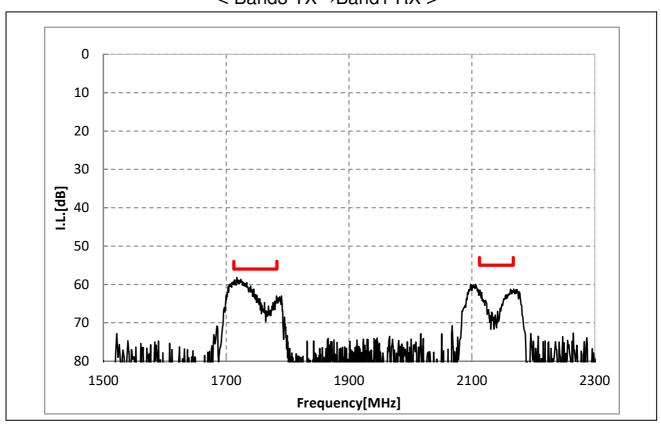


Electrical Characteristic

< Band1 TX→Band3 RX >



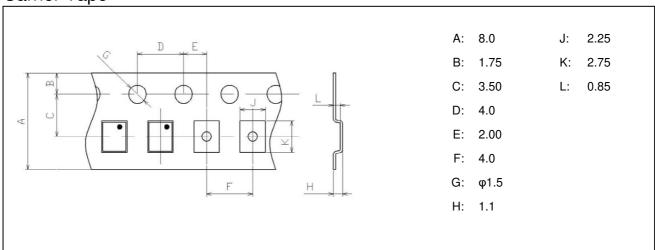
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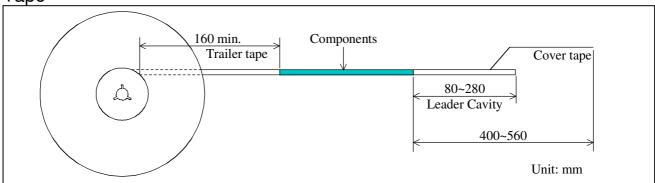


Dimensions of Tape & Reel unit: mm

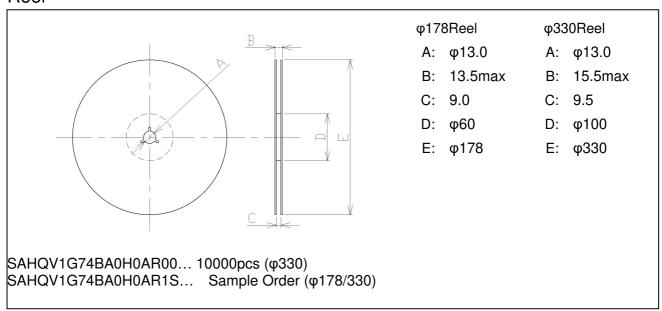
Carrier Tape



Tape



Reel





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 specified in the front page of this product specifications (the "Product" or "Products") 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 Product 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 for any application which requires especially high reliability or accuracy in order to prevent defect which incurs high possibility of damage to the third party's life, body or property such as the applications listed below as item (a) to (j) (the "Prohibited Application"). You acknowledge and agree that, if you use our Products in the Prohibited Applications, we will not be responsible for any damage caused by such use.

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 THE PROHIBITED APPLICATIONS.

- (a) Aircraft equipment.
- (b) Aerospace equipment
- (c) Undersea equipment.
- (d) Power plant control equipment
- (e) Medical equipment.
- (f) Transportation equipment (vehicles, automotive, trains, ships, etc.).
- (g)Traffic signal equipment.
- (h)Disaster prevention / crime prevention equipment.
- (i) Burning / explosion control equipment
- (j) Application of similar complexity and/ or reliability requirements to the applications listed in the above.

For the avoidance of doubt, the Product is not automotive grade, and will not support such requests for automotive as below, also not support other specific requests for automotive.

- AEC-Q200
- PPAP
- IATF16949, VDA6.3
- Zero Defect program
- Long product life cycle
- Automotive 8D failure analysis and report



Important Notice (2/2)

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.