

Datasheet of SAW Device

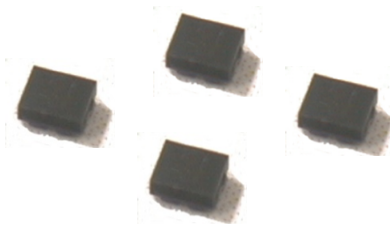
SAW Duplexer

for Band27 / Unbalanced / LR /1814

Murata PN: SAYEY815MBA0F0A

■ Feature

- Low Insertion Loss
- High Isolation
- 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.

SAYEY815MBA0F0A (Band27 / Unbalanced / LR / 1814)

Revision Number	Date	Description
SAYEY815MBA0F0A_rev. A	Nov-22-2013	■ Initial Release
SAYEY815MBA0F0A_rev. B	Sep-12-2014	■ Updated Specification
SAYEY815MBA0F0A_rev. C	Feb-10-2015	■ Updated for MP
SAYEY815MBA0F0A_rev. D	Sep-04-2015	■ Updated Feature
SAYEY815MBA0F0A_rev. E	Sep-08-2015	■ Updated Feature
SAYEY815MBA0F0A_rev. F	Feb-01-2016	■ Updated Matching Circuit
SAYEY815MBA0F0A_rev. G	Aug-26-2016	■ Updated General Information
SAYEY815MBA0F0A_rev. H	Aug-04-2017	■ Updated General Information
SAYEY815MBA0F0A_rev. I	Nov-10-2017	■ Updated SPEC

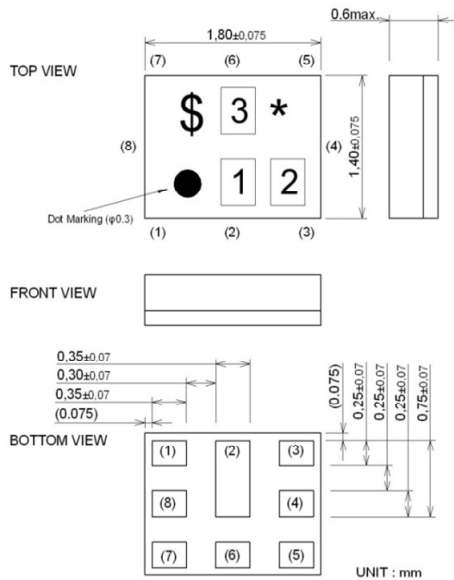
- Operating temperature : -20 to +85 deg.C
- Storage temperature : -40 to +85 deg.C
- Input Power : +30 dBm 5000 h +50 deg.C
- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)
- Minimum Resistance between the terminals : 10M ohm
- RoHS compliance : Yes
- ESD (ElectroStatic Discharge) sensitive device

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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 : 6

2 : E

3 : A

Terminal Number

(6) : Ant

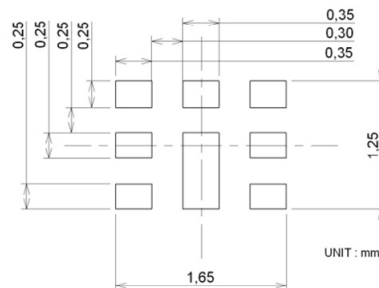
(3) : TX

(1) : RX

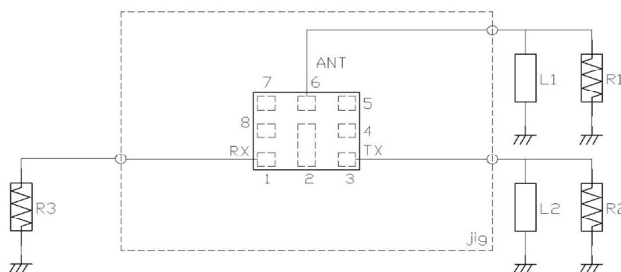
Others : GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :7nH(Ideal inductor)
	:8.2nH(LQP0603TN8N2)
	<Reference>
R2 : 50 ohm	L2 :12nH(Ideal inductor)
R3 : 50 ohm	

SAYEY815MBA0F0A (Band27 / Unbalanced / LR / 1814)

Electrical Characteristic < TX→ANT. >

Tx → ANT.		Characteristics (-20 to +85 deg.C)			Unit	Note
		min.	typ.*	max.		
Center Frequency			815.5		MHz	
Insertion Loss	807. to 824. MHz		1.3	1.8	dB	
	809.5 to 821.5 MHz		1.1	1.8	dB _{INT}	Any 4.5MHz
Ripple Deviation	807. to 824. MHz		0.4	1.2	dB	
VSWR	807. to 824. MHz		1.3	2.0		Tx/Ant.
Absolute Attenuation	10. to 420. MHz	30	47		dB	
	420. to 494. MHz	35	42		dB	450MHz Rx for SHDR
	494. to 701. MHz	27	33		dB	
	701. to 728. MHz	27	33		dB	
	728. to 764. MHz	27	33		dB	700MHz Rx for SHDR
	764. to 787. MHz	32	37		dB	
	852. to 869. MHz	46	57		dB	Rx
	869. to 894. MHz	32	37		dB	B5 Rx
	1559. to 1563. MHz	40	44		dB	COMPASS
	1565.42 to 1573.37 MHz	40	44		dB	Lower GPS
	1573.37 to 1577.47 MHz	40	45		dB	Regular GPS
	1577.47 to 1585.42 MHz	40	45		dB	Upper GPS
	1597.55 to 1605.89 MHz	40	45		dB	GLONASS
	1614. to 1648. MHz	30	45		dB	2f
	1805. to 1880. MHz	30	44		dB	B3 Rx
	1930. to 1990. MHz	30	42		dB	B2 Rx
	2110. to 2170. MHz	30	40		dB	B1 Rx
	2400. to 2483. MHz	32	37		dB	ISM2.4, 3f
	3228. to 3296. MHz	20	32		dB	4f
	4035. to 4120. MHz	20	28		dB	5f
	4842. to 5950. MHz	12	19		dB	ISM 5G, 6f, 7f
6456. to 6592. MHz	10	22		dB	8f	
7263. to 7416. MHz	10	32		dB	9f	
8070. to 8240. MHz	10	42		dB	10f	
8877. to 9064. MHz	10	27		dB	11f	
9684. to 9888. MHz	5.0	15.0		dB	12f	
10491. to 10712. MHz	3.0	9.0		dB	13f	
11298. to 11536. MHz	3.0	10.0		dB	14f	
12105. to 12360. MHz	3.0	14.0		dB	15f	

* Typical value at 25±2deg.C

SAYEY815MBA0F0A (Band27 / Unbalanced / LR / 1814)

Electrical Characteristic < ANT. → RX >

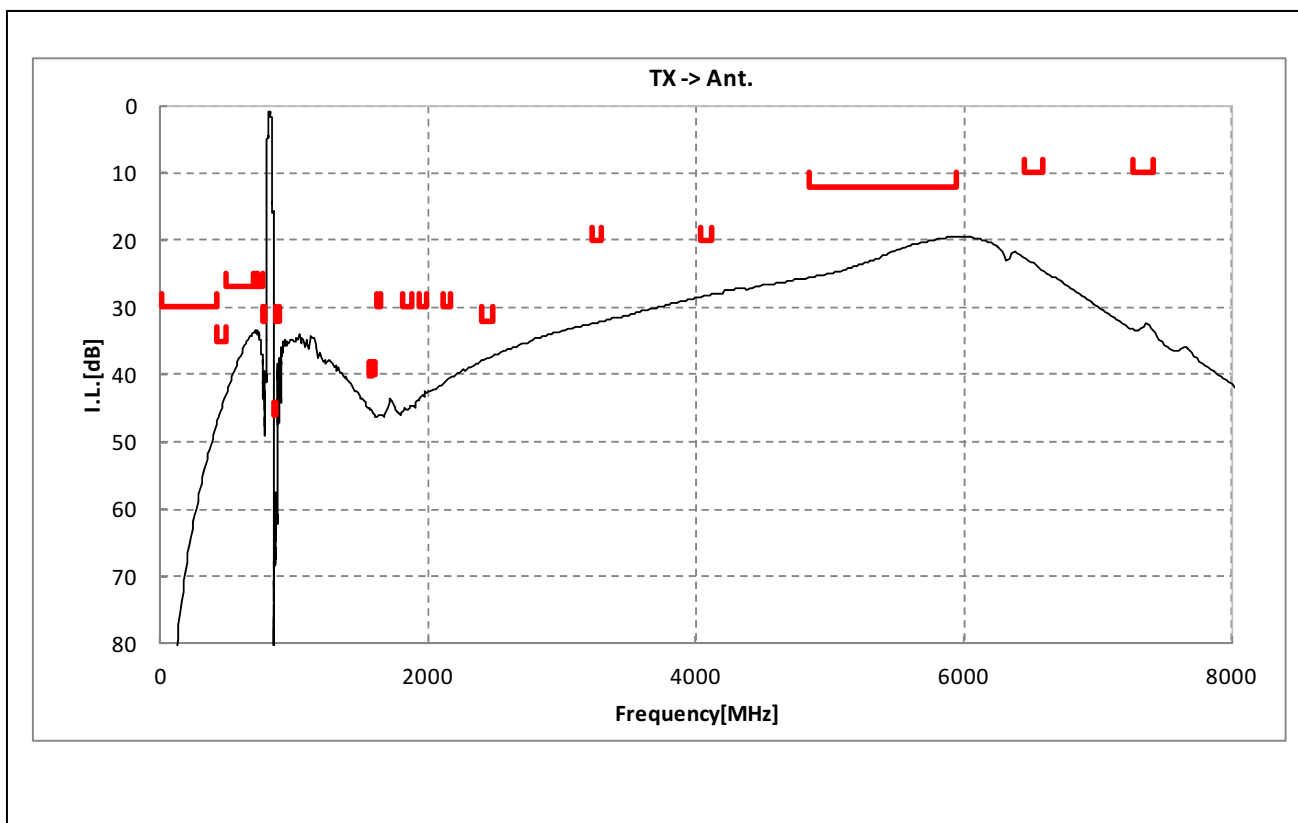
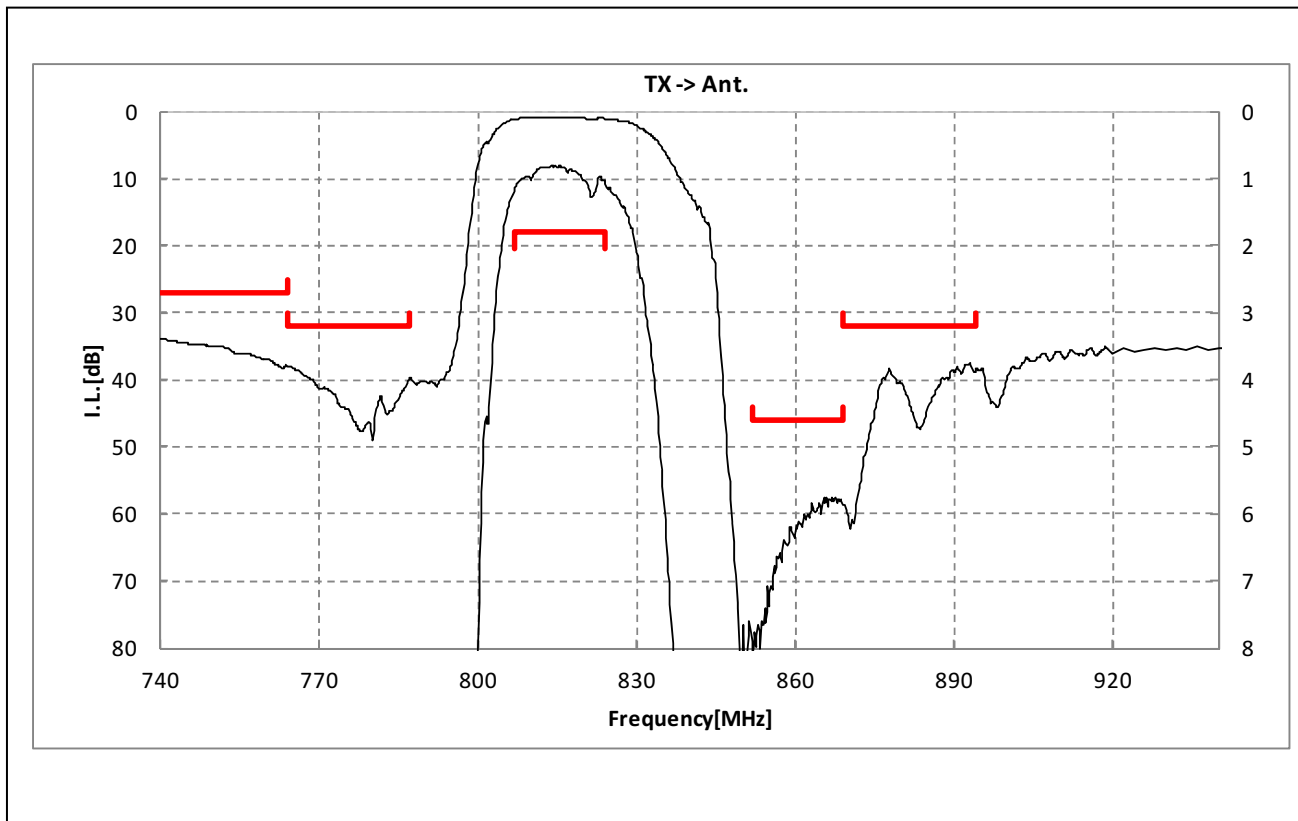
Ant→Rx		Characteristics (-20 to +85 deg.C)			Unit	Note
		min.	typ.*	max.		
		Center Frequency				
Insertion Loss	852. to 869. MHz		1.5	2.0	dB	
	854.5 to 866.5 MHz		1.4	2.0	dB _{INT}	Any 4.5MHz
Ripple Deviation	852. to 869. MHz		0.2	1.2	dB	
VSWR	852. to 869. MHz		1.5	2.0		Rx/Ant.
Absolute Attenuation	10. to 447. MHz	45	61		dB	
	45. MHz	50	99		dB	Rx - Tx
	447. to 779. MHz	40	53		dB	
	762. to 779. MHz	45	55		dB	2Tx - Rx
	807. to 824. MHz	46	58		dB	Tx
	829.5 to 846.5 MHz	1.2	3.3		dB	(Rx + Tx) / 2
	884. to 954. MHz	1.2	6.0		dB	B8 Tx
	1659. to 1693. MHz	45	64		dB	Rx + Tx
	1710. to 1785. MHz	45	65		dB	B3 / 4 Tx
	1704. to 1738. MHz	45	65		dB	2f
	1850. to 1920. MHz	45	68		dB	B2 Tx
	1920. to 1980. MHz	45	69		dB	B1 Tx
	1980. to 2400. MHz	50	64		dB	
	2305. to 2315. MHz	50	65		dB	B30 Tx
	2400. to 2500. MHz	50	63		dB	ISM2.4
	2511. to 2562. MHz	50	60		dB	Rx + 2Tx
	2556. to 2607. MHz	50	60		dB	3f
	3408. to 3476. MHz	45	59		dB	4f
	4260. to 4345. MHz	40	61		dB	5f
	4900. to 5950. MHz	30	41		dB	ISM 5G, 6f
	5964. to 6083. MHz	25	39		dB	7f
	6816. to 6952. MHz	25	40		dB	8f
	7668. to 7821. MHz	20	43		dB	9f
	8520. to 8690. MHz	15	44		dB	10f
9372. to 9559. MHz	15	44		dB	11f	
10224. to 10428. MHz	15	40		dB	12f	
11076. to 11297. MHz	15	42		dB	13f	
11928. to 12166. MHz	15	36		dB	14f	

* Typical value at 25±2deg.C

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Electrical Characteristic

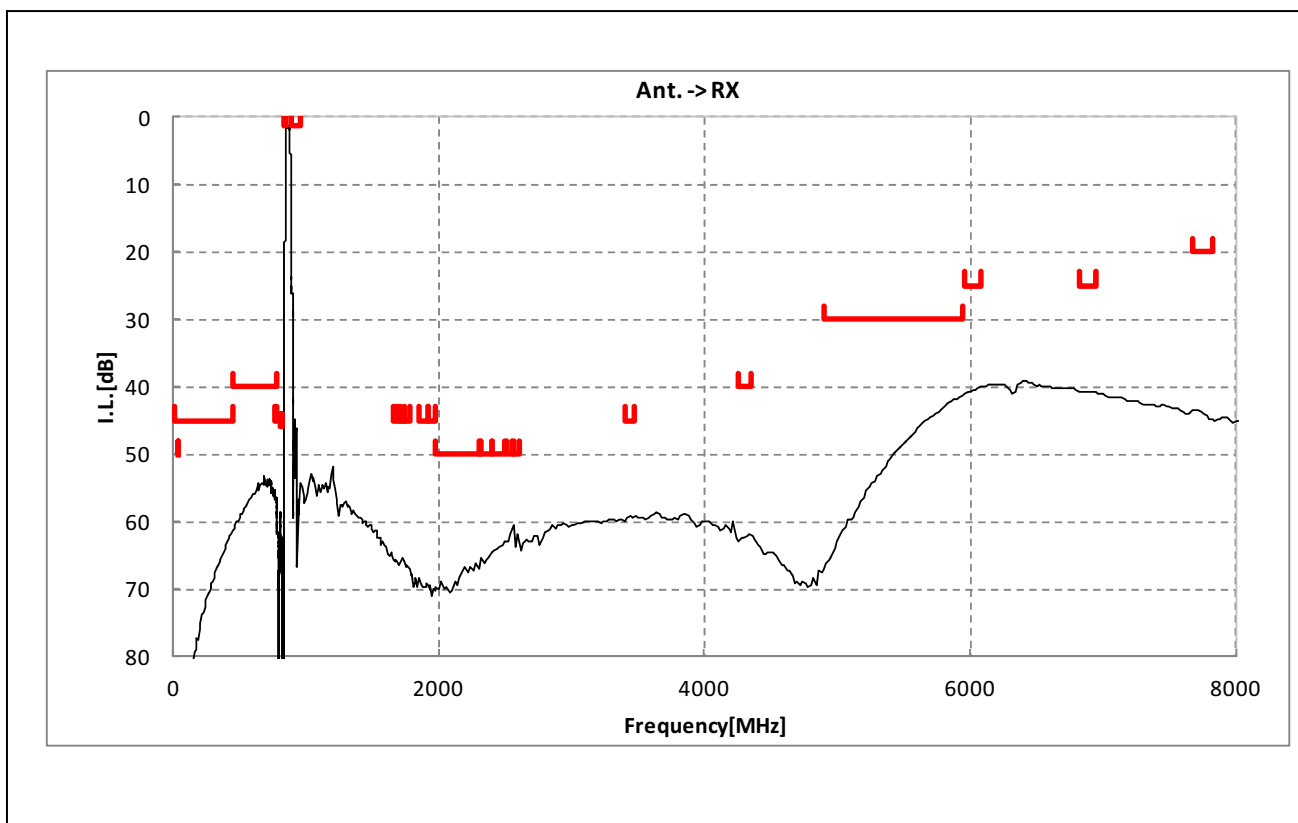
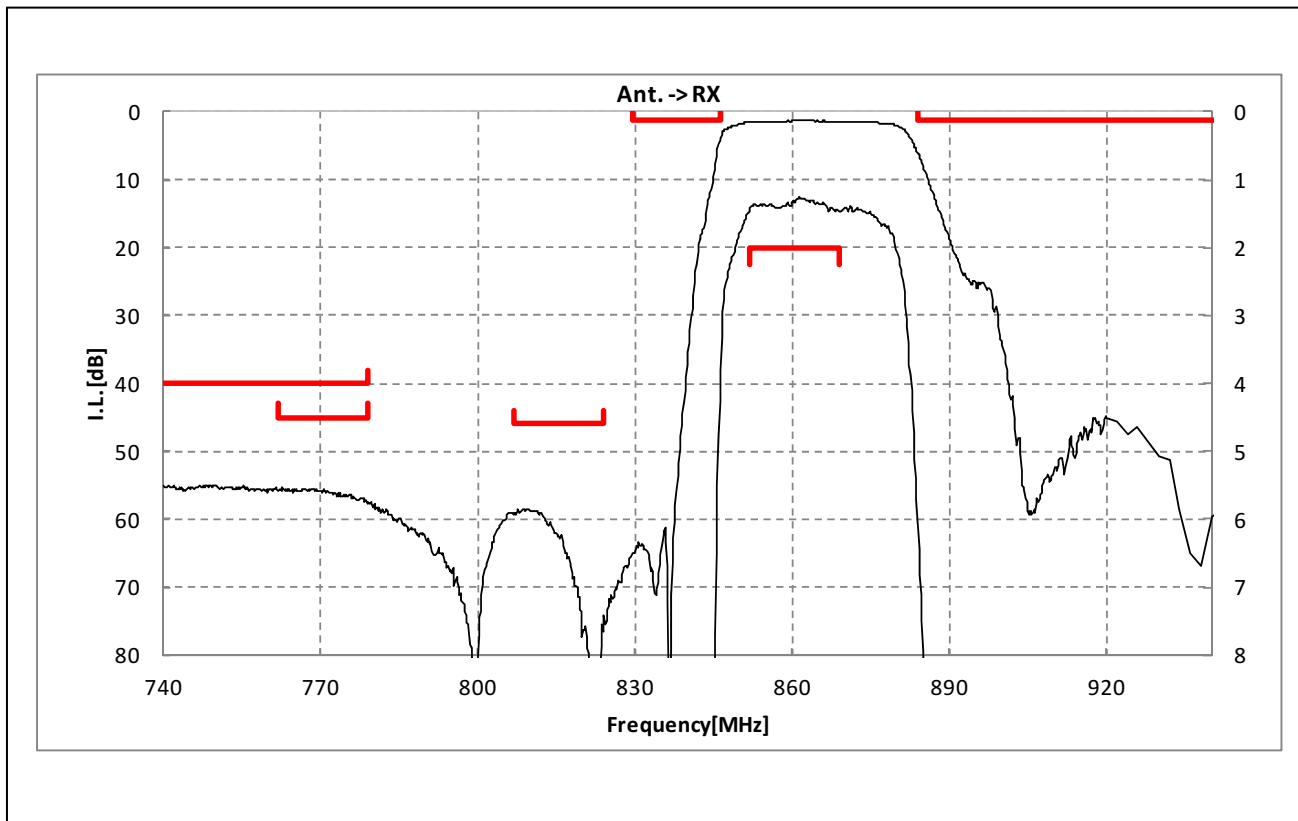
< TX→ANT. >



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Electrical Characteristic

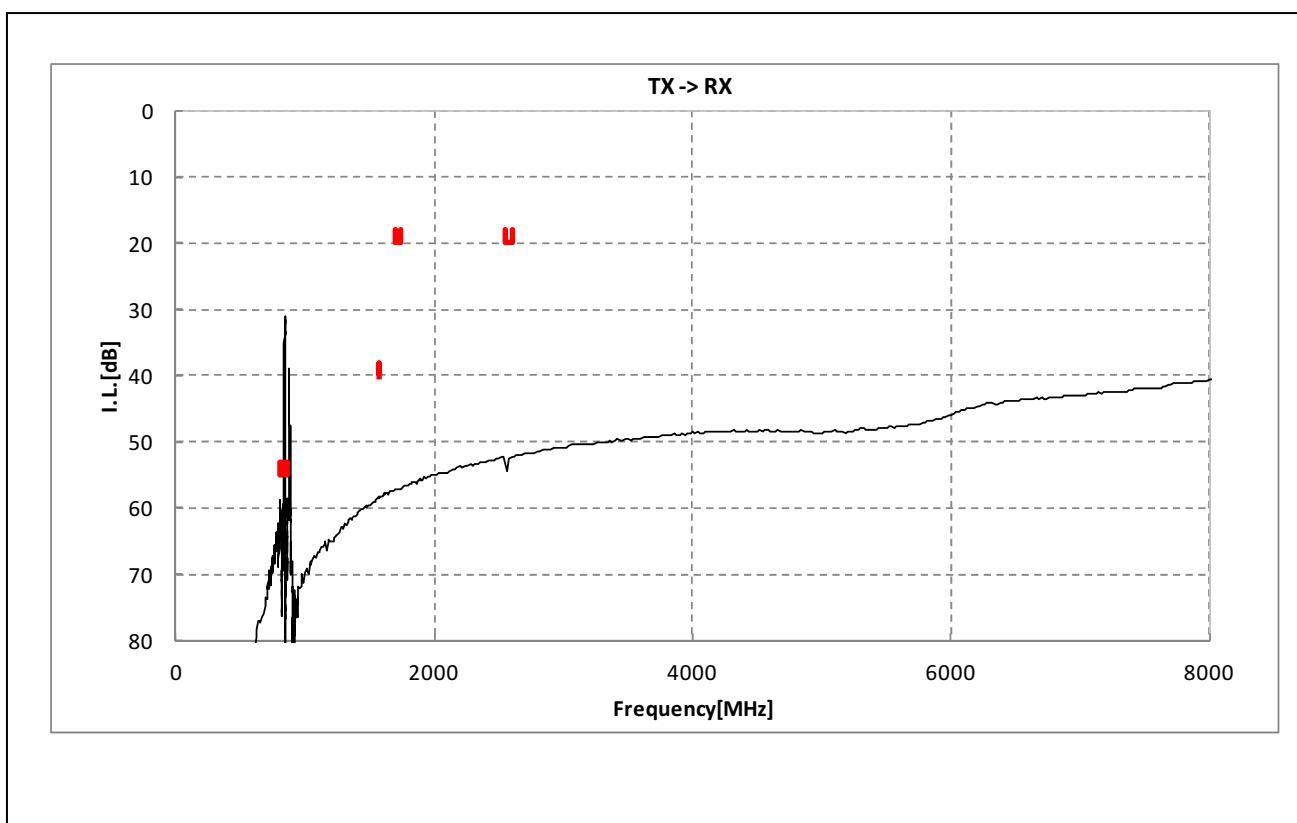
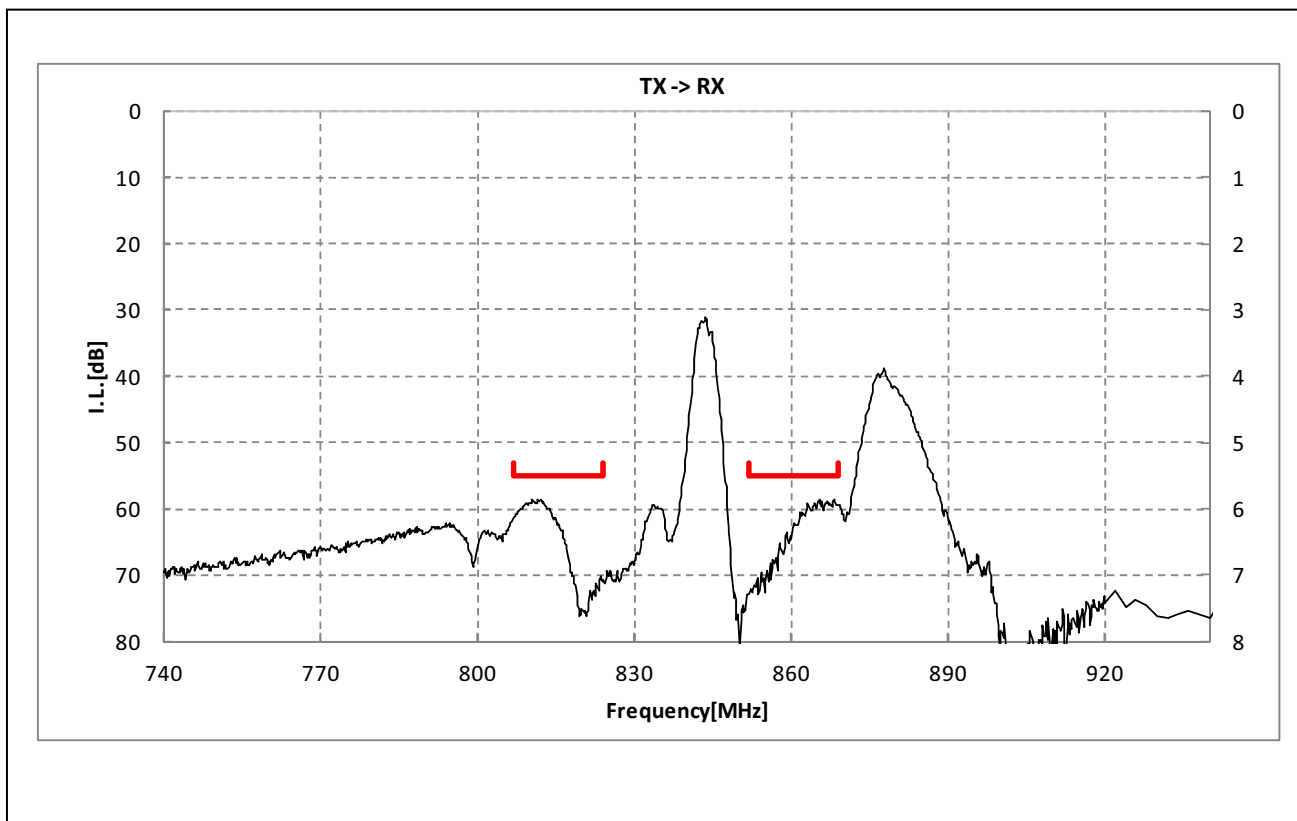
< ANT. → RX >



SAYEY815MBA0F0A (Band27 / Unbalanced / LR / 1814)

Electrical Characteristic

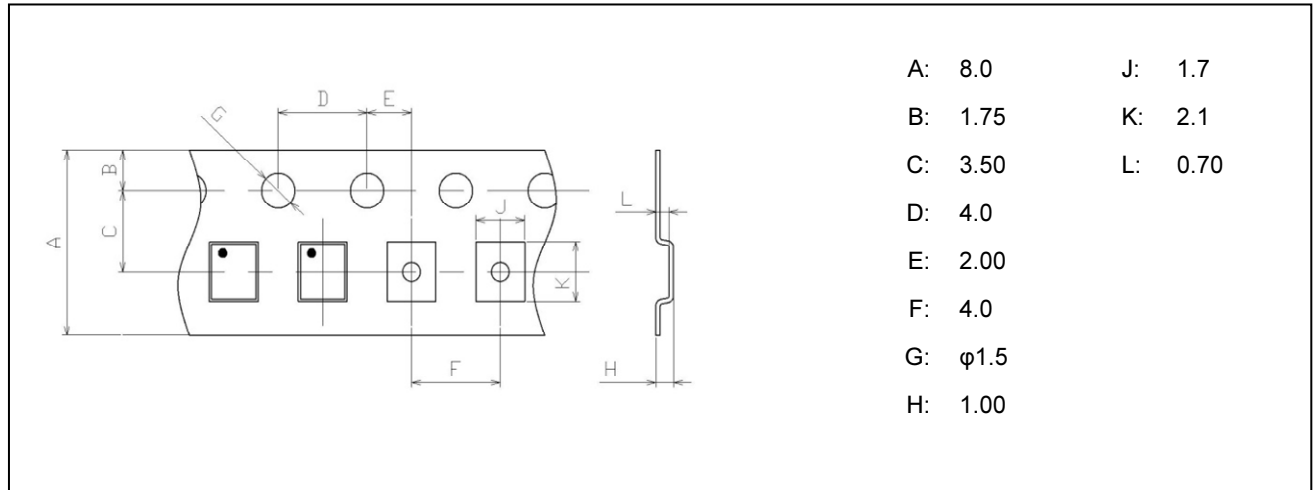
< TX→RX. >



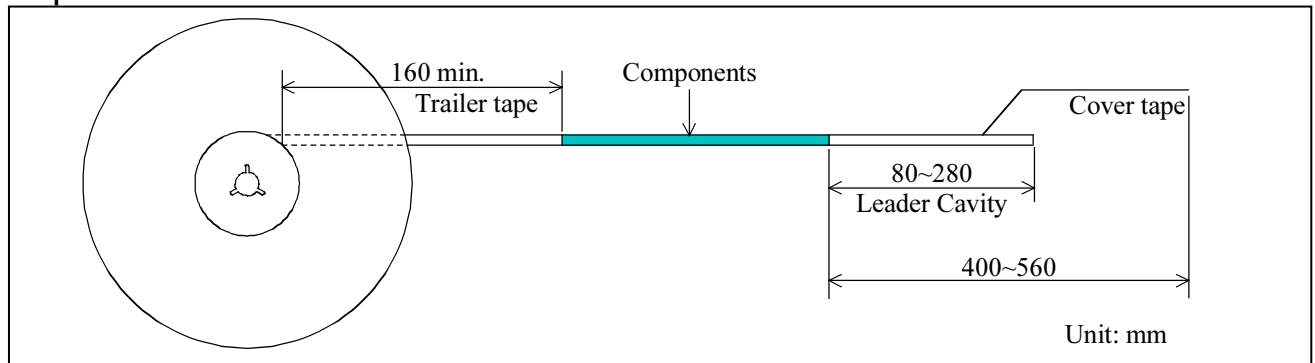
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Dimensions of Tape & Reel unit: mm

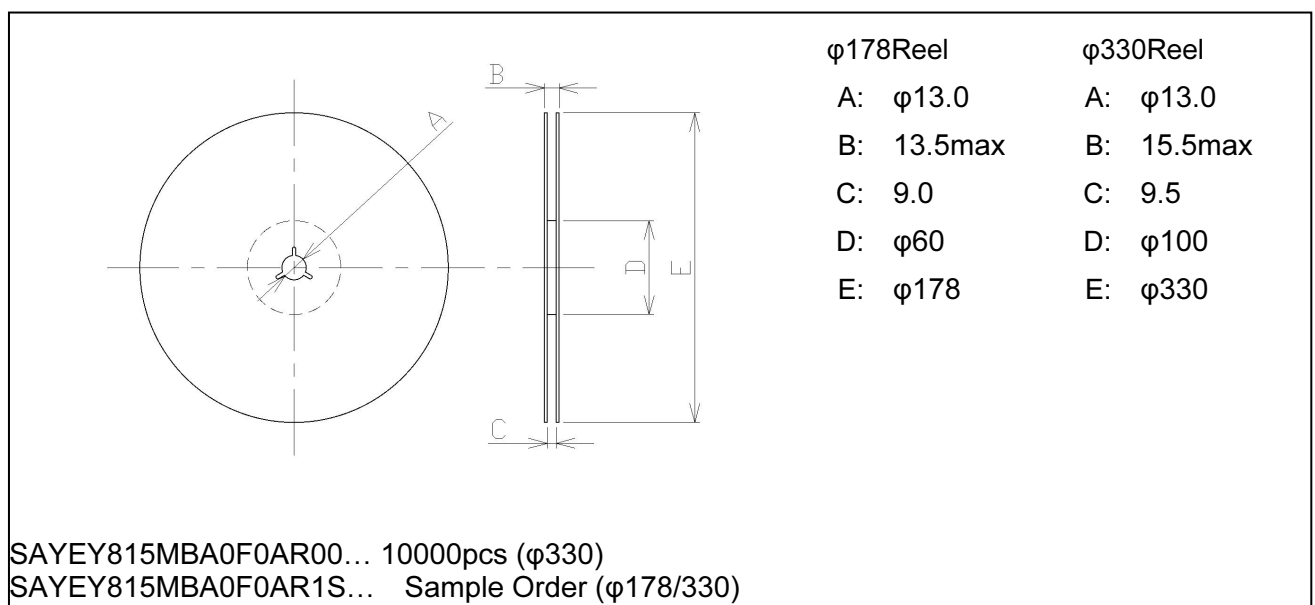
Carrier Tape



Tape



Reel



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	i	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.

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 surge 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.

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