Datasheet of SAW Device

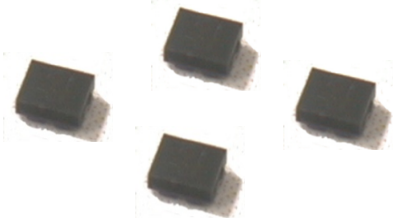
SAW Duplexer

for Band5 / Balanced / LR /1814

Murata PN: SAYEY836MCA0F0A

■ Feature

- Low Insertion Loss
- 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.

SAYEY836MCA0F0A (Band5 / Balanced / LR / 1814)

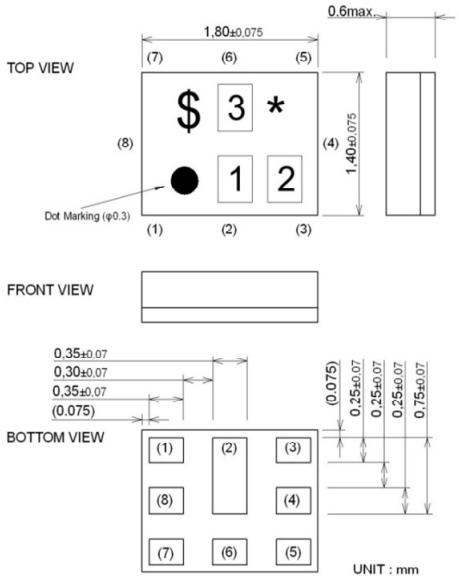
Revision Number	Date	Description
SAYEY836MCA0F0A_rev. A	Jul-11-2013	■ Initial Release
SAYEY836MCA0F0A_rev. B	Aug-07-2013	■ Updated SPEC
SAYEY836MCA0F0A_rev. C	Feb-14-2014	■ Updated SPEC
SAYEY836MCA0F0A_rev. D	Apr-10-2014	■ Updated for MP
SAYEY836MCA0F0A_rev. E	Aug-21-2014	■ Updated electric performance(Tx Att.)
SAYEY836MCA0F0A_rev. F	Sep-03-2015	■ Updated Feature
SAYEY836MCA0F0A_rev. G	Sep-02-2016	■ Updated General Information
SAYEY836MCA0F0A_rev. H	May-23-2017	■ Updated General Information
SAYEY836MCA0F0A_rev. I	Jun-22-2017	■ Updated General Information
SAYEY836MCA0F0A_rev. J	Oct-24-2017	■ Updated Measurement Circuit

- 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

Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions

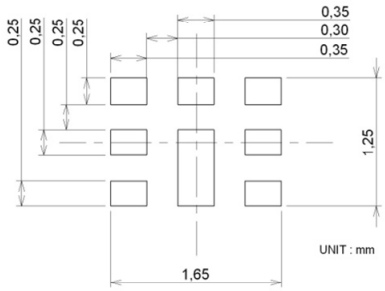


Marking : Laser Printing
* : Month code(Refer to the table A)
$: Date code(Refer to the table B)
1 : 4
2 : X
3 : A

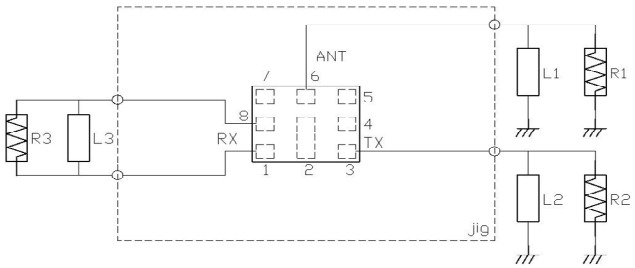
Terminal Number
(6) : Ant
(3) : TX
(1)(8) : RX
Others : GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :7.2nH(Ideal inductor)
	:8.1nH(LQP03TN8N1) <Reference>
R2 : 50 ohm	L2 :25nH(Ideal inductor)
R3 : 100 ohm	L3 :30nH(Ideal inductor)

SAYEY836MCA0F0A (Band5 / Balanced / LR / 1814)

Electrical Characteristic < TX→ANT. >

TX → ANT.				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Center Frequency					836.5		MHz	
Insertion Loss	824.	to	849. MHz		1.4	1.9	dB	
	824.	to	849. MHz		1.4	1.7	dB	+23 to +27deg.C
	826.4	to	846.6 MHz		1.2	1.7	dB_{INT}	Any 3.84MHz
Ripple Deviation	824.	to	849. MHz		0.4	1.3	dB	Any 5MHz
VSWR	824.	to	849. MHz		1.3	1.9		TX
	824.	to	849. MHz		1.4	1.9		ANT.
Absolute Attenuation	10.	to	701. MHz	30	36		dB	
	699.	to	716. MHz	30	36		dB	B12,B17 Tx CA
	701.	to	728. MHz	30	36		dB	
	728.	to	764. MHz	30	36		dB	
	764.	to	804. MHz	35	40		dB	
	860.	to	869. MHz	3.0	8.0		dB	
	869.	to	894. MHz	44	54		dB	Rx
	1559.	to	1563. MHz	35	39		dB	Compass
	1565.42	to	1573.37 MHz	35	39		dB	Wideband GPS, lower side-lobe
	1573.37	to	1577.46 MHz	35	39		dB	Regular GPS, main-lobe
	1577.46	to	1585.42 MHz	35	39		dB	Wideband GPS, upper side-lobe
	1597.55	to	1605.89 MHz	35	38		dB	GLONASS
	1638.	to	1708. MHz	32	37		dB	2f
	1710.	to	1785. MHz	31	37		dB	B3,B4 Tx CA
	1844.9	to	1879.9 MHz	31	36		dB	
	1884.5	to	1919.6 MHz	31	36		dB	
	1920.	to	1990. MHz	30	35		dB	B1 Tx CA, PCS Rx Att
	2110.	to	2170. MHz	30	35		dB	B1Rx
	2400.	to	2557. MHz	30	36		dB	2.4GHz ISM, 3f
	3286.	to	3406. MHz	7.0	15.0		dB	4f
	4110.	to	4255. MHz	3.0	10.0		dB	5f
	4900.	to	5950. MHz	5.0	10.0		dB	5GHz ISM,6f,7f
	5953.	to	6582. MHz	7.0	16.0		dB	7f
	6582.	to	6802. MHz	7.0	16.0		dB	8f
	7406.	to	7651. MHz	8.0	17.0		dB	9f
	8230.	to	8500. MHz	8.0	16.0		dB	10f
	9054.	to	9349. MHz	5.0	12.0		dB	11f
	9878.	to	10198. MHz	5.0	12.0		dB	12f
	10702.	to	11047. MHz	2.0	8.0		dB	13f
	11526.	to	11896. MHz	2.0	7.0		dB	14f
	12350.	to	12745. MHz	2.0	9.0		dB	15f

* Typical value at 25±2deg.C

SAYEY836MCA0F0A (Band5 / Balanced / LR / 1814)

Electrical Characteristic < ANT.→RX >

ANT. → RX				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.*	max.		
Center Frequency					881.5		MHz	
Insertion Loss	869. to 894. MHz				2.0	2.3	dB	
	869. to 894. MHz				2.0	2.2	dB	+23 to +27deg.C
	871.4 to 891.6 MHz				1.8	2.1	dB_{INT}	Any 3.84MHz
Ripple Deviation	869. to 894. MHz				0.4	1.3	dB	Any 5MHz
VSWR	869. to 894. MHz				1.6	2.0		RX
	869. to 894. MHz				1.6	2.0		ANT.
Amplitude Balance	869. to 894. MHz			-0.8	0.2	0.8	dB	
Phase Balance	869. to 894. MHz			172	182	188	deg.	
Absolute Attenuation	10. to 447. MHz			50	73		dB	
	45. MHz			50	126		dB	RX-TX
	447. to 824. MHz			50	57		dB	
	779. to 804. MHz			50	58		dB	2TX-RX
	824. to 849. MHz			45	59		dB	TX
	849. to 854. MHz			17	54		dB	(RX+TX)/2
	909. to 979. MHz			15	22		dB	
	979. to 6000. MHz			34	43		dB	
	1693. to 1743. MHz			45	52		dB	RX+TX
	1710. to 1785. MHz			45	52		dB	B3/4 TX CA
	1785. to 1788. MHz			45	53		dB	2f
	1788. to 13025. MHz			23	33		dB	
	1850. to 1920. MHz			45	52		dB	B2 TX CA
	1920. to 1980. MHz			45	52		dB	B1 TX CA
	1980. to 2400. MHz			45	50		dB	
	2305. to 2315. MHz			45	50		dB	WCS TX CA
	2400. to 2500. MHz			44	49		dB	ISM2.4
	2467. to 2494. MHz			44	49		dB	WLAN coexistence
	2517. to 2592. MHz			44	49		dB	RX+2TX
	2607. to 2682. MHz			44	49		dB	3f
	3476. to 3576. MHz			40	47		dB	4f
	4345. to 4470. MHz			40	45		dB	5f
	4900. to 5950. MHz			34	43		dB	ISM 5G
	5214. to 5364. MHz			35	43		dB	6f
	6083. to 6258. MHz			39	57		dB	7f
	6952. to 7152. MHz			27	43		dB	8f
	7821. to 8046. MHz			25	36		dB	
	8690. to 8940. MHz			25	34		dB	
	9559. to 9834. MHz			30	39		dB	
	10428. to 10728. MHz			30	41		dB	
	11297. to 11622. MHz			30	39		dB	
	12116. to 12516. MHz			25	33		dB	

* Typical value at 25±2deg.C

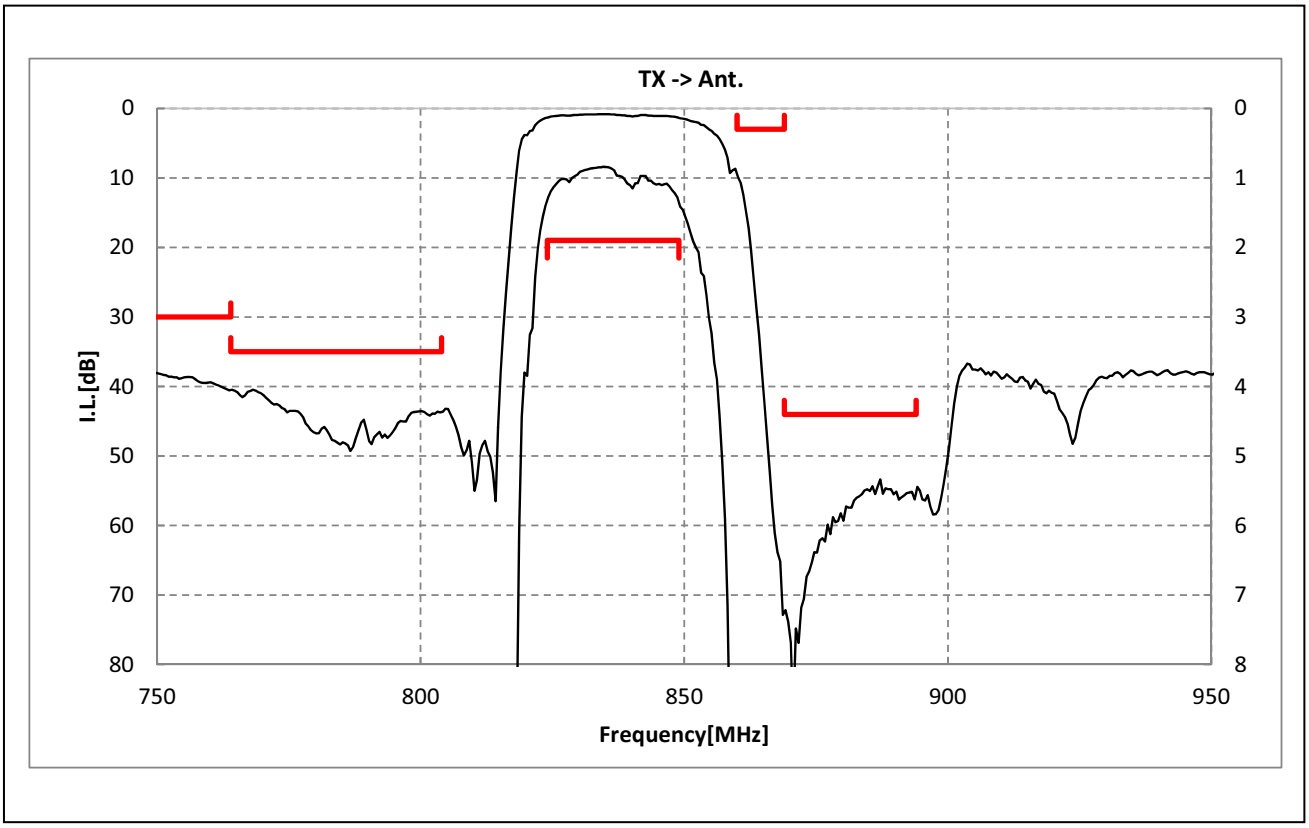
Electrical Characteristic < TX→RX. >

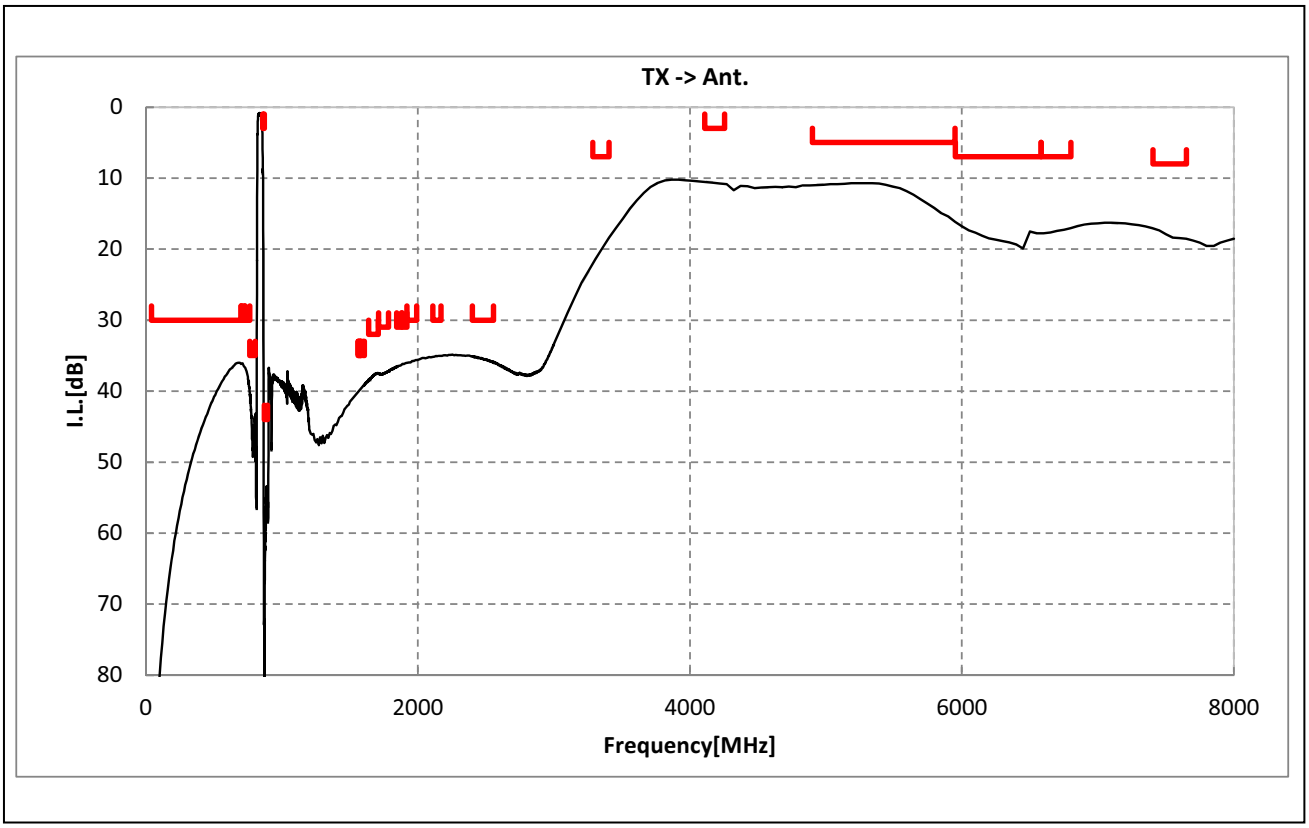
TX → RX		Characteristics (-20 to +85 deg.C) min.	typ.*	max.	Unit	Note
Isolation						
Differential Mode	824. to 849. MHz	56	60		dB	
	826.4 to 846.6 MHz	56	62		dB_{INT}	Any 3.84MHz
	869. to 894. MHz	51	53		dB	
	871.4 to 891.6 MHz	51	54		dB_{INT}	Any 3.84MHz
	1574. to 1577. MHz	50	65		dB	
	1638. to 1708. MHz	50	62		dB	
	2462. to 2557. MHz	50	58		dB	
Common Mode	824. to 849. MHz	50	55		dB	
	826.4 to 846.6 MHz	50	55		dB_{INT}	Any 3.84MHz

* Typical value at 25±2deg.C

Electrical Characteristic

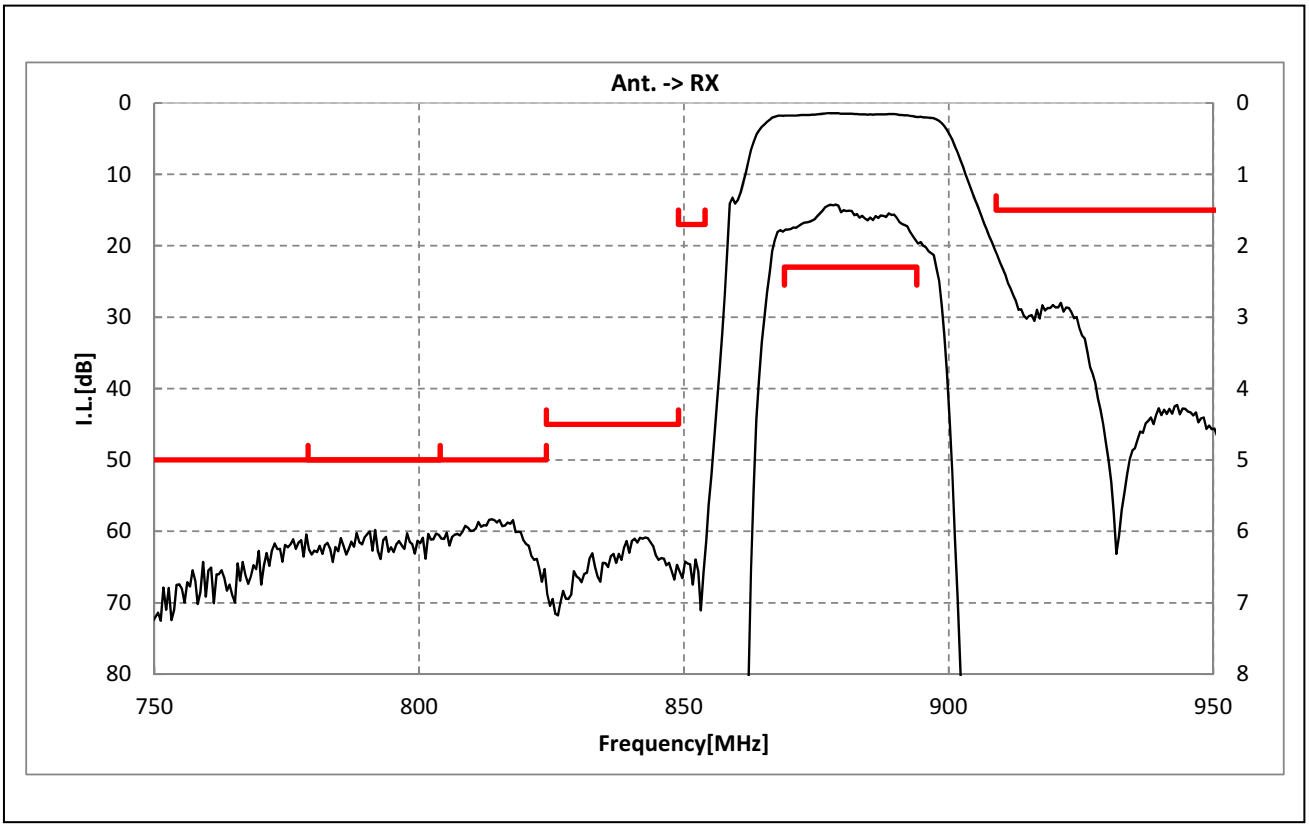
< TX→ANT. >

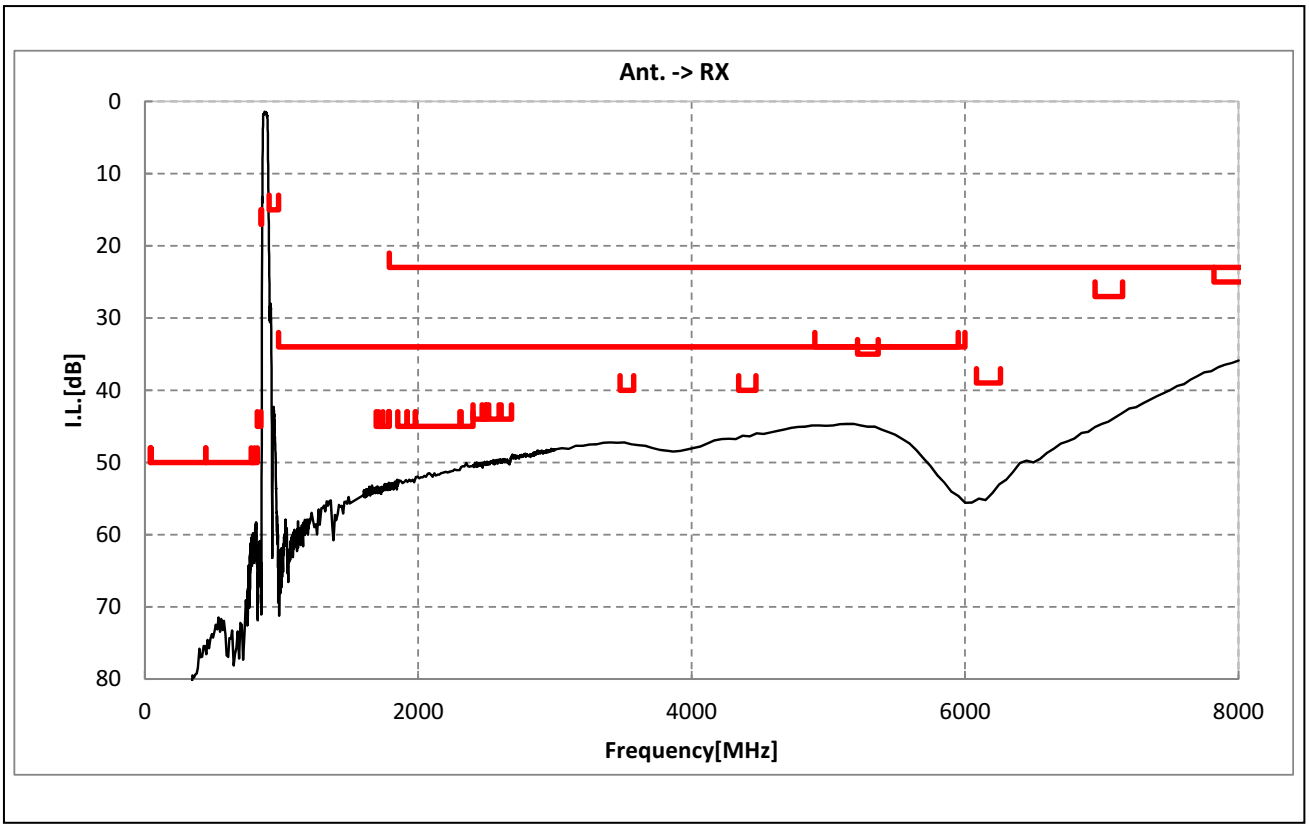




Electrical Characteristic

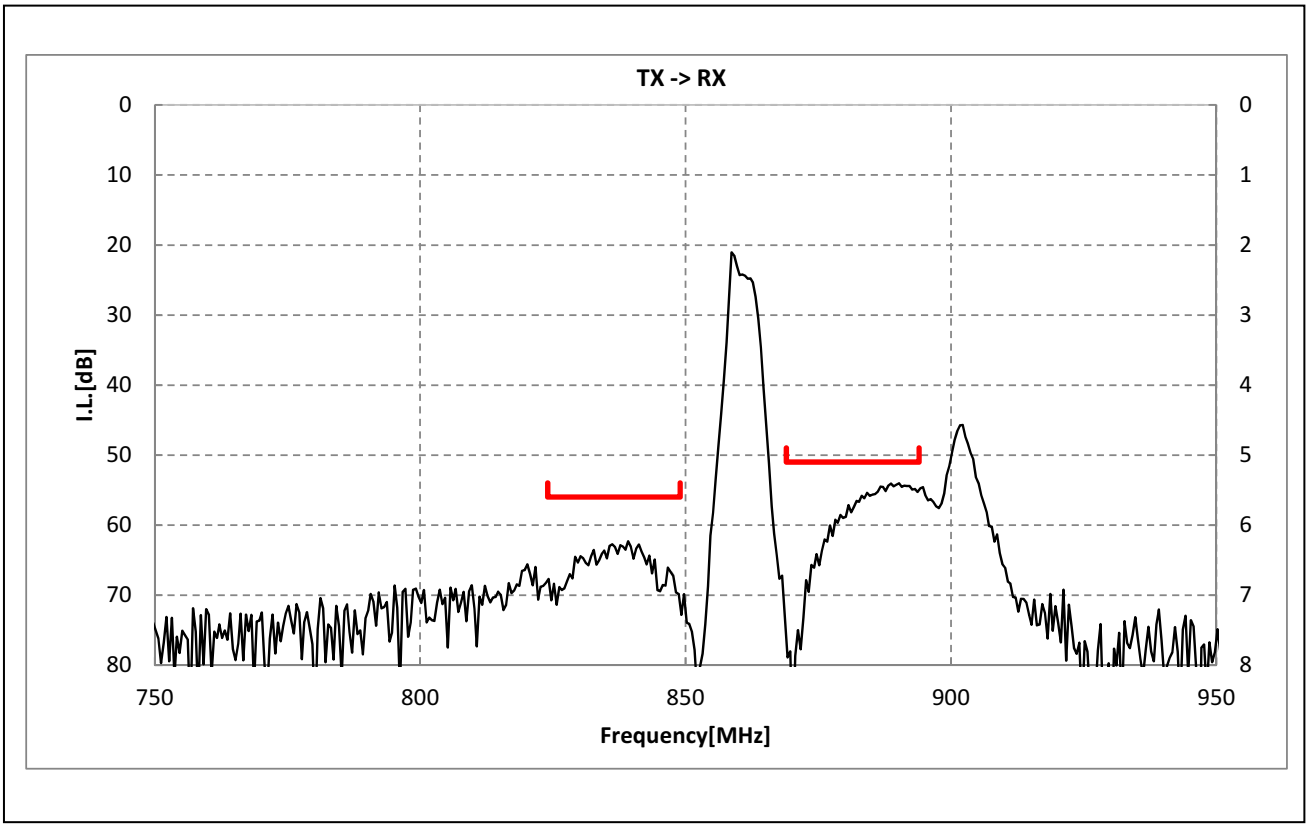
< ANT.→RX >

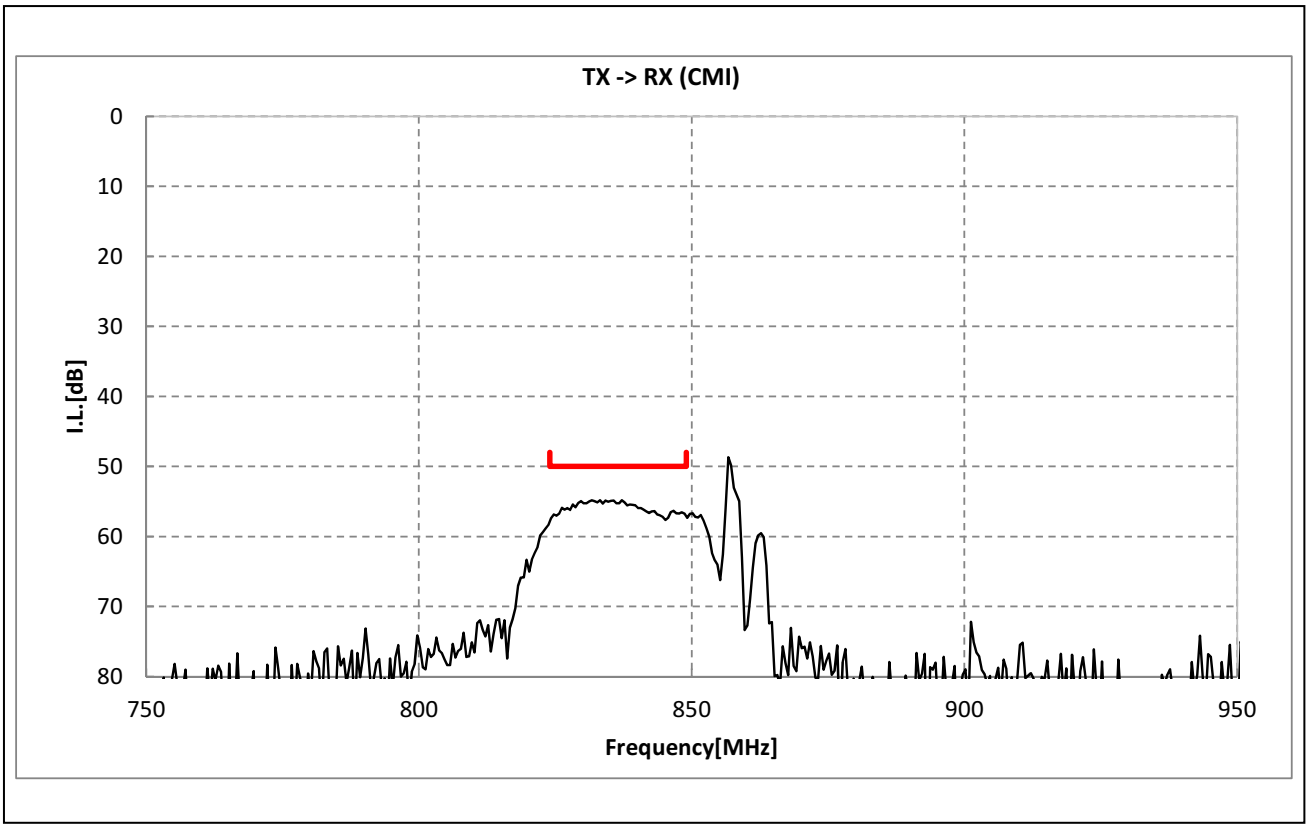




Electrical Characteristic

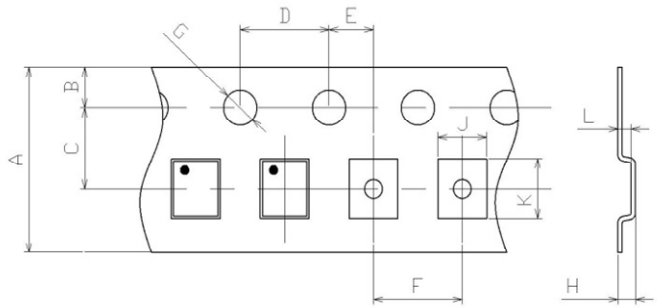
< TX→RX. >





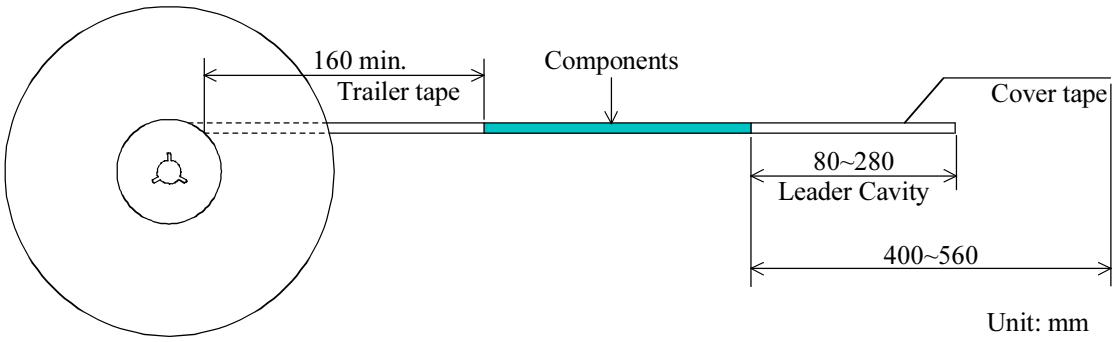
Dimensions of Tape & Reel unit: mm

Carrier Tape

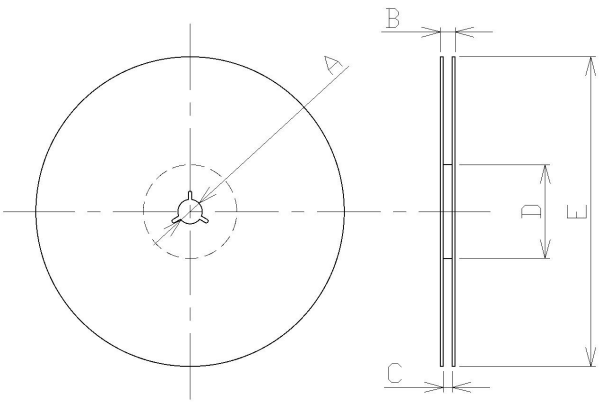


A:	8.0	J:	1.7
B:	1.75	K:	2.1
C:	3.50	L:	0.70
D:	4.0		
E:	2.00		
F:	4.0		
G:	φ1.5		
H:	1.00		

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

SAYEY836MCA0F0AR00… 10000pcs (φ330)
SAYEY836MCA0F0AR1S… Sample Order (φ178/330)

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

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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 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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