Datasheet of SAW Device

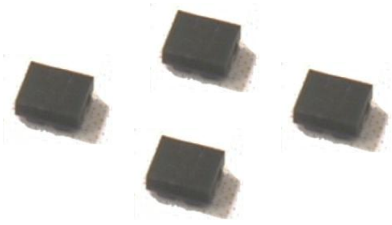
SAW Duplexer

for Band1 / Balanced / LR /1814

Murata PN: SAYEY1G95HA0F0A

■ Feature

- Smallest size
-
-



Note : Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only.
Please also read caution at the end of this document.

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

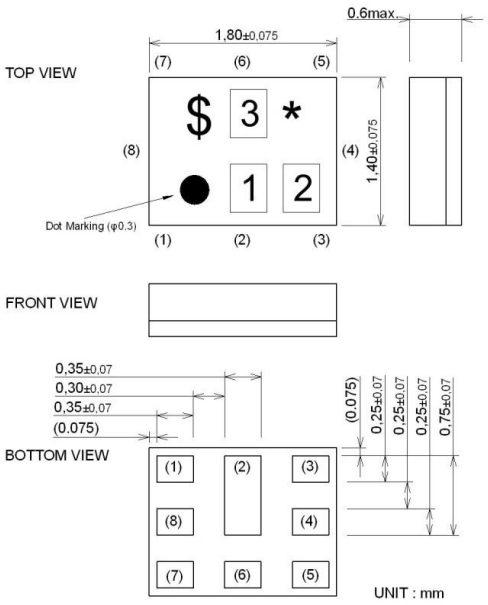
Revision No.	Date	Description
SAYEY1G95HA0F0A_rev. A	Jul-11-2013	■ Initial Release
SAYEY1G95HA0F0A_rev. B	Sep-20-2013	
SAYEY1G95HA0F0A_rev. C	Apr-29-2014	

- 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 betweem the terminals : 10M ohm
- RoHS compliance : Yes

Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions

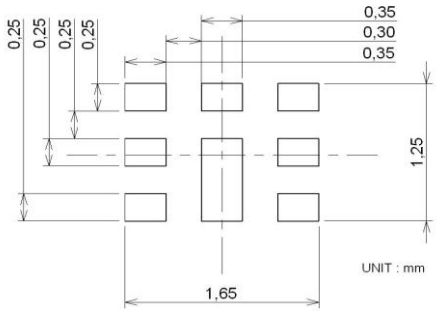


Marking : Laser Printing
* : Month code(Refer to the table A)
$: Date code(Refer to the table B)
1 : 4
2 : U
3 : A

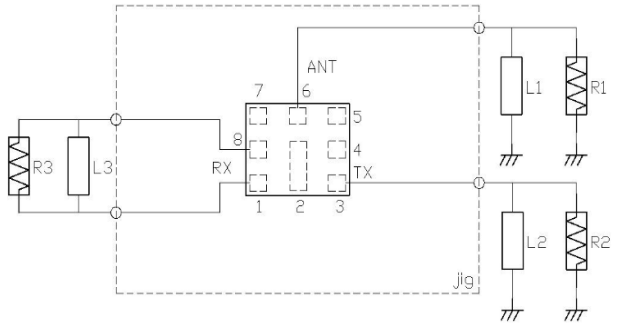
Terminal Number
(6) : ANT.
(3) : TX
(1)(8) : RX
Others : GND.

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

Land Pattern



Measurement Circuit (Top View)



R1 : 50 ohm	L1 : 2.1 nH(Ideal inductor)
R2 : 50 ohm	L2 : 8 nH(Ideal inductor)
R3 : 100 ohm	L3 : 10 nH(Ideal inductor)

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic < TX→ANT. >

Matching Impedance (nominal)

- : ANT. Port : 50 ohm // 2.1 nH(Ideal inductor), 2.5 nH(LQP0603TN2N5, Reference)
- : TX Port : 50 ohm // 8 nH(Ideal inductor)
- : RX Port : 100 ohm // 10 nH(Ideal inductor)

TX → ANT.				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.	max.		
Center Frequency					1950		MHz	
Insertion Loss	1920.	to	1980. MHz		1.9	2.0	dB	
	1920.	to	1980. MHz		1.9	2.0	dB	+23 to +27deg.C
	1922.4	to	1977.6 MHz		1.8	1.9	dB_{INT}	Any 3.84MHz
	1922.4	to	1977.6 MHz		1.8	1.9	dB_{INT}	+23 to +27deg.C, Any 3.84MHz
Ripple Deviation	1920.	to	1980. MHz		0.6	1.2	dB	
VSWR	1920.	to	1980. MHz		1.4	2.0		TX
	1920.	to	1980. MHz		1.4	2.0		ANT.
Absolute Attenuation	10.	to	1574. MHz	30	40		dB	
	420.	to	494. MHz	44	63		dB	
	815.	to	830. MHz	30	51		dB	B18Tx
	824.	to	849. MHz	30	50		dB	B5Tx
	830.	to	845. MHz	30	50		dB	B19Tx
	843.	to	894. MHz	44	49		dB	
	880.	to	915. MHz	30	48		dB	B8Tx
	925.	to	960. MHz	42	47		dB	
	1226.	to	1250. MHz	37	42		dB	GPS L2
	1447.9	to	1462.9 MHz	30	40		dB	B21Tx
	1475.	to	1496. MHz	38	40		dB	B11Rx
	1496.	to	1511. MHz	37	40		dB	B21Rx
	1559.	to	1563. MHz	38	40		dB	Compass
	1565.42	to	1573.37 MHz	38	40		dB	Wideband GPS, lower side lobe
	1573.37	to	1577.46 MHz	38	40		dB	Regular GPS, main lobe
	1577.46	to	1585.42 MHz	38	40		dB	Wideband GPS, upper side lobe
	1597.55	to	1605.88 MHz	38	41		dB	GLONASS
	1605.88	to	1805. MHz	25	37		dB	
	1805.	to	1865. MHz	25	35		dB	
	1865.	to	1880. MHz	10	34		dB	
	1880.	to	1895. MHz	3.9	15		dB	
	2010.	to	2025. MHz	4.7	28		dB	
	2010.	to	2025. MHz	20	28		dB	+23 to +27deg.C
	2110.	to	2170. MHz	44	49		dB	
	2400.	to	2500. MHz	32	36		dB	2.4GHzISM
	2620.	to	2690. MHz	28	33		dB	
	3840.	to	3960. MHz	23	29		dB	2f
	4900.	to	5950. MHz	16	22		dB	3f
	4905.	to	5845. MHz	17	22		dB	
	7680.	to	7920. MHz	15	26		dB	4f
	9600.	to	9900. MHz	15	25		dB	5f
	11520.	to	11880. MHz	15	25		dB	6f

* Typical value at 25±2deg.C

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic < ANT.→RX. >

Matching Impedance (nominal)

- : ANT. Port : 50 ohm // 2.1 nH(Ideal inductor), 2.5 nH(LQP0603TN2N5, Reference)
- : TX Port : 50 ohm // 8 nH(Ideal inductor)
- : RX Port : 100 ohm // 10 nH(Ideal inductor)

ANT. → RX					Characteristics (-20 to +85 deg.C)			Unit	Note
					min.	typ.	max.		
Center Frequency						2140		MHz	
Insertion Loss	2110.	to	2170.	MHz		1.8	2.1	dB	
	2110.	to	2170.	MHz		1.8	2.0	dB	+23 to +27deg.C
	2112.4	to	2167.6	MHz		1.8	2.1	dB_{INT}	Any 3.84MHz
	2112.4	to	2167.6	MHz		1.8	2.0	dB_{INT}	+23 to +27deg.C, Any 3.84MHz
Ripple Deviation	2110.	to	2170.	MHz		0.5	1.0	dB	
VSWR	2110.	to	2170.	MHz		1.5	2.0		RX
	2110.	to	2170.	MHz		1.5	2.0		ANT.
Amplitude Balance	2110.	to	2170.	MHz	-1.0	-0.3	1.0	dB	
Phase Balance	2110.	to	2170.	MHz	170	174	190	deg.	
Absolute Attenuation	1.	to	1920.	MHz	27	32		dB	
			190.	MHz	40	124		dB	Rx-Tx
	718.	to	748.	MHz	50	83		dB	B28Tx
	814.	to	849.	MHz	40	81		dB	B26Tx
	880.	to	915.	MHz	40	76		dB	B8Tx
	1427.	to	1447.	MHz	40	49		dB	B11Tx
	1447.	to	1463.	MHz	40	49		dB	B21Tx
	1730.	to	1790.	MHz	40	45		dB	2Tx-Rx
	1710.	to	1785.	MHz	40	45		dB	B3Tx
	1920.	to	1980.	MHz	45	59		dB	Tx
	1980.	to	2015.	MHz	15	50		dB	
	2015.	to	2050.	MHz	18	29		dB	(Rx+Tx)/2
	2050.	to	2075.	MHz	3.9	9		dB	
	2255.	to	6130.	MHz	28	33		dB	
	2400.	to	2500.	MHz	28	34		dB	2.4GHzISM
	2500.	to	2570.	MHz	38	43		dB	B7Tx
	4030.	to	4150.	MHz	40	52		dB	Rx+Tx
	4220.	to	4340.	MHz	40	51		dB	2f
	4340.	to	13025.	MHz	15	39		dB	
	4900.	to	5950.	MHz	34	48		dB	5GHzISM
	5950.	to	6130.	MHz	30	47		dB	Rx+2Tx
	6130.	to	6330.	MHz	30	47		dB	
	6330.	to	6510.	MHz	30	45		dB	3f
	8440.	to	8680.	MHz	20	41		dB	4f
	10550.	to	10850.	MHz	20	41		dB	5f
	12660.	to	13020.	MHz	15	41		dB	6f

* Typical value at 25±2deg.C

SAYEY1G95HA0F0A (Band1 / Balanced / LR / 1814)

Electrical Characteristic < TX→RX. >

Matching Impedance (nominal)

- : ANT. Port : 50 ohm // 2.1 nH(Ideal inductor), 2.5 nH(LQP0603TN2N5, Reference)
- : TX Port : 50 ohm // 8 nH(Ideal inductor)
- : RX Port : 100 ohm // 10 nH(Ideal inductor)

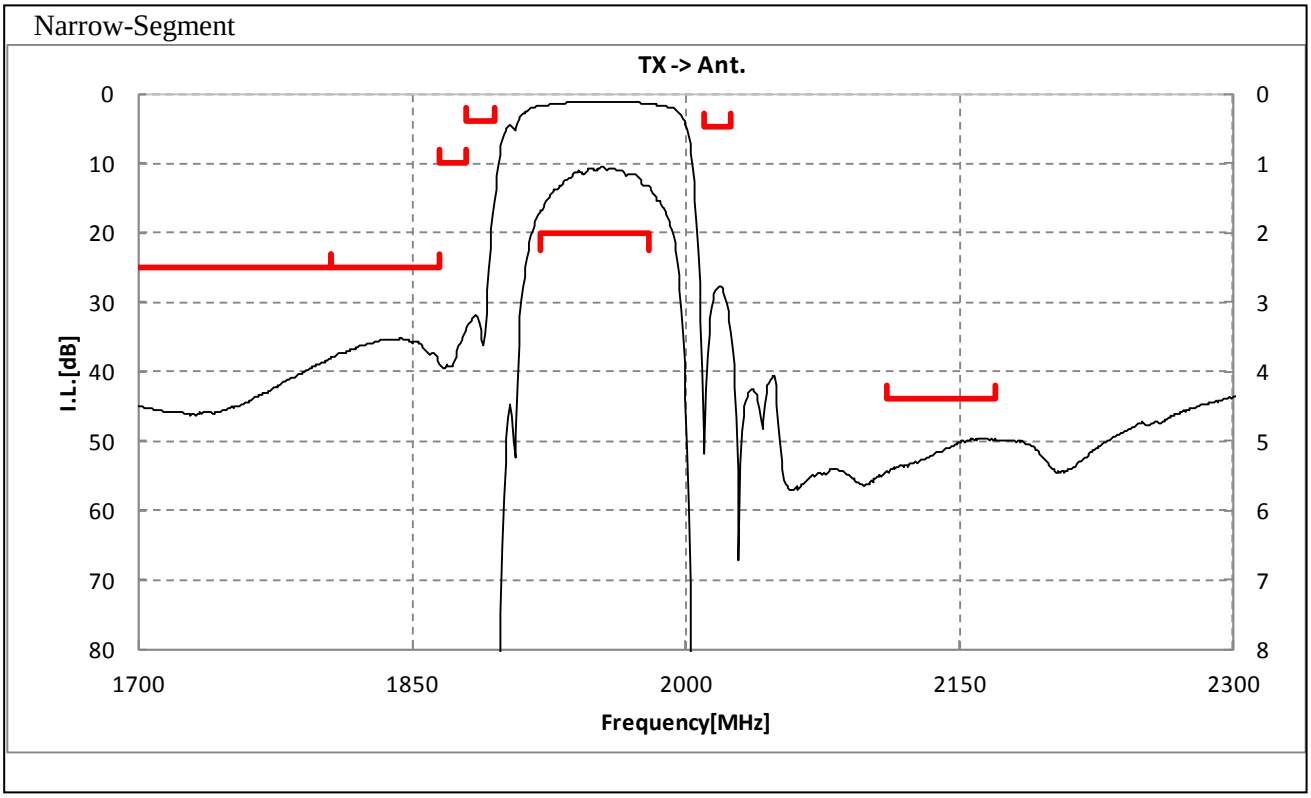
TX → RX					Characteristics (-20 to +85 deg.C)			Unit	Note
					min.	typ.	max.		
Isolation									
Differential Mode	1574.	to	1577.	MHz	40	70		dB	
	1920.	to	1980.	MHz	55	58		dB	
	1922.4	to	1977.6	MHz	55	58		dB_{INT}	Any 3.84MHz
	2110.	to	2170.	MHz	52	59		dB	
	2112.4	to	2167.6	MHz	52	60		dB_{INT}	Any 3.84MHz
	3830.	to	3970.	MHz	30	58		dB	
	5750.	to	5950.	MHz	30	56		dB	
Common Mode	1920.	to	1980.	MHz	48	51		dB	
	1922.4	to	1977.6	MHz	48	51		dB_{INT}	Any 3.84MHz

* Typical value at 25±2deg.C

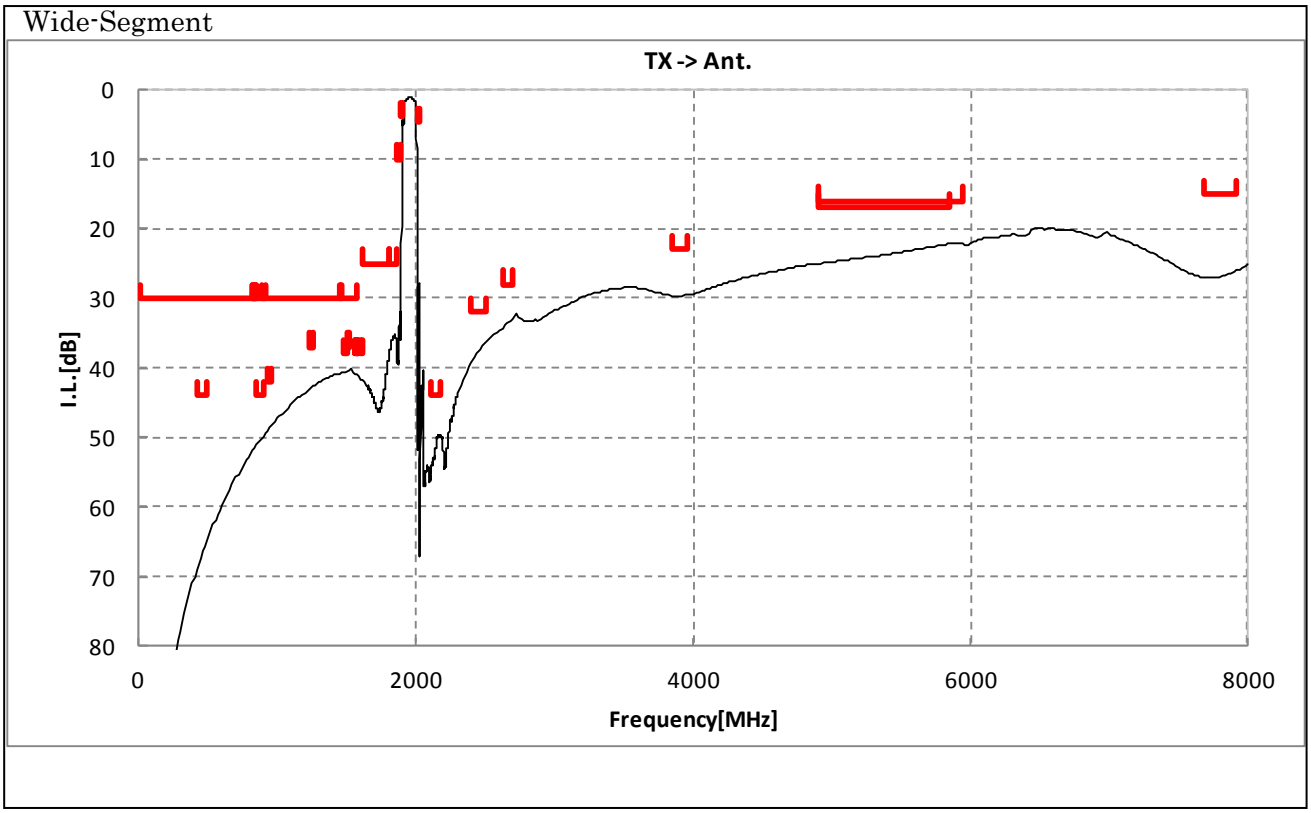
Electrical Characteristic

< TX→ANT. >

Narrow-Segment



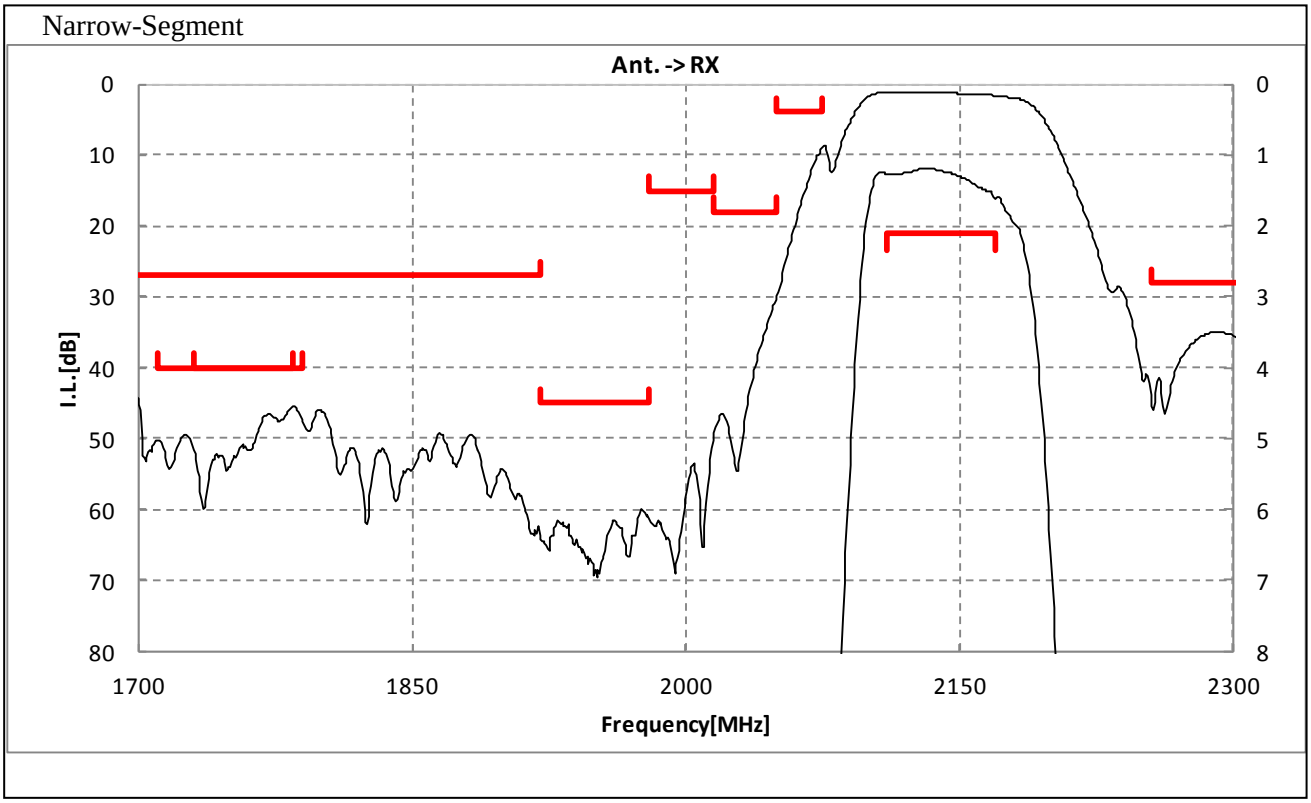
Wide-Segment



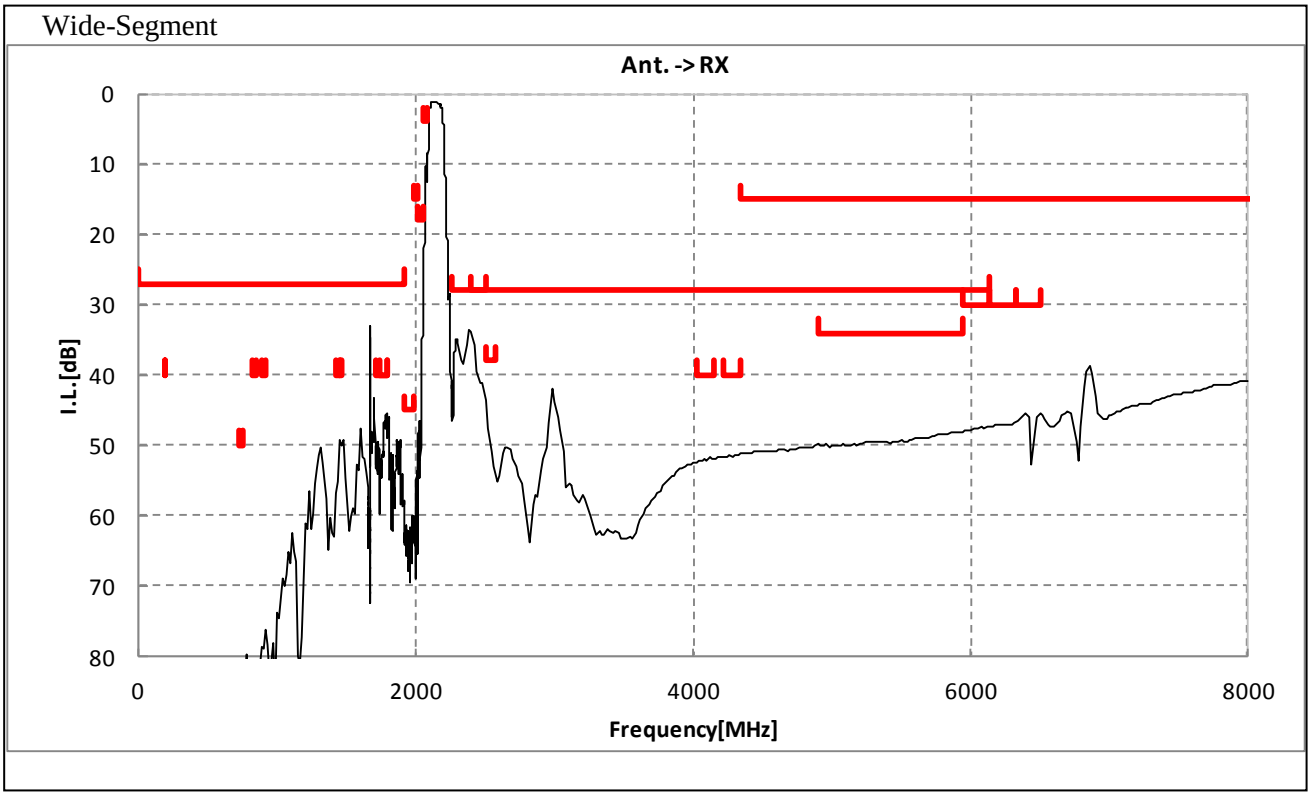
Electrical Characteristic

< ANT.→RX. >

Narrow-Segment



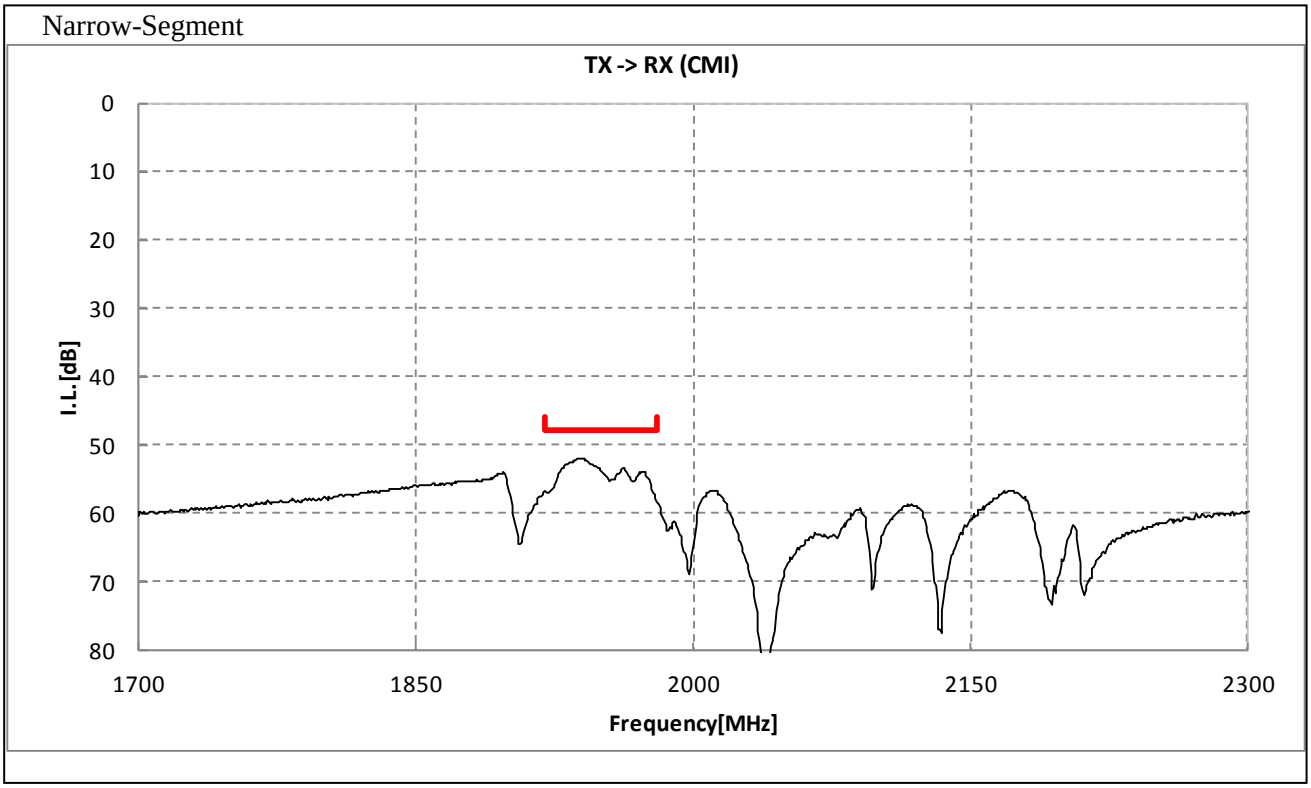
Wide-Segment



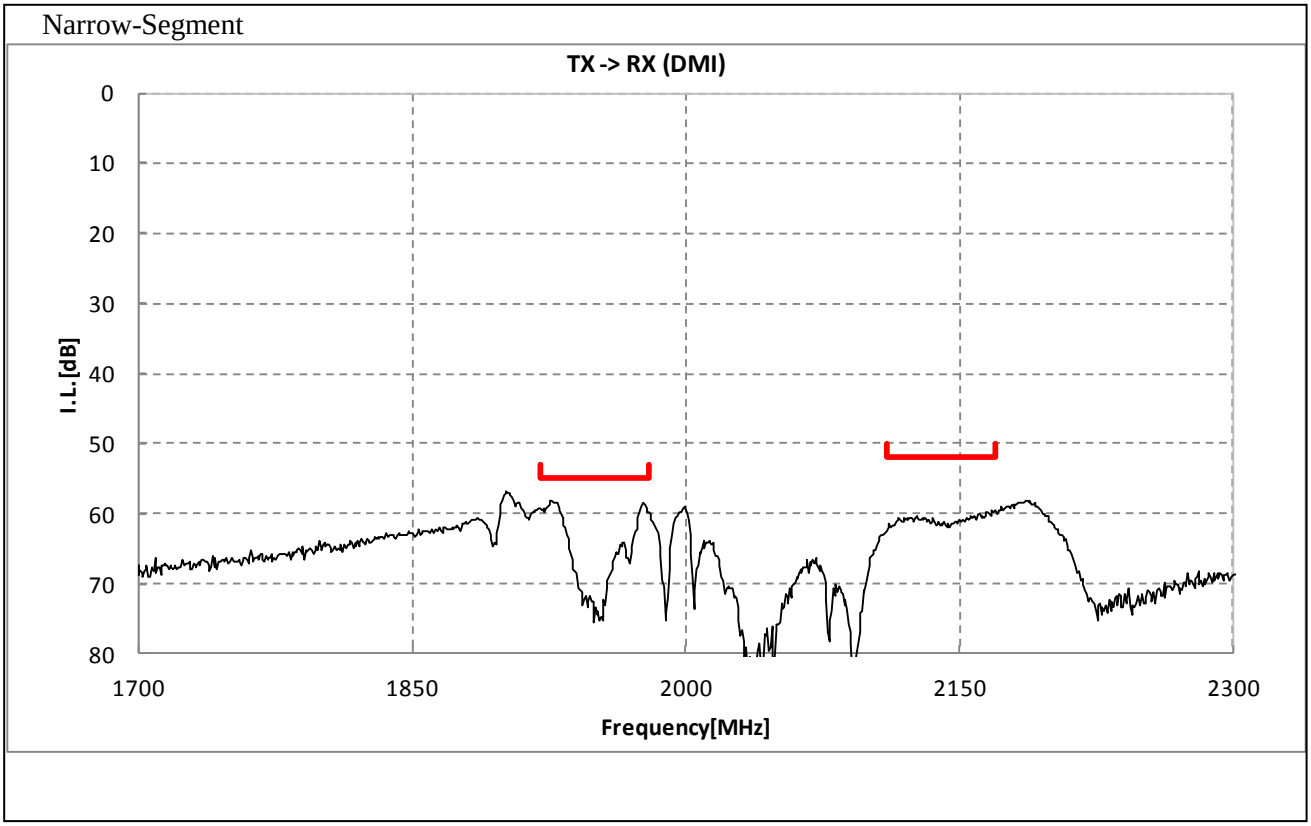
Electrical Characteristic

< TX→RX. >

Narrow-Segment

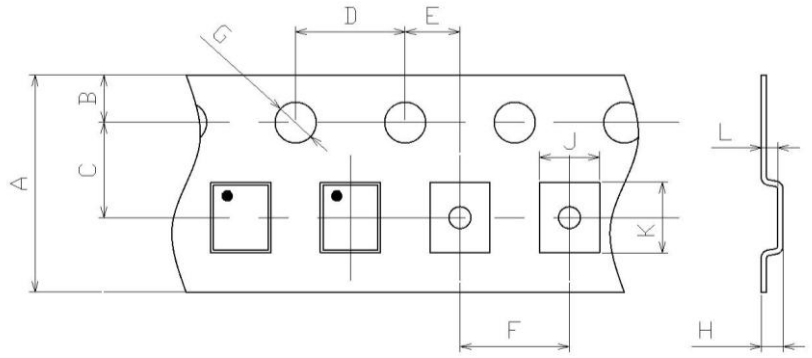


Narrow-Segment



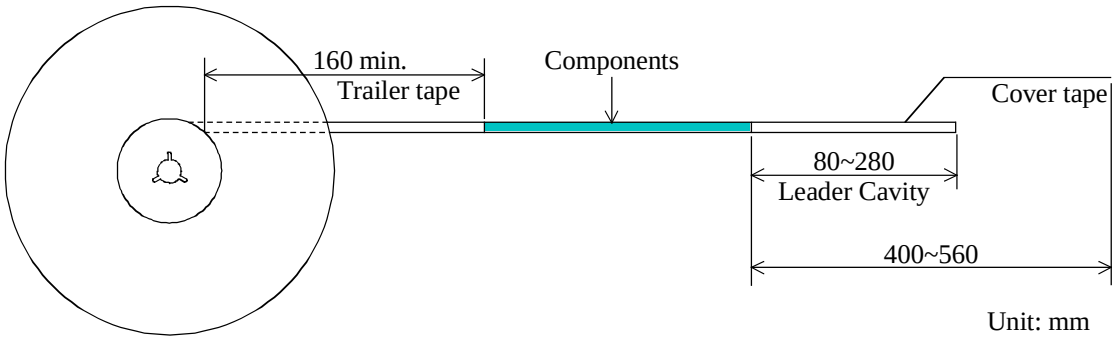
Dimensions of Tape & Reel unit: mm

Carrier Tape

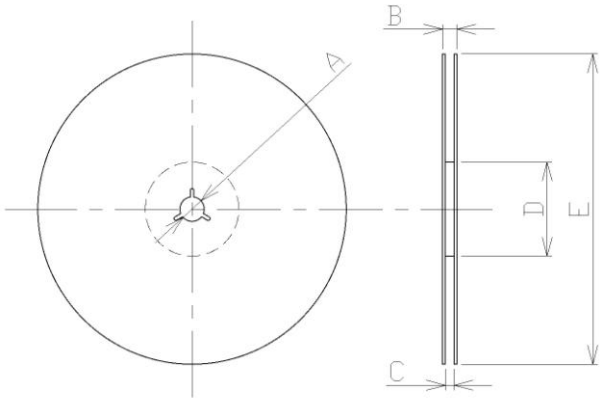


A:	8.0	J:	1.7
B:	1.75	K:	2.1
C:	3.50	L:	0.70
D:	4.0		
E:	2.00		
F:	4.0		
G:	φ1.5		
H:	1.00		

Tape



Reel



φ178Reel		φ330Reel	
A:	φ13.0	A:	φ13.0
B:	13.5max	B:	15.5max
C:	9.0	C:	9.5
D:	φ60	D:	φ100
E:	φ178	E:	φ330

SAYEY1G95HA0F0AR00… 10000pcs (φ330)
SAYEY1G95HA0F0AR05… 5000pcs (φ330)
SAYEY1G95HA0F0AR1S… sample Order (φ178)

Marking Code

Table A: Month Code

2009 2013 2017	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	A	B	C	D	E	F	G	H	J	K	L	M
2010 2014 2018	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	N	P	Q	R	S	T	U	V	W	X	Y	Z
2011 2015 2019	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	a	b	c̄	d	e	f	g	h	j	k	l	m
2012 2016 2020	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	n	p	q	r	s	t	u	v	w	x	y	z

Table B: Date Code

date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
code	A	B	C	D	E	F	G	H	J	K	
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	L	M	N	P	Q	R	S	T	U	V	
date	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	X	Y	Z	a	b	c̄	d	e	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.

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- 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.

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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.

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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.

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・deviation or lapse in function of engineering sample,

・improper use of engineering samples.

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