Datasheet of SAW Device

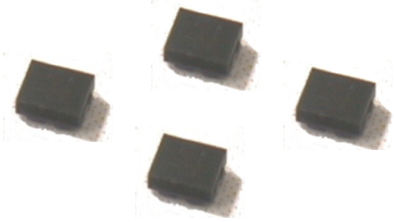
SAW Duplexer

for Band1 / Unbalanced / LR /1814

Murata PN: SAYEY1G95GA0F0A

■ Feature

- ➢ Small Size
- ➢ LTE-A



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

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SAYEY1G95GA0F0A (Band1 / Unbalanced / LR / 1814)

Revision Number	Date	Description
SAYEY1G95GA0F0A_rev. A	Aug-23-2013	■ Initial Release
SAYEY1G95GA0F0A_rev. B	Mar-28-2014	■ Updated for MP
SAYEY1G95GA0F0A_rev. C	Apr-01-2014	
SAYEY1G95GA0F0A_rev. D	Oct-06-2015	■ Updated Feature,Spec Line
SAYEY1G95GA0F0A_rev. E	Sep-15-2016	■ Updated General Information
SAYEY1G95GA0F0A_rev. F	Mar-09-2017	■ Updated General Information
SAYEY1G95GA0F0A_rev. G	Aug-28-2017	■ Updated General Information

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

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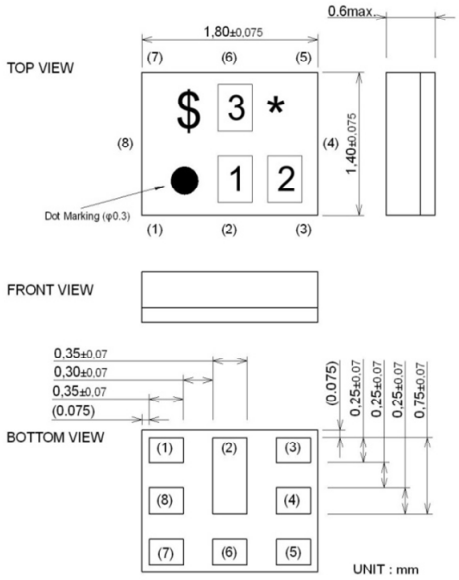
Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions

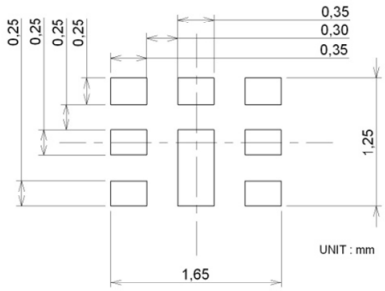


Marking : Laser Printing
* : Month code(Refer to the table A)
$: Date code(Refer to the table B)
1 : 5
2 : Q
3 : A

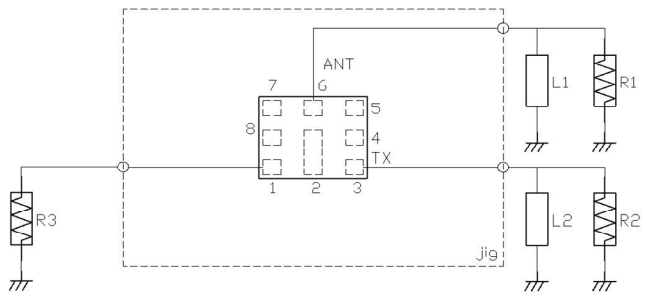
Terminal Number
(6) : Ant
(3) : TX
(1) : RX
Others : GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :2.8nH(Ideal inductor)
	:3nH(LQP03TN) <Reference>
R2 : 50 ohm	L2 :8nH(Ideal inductor)
R3 : 50 ohm	

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SAYEY1G95GA0F0A (Band1 / Unbalanced / LR / 1814)

Electrical Characteristic < TX→ANT. >

TX → ANT.				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Center Frequency					1950		MHz	
Insertion Loss	1920.48	to	1979.52 MHz		1.5	1.8	dB	S21
	1920.48	to	1979.52 MHz		1.5	1.8	dB	+23 to +27deg.C
	1920.	to	1980. MHz		1.5	1.8	dB	S21
	1920.	to	1980. MHz		1.5	1.8	dB	+23 to +27deg.C
	1922.4	to	1977.6 MHz		1.3	1.8	dB_{INT}	Any 3.84MHz
Ripple Deviation	1920.	to	1980. MHz		0.2	0.5	dB	Over any 5MHz in-band
VSWR	1920.	to	1980. MHz		1.3	2.0		TX
	1920.	to	1980. MHz		1.4	2.0		ANT.
Absolute Attenuation	10.	to	1574. MHz	29	32		dB	
	420.	to	494. MHz	41	46		dB	450MHz RX Att.
	815.	to	830. MHz	29	32		dB	B18 TX CA
	824.	to	849. MHz	29	32		dB	B5 TX CA
	830.	to	845. MHz	29	32		dB	B19 TX CA
	843.	to	894. MHz	29	32		dB	JCDMA/CELL RX Att.
	880.	to	915. MHz	29	32		dB	B8 TX CA
	925.	to	960. MHz	29	32		dB	WLAN and DL CA
	1226.	to	1250. MHz	30	34		dB	GPS L2
	1447.9	to	1462.9 MHz	30	38		dB	B21 TX CA
	1475.	to	1496. MHz	36	39		dB	B11 RX band
	1496.	to	1511. MHz	36	40		dB	B21 RX band
	1559.	to	1563. MHz	38	43		dB	Compass
	1565.42	to	1573.37 MHz	38	43		dB	Wideband GPS lower side
	1573.37	to	1577.47 MHz	38	43		dB	Regular GPS main lobe
	1577.47	to	1585.42 MHz	38	43		dB	Wideband GPS upper side
	1597.55	to	1605.89 MHz	40	45		dB	GLONASS
	1605.88	to	1805. MHz	25	36		dB	
	1805.	to	1865. MHz	21	26		dB	Protected DCS band
	1865.	to	1880. MHz	10	25		dB	Protected DCS band
	1880.	to	1895. MHz	5.0	20.0		dB	
	2010.	to	2025. MHz	20	22		dB	+15 to +85deg.C
	2110.	to	2170. MHz	42	46		dB	IMT Att.
	2400.	to	2500. MHz	40	45		dB	ISM2.4
	2620.	to	2690. MHz	33	38		dB	Protected 2.6GHz band
	3840.	to	3960. MHz	23	28		dB	2f
	4900.	to	5950. MHz	16	21		dB	3f
	4905.	to	5845. MHz	16	21		dB	WLAN 801.11a
	7680.	to	7920. MHz	10	15		dB	4f
	9600.	to	9900. MHz	9.8	12.0		dB	5f
	11520.	to	11880. MHz	9.8	15.0		dB	6f

* Typical value at 25±2deg.C

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SAYEY1G95GA0F0A (Band1 / Unbalanced / LR / 1814)

Electrical Characteristic < ANT.→RX >

ANT. → RX			Characteristics (-20 to +85 deg.C)			Unit	Note
			min.	typ.*	max.		
Center Frequency				2140		MHz	
Insertion Loss	2110.48 to 2169.52	MHz		1.8	2.3	dB	
	2110.48 to 2169.52	MHz		1.8	2.2	dB	+23 to +27deg.C
	2110. to 2170.	MHz		1.8	2.3	dB	
	2110. to 2170.	MHz		1.8	2.2	dB	+23 to +27deg.C
Ripple Deviation	2110. to 2170.	MHz		0.3	1.0	dB	Over any 5MHz in-band
VSWR	2110. to 2170.	MHz		1.7	2.0		RX
	2110. to 2170.	MHz		1.7	2.0		ANT.
Absolute Attenuation	1. to 1920.	MHz	32	41		dB	
	190.	MHz	50	79		dB	RX-TX
	718. to 748.	MHz	40	56		dB	B28-B TX CA
	814. to 849.	MHz	40	54		dB	B26 TX CA
	880. to 915.	MHz	40	53		dB	B8 TX CA
	1427. to 1447.	MHz	40	46		dB	B11 TX CA
	1447. to 1463.	MHz	40	45		dB	B21 TX CA
	1730. to 1790.	MHz	39	44		dB	2TX-RX
	1710. to 1785.	MHz	37	42		dB	B3 TX CA
	1920. to 1980.	MHz	45	51		dB	TX
	1980. to 2015.	MHz	15	46		dB	
	2015. to 2075.	MHz	7.0	10.0		dB	(RX+TX)/2
	2255. to 6130.	MHz	27	32		dB	
	2400. to 2500.	MHz	30	35		dB	ISM2.4
	2500. to 2570.	MHz	38	43		dB	B7 TX CA
	4030. to 4150.	MHz	38	43		dB	RX+TX
	4220. to 4340.	MHz	37	42		dB	2f
	4340. to 13025.	MHz	15	19		dB	
	4900. to 5950.	MHz	33	38		dB	ISM 5G
	5950. to 6130.	MHz	32	37		dB	RX+2TX
	6130. to 6330.	MHz	32	37		dB	
	6330. to 6510.	MHz	32	37		dB	3f
	8440. to 8680.	MHz	20	27		dB	4f
	10550. to 10850.	MHz	20	27		dB	5f
	12660. to 13020.	MHz	15	19		dB	6f

* Typical value at 25±2deg.C

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Electrical Characteristic < TX→RX. >

TX → RX		Characteristics (-20 to +85 deg.C)			Unit	Note
		min.	typ.*	max.		
Isolation						
	1574. to 1577. MHz	40	77		dB	
	1920. to 1980. MHz	55	58		dB	TX
	1920.48 to 1979.52 MHz	55	58		dB	TX
	1922.4 to 1977.6 MHz	55	58		dB_{INT}	WCDMA TX Att./Any3.84MHz
	2110. to 2170. MHz	51	54		dB	RX
	2110.48 to 2169.52 MHz	51	54		dB	RX
	2112.4 to 2167.6 MHz	51	54		dB_{INT}	WCDMA RX Att./Any3.84MHz
	3830. to 3970. MHz	30	52		dB	TX 2nd harmonic Att.
	5750. to 5950. MHz	30	61		dB	TX 3rd harmonic Att.

* Typical value at 25±2deg.C

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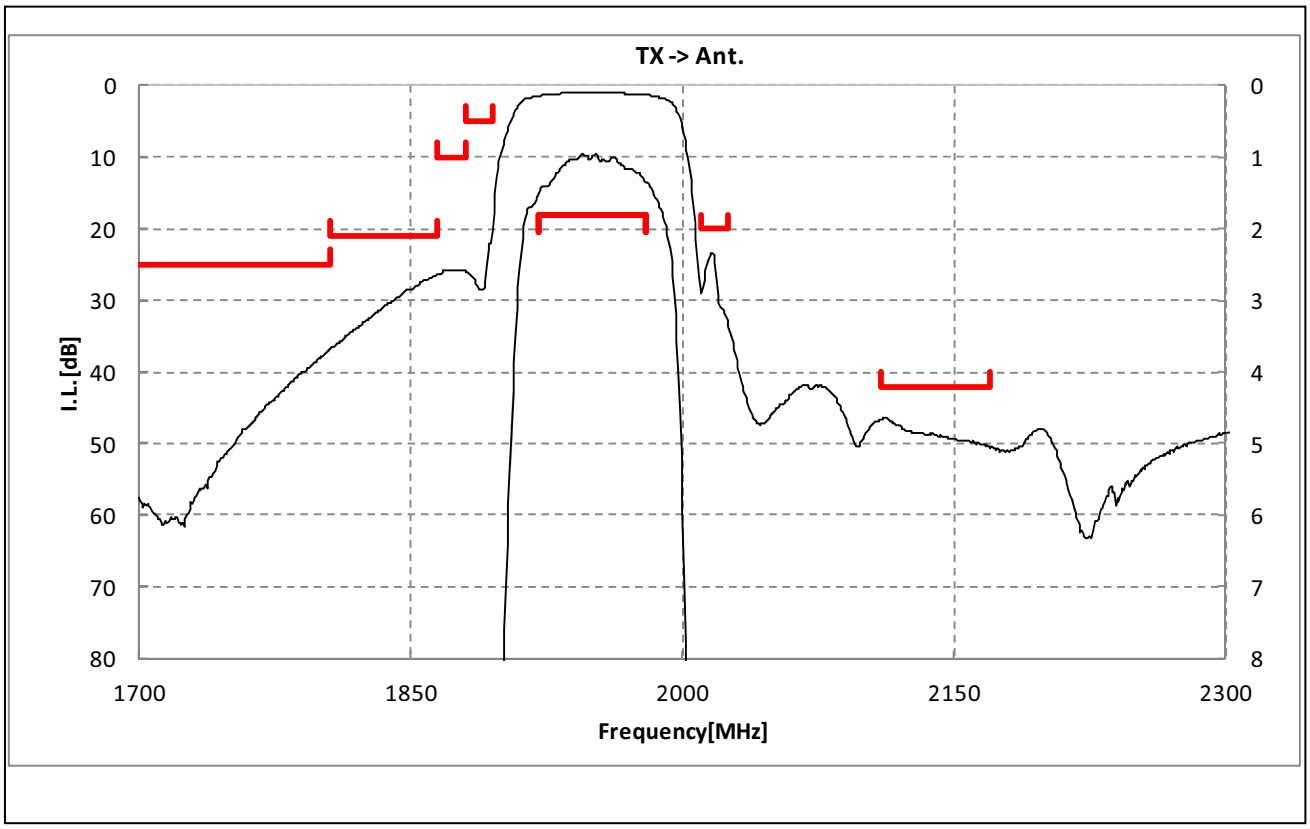
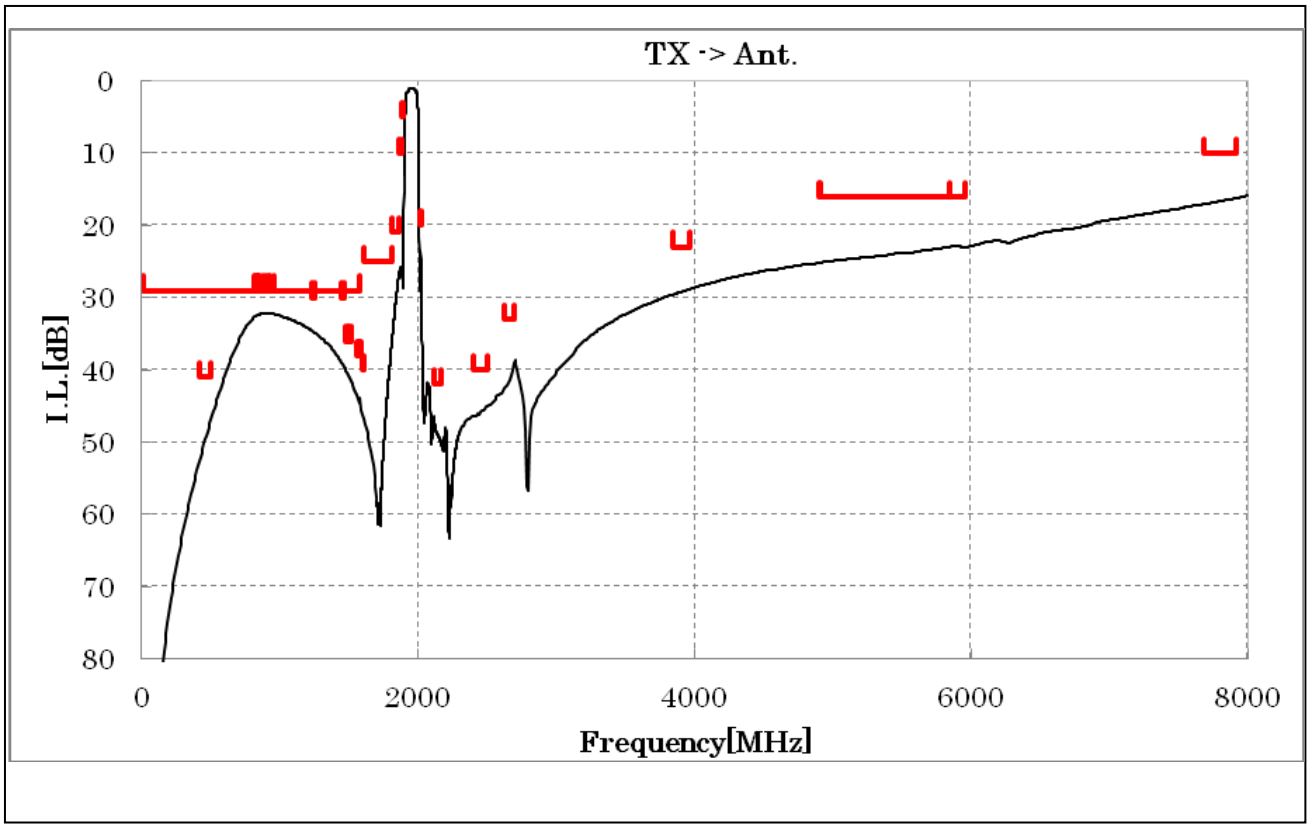
Electrical Characteristic

< TX→ANT. >





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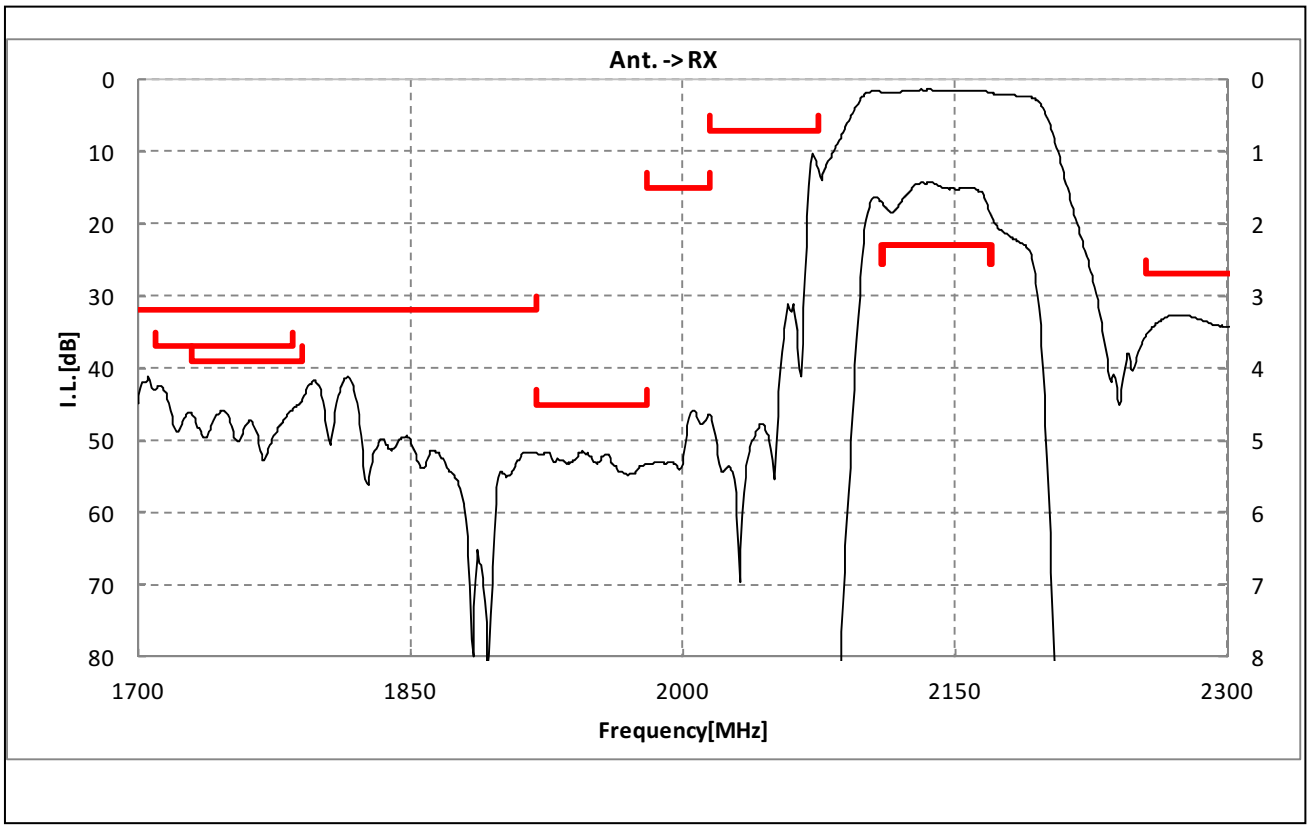
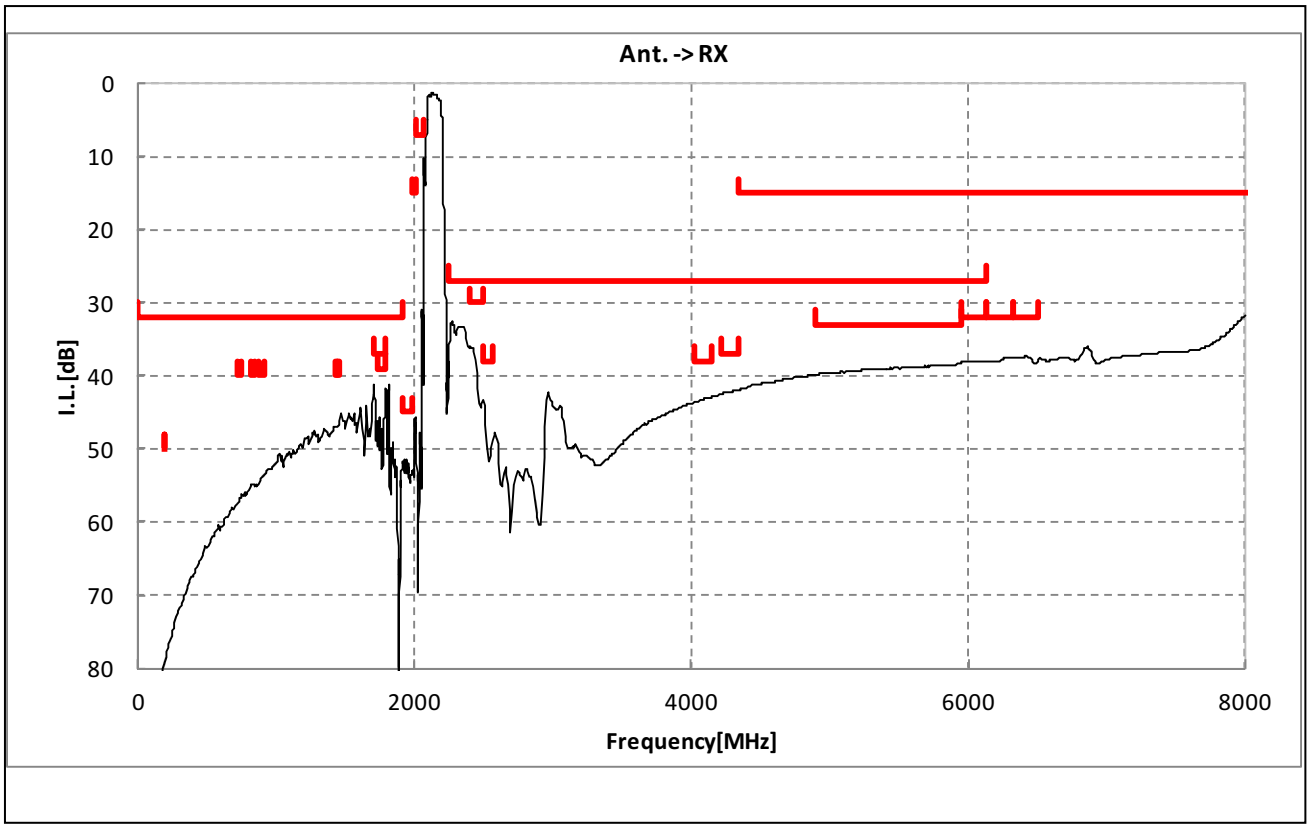
Electrical Characteristic

< ANT.→RX >





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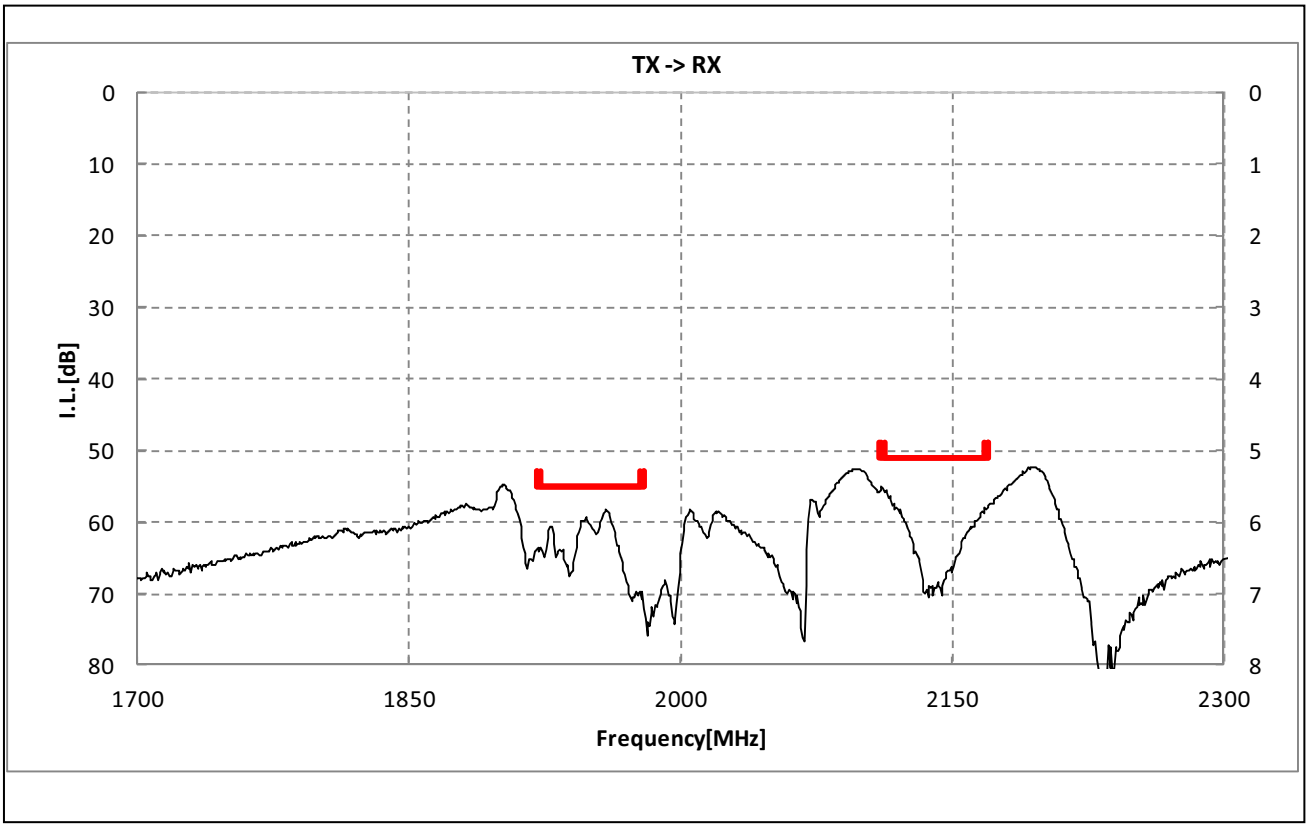
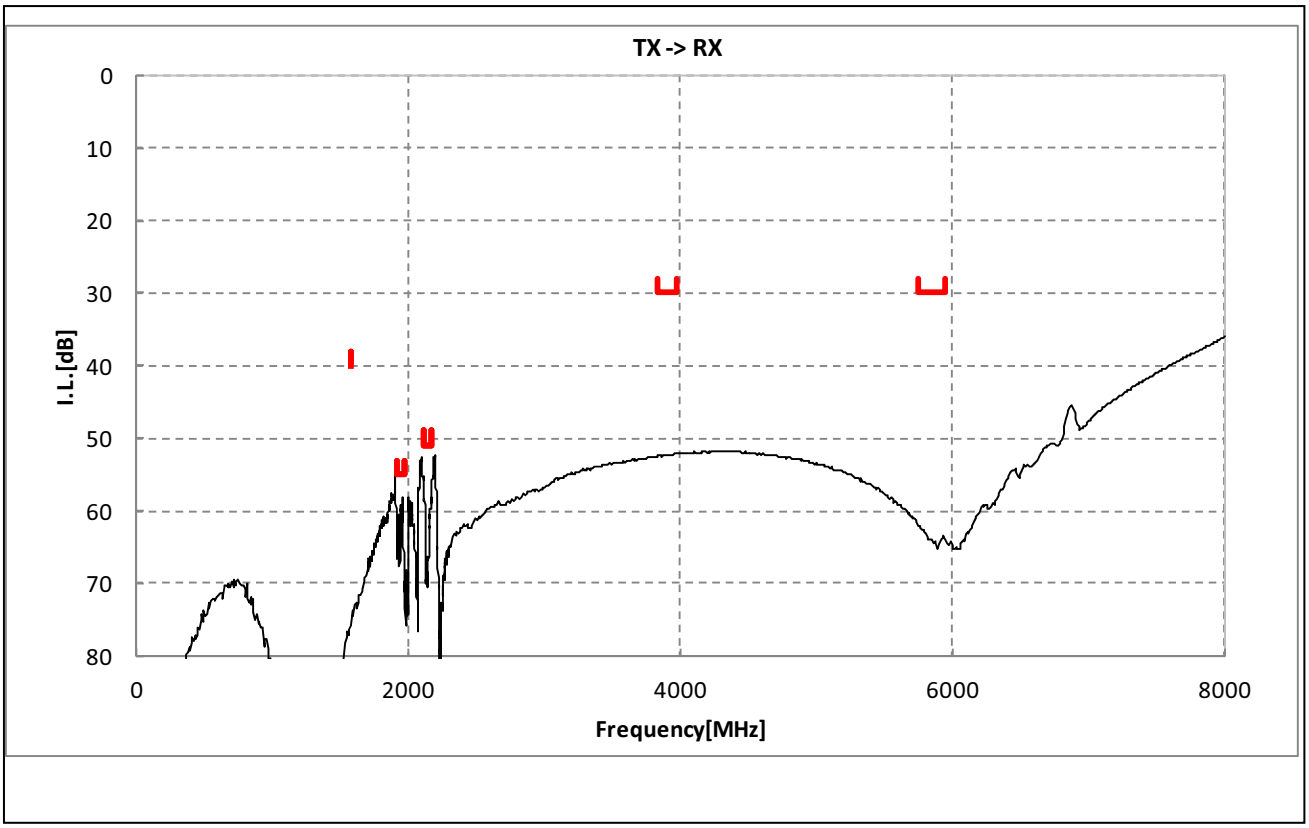
Electrical Characteristic

< TX→RX. >





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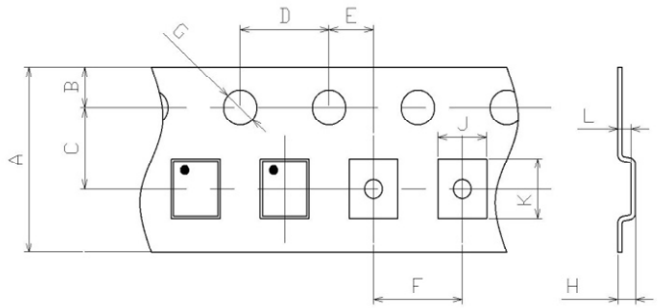
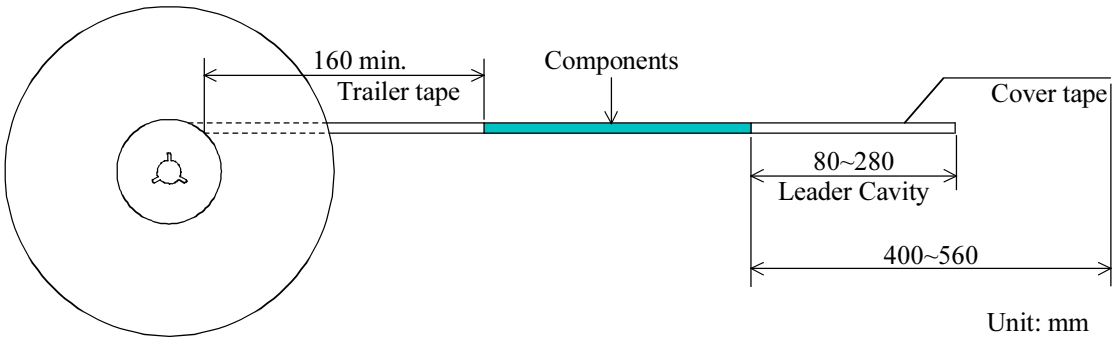
Dimensions of Tape & Reel unit: mm

Carrier Tape

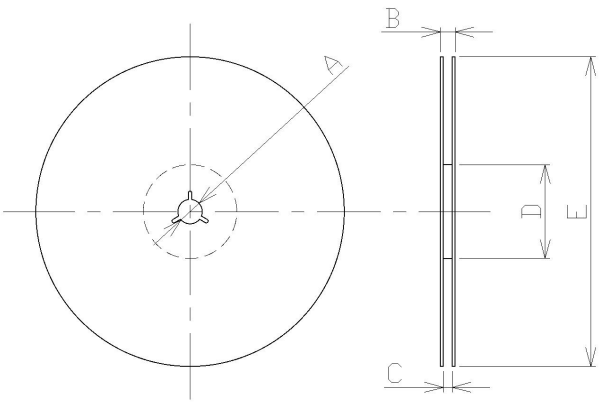


A:	8.0	J:	1.7
B:	1.75	K:	2.1
C:	3.50	L:	0.70
D:	4.0		
E:	2.00		
F:	4.0		
G:	φ1.5		
H:	1.00		

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

SAYEY1G95GA0F0AR00… 10000pcs (φ330)
SAYEY1G95GA0F0AR1S… Sample Order (φ178/330)

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Marking Code

Table A: Month Code

2013 2017 2021	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	A	B	C	D	E	F	G	H	J	K	L	M
2014 2018 2022	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	N	P	Q	R	S	T	U	V	W	X	Y	Z
2015 2019 2023	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	a	b	c̄	d	e	f	g	h	j	k	l	m
2016 2020 2024	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.
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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.

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