Datasheet of SAW Device

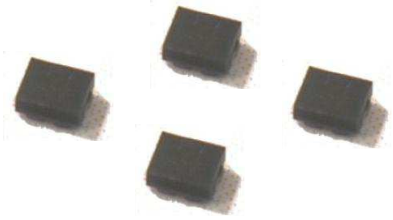
SAW Duplexer

for Band12 / Balanced / LR /1814

Murata PN: SAYEY707MCA0F0A

■ 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.

SAYEY707MCA0F0A (Band12 / Balanced / LR / 1814)

Revision Number	Date	Description
SAYEY707MCA0F0A_rev. A	Aug-01-2014	■ Initial Release
SAYEY707MCA0F0A_rev. B	Sep-30-2014	■ Updated for MP
SAYEY707MCA0F0A_rev. C	Sep-02-2015	■ Updated Feature
SAYEY707MCA0F0A_rev. D	Aug-24-2016	■ Updated General Information

- Operating temperature : -20 to +85 deg.C
- Storage temperature : -40 to +85 deg.C
- Input Power : +29 dBm 5000 h +50 deg.C
- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)
- Minimum Resistance betweem the terminal : 10M ohm
- RoHS compliance : Yes

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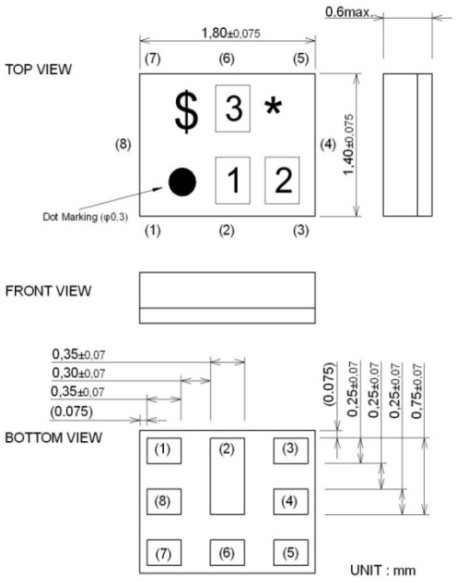
Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions

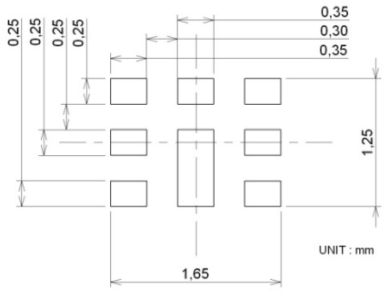


Marking : Laser Printing
* : Month code(Refer to the table A)
$: Date code(Refer to the table B)
1 : 7
2 : G
3 : A

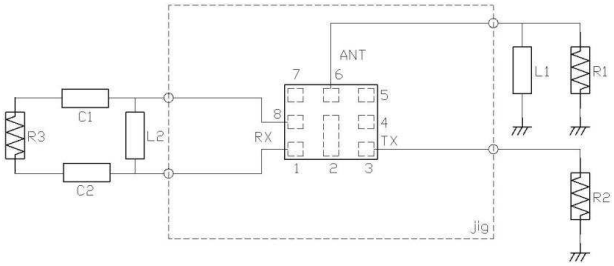
Terminal Number
(6) : Ant
(3) : TX
(1)(8) : RX
Others : GND

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

Land Pattern



Measurement Circuit (Top Thru View)



R1 : 50 ohm	L1 :12nH(Ideal inductor)
	:12nH(LQP03TN12N) <Reference>
R2 : 50 ohm	
R3 : 100 ohm	L2 :30nH(Ideal inductor)
	C1 :4nH(Ideal capacitor)
	C2 :4nH(Ideal capacitor)

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Electrical Characteristic < TX→ANT. >

TX → ANT.				Characteristics (-20 to +85 deg.C)			Unit	Note
				min.	typ.	max.		
Center Frequency					707.5		MHz	
Insertion Loss	699.25	to	715.75 MHz		1.7	2.4	dB	
	699.25	to	715.75 MHz		1.7	2.1	dB	+23 to +27deg.C
	704.	to	716. MHz		1.9	2.5	dB	
	704.	to	716. MHz		1.9	2.2	dB	+23 to +27deg.C
Ripple Deviation	699.25	to	715.75 MHz		0.7	1.5	dB	
	699.	to	716. MHz		0.8	1.8	dB	Any 5MHz
VSWR	699.25	to	715.75 MHz		1.5	2.0		TX
	699.25	to	715.75 MHz		1.6	2.0		ANT.
Absolute Attenuation	10.	to	680. MHz	30	42		dB	
	722.	to	729. MHz	1.0	7.0		dB	Ch56
	722.	to	729. MHz	1.0	7.0		dB	Average over 7MHz
	729.	to	746. MHz	45	61		dB	RX
	746.	to	768. MHz	30	44		dB	
	768.	to	805. MHz	25	43		dB	
	869.	to	894. MHz	30	43		dB	
	1398.	to	1432. MHz	25	39		dB	2TX
	1565.42	to	1605.89 MHz	30	36		dB	GPS/GLONASS
	1805.	to	1880. MHz	28	33		dB	
	1930.	to	1990. MHz	27	33		dB	
	2110.	to	2155. MHz	27	32		dB	
	2155.	to	2170. MHz	27	32		dB	
	2400.	to	2484. MHz	27	32		dB	
	2816.	to	2864. MHz	10	26		dB	
	4900.	to	5850. MHz	5.0	10.0		dB	

* Typical value at 25±2deg.C

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SAYEY707MCA0F0A (Band12 / Balanced / LR / 1814)

Electrical Characteristic < ANT.→RX >

ANT. → RX		Characteristics (-20 to +85 deg.C)			Unit	Note
		min.	typ.	max.		
Center Frequency			737.5		MHz	
Insertion Loss	729.25 to 745.75 MHz		1.6	2.4	dB	
	729.25 to 745.75 MHz		1.6	2.2	dB	+23 to +27deg.C
Ripple Deviation	729.25 to 745.75 MHz		0.4	1.5	dB	
	729. to 746. MHz		0.4	2.0	dB	Any 5MHz
VSWR	729.25 to 745.75 MHz		1.6	2.0		RX
	729.25 to 745.75 MHz		1.7	2.0		ANT.
Amplitude Balance	729. to 746. MHz	-1.5	0.5	1.5	dB	
Phase Balance	729. to 746. MHz	170	184	190	deg.	
Absolute Attenuation	1. to 699. MHz	35	58		dB	
	699. to 716. MHz	50	64		dB	Tx
	716. to 722. MHz	3.0	19.0		dB	Average over 6MHz
	722. to 725. MHz	1.0	8.0		dB	-20 to +55deg.C, Avg over 3MHz
	725. to 728. MHz	1.0	2.0		dB	-20 to +55deg.C, Avg over 3MHz
	776. to 793. MHz	20	27		dB	Upper 700 MHz Tx jammer
	793. to 805. MHz	35	58		dB	PS mobile transmitters
	814. to 6000. MHz	30	44		dB	
	6000. to 12750. MHz	5.0	25.0		dB	

* 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						
Differential Mode	699.25 to 715.75 MHz	60	68		dB	TX
	729.25 to 745.75 MHz	60	64		dB	RX
	704. to 715.75 MHz	60	72		dB	B17 TX
	734. to 745.75 MHz	60	64		dB	B17 RX
	1398. to 1432. MHz	30	73		dB	
	2097. to 2198. MHz	30	64		dB	
	2792. to 2864. MHz	30	61		dB	
Common Mode	699.25 to 715.75 MHz	40	54		dB	TX

* Typical value at 25±2deg.C

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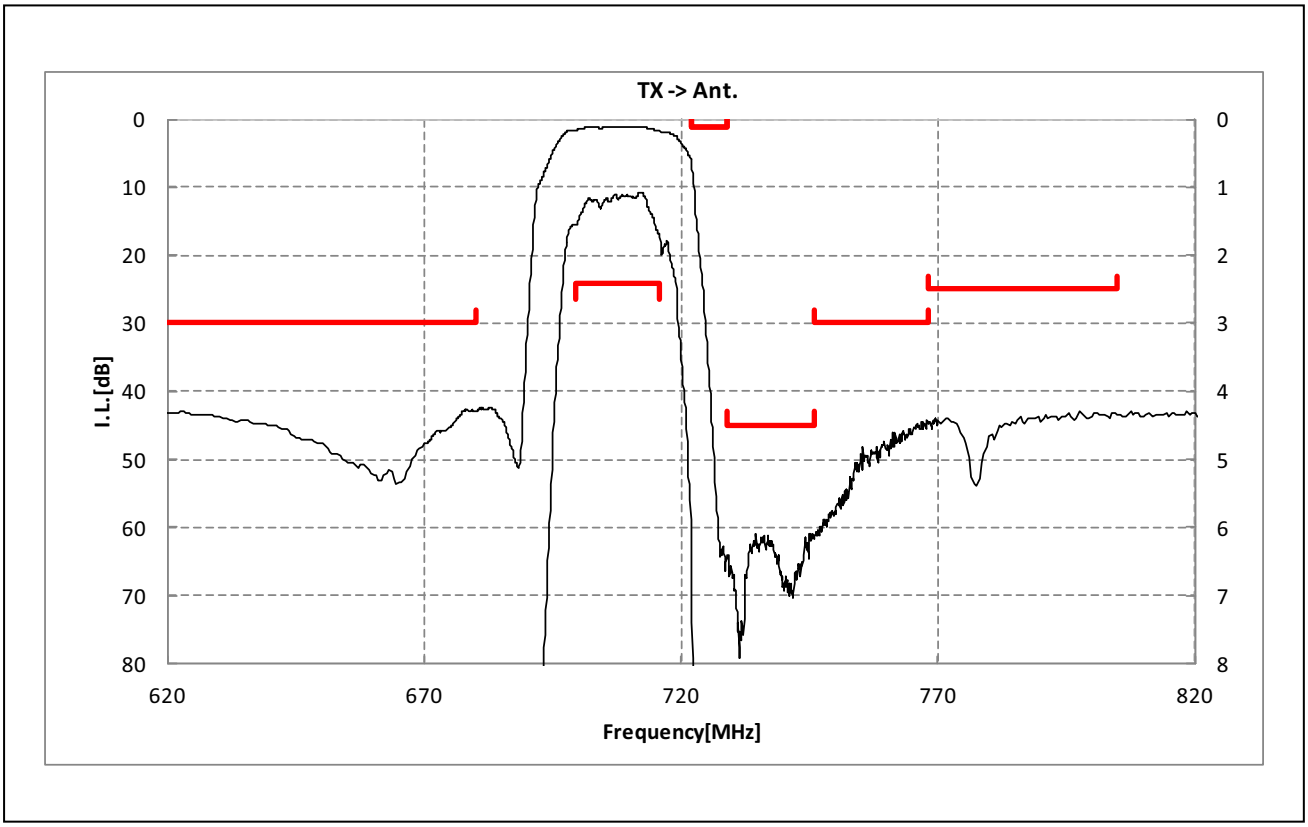
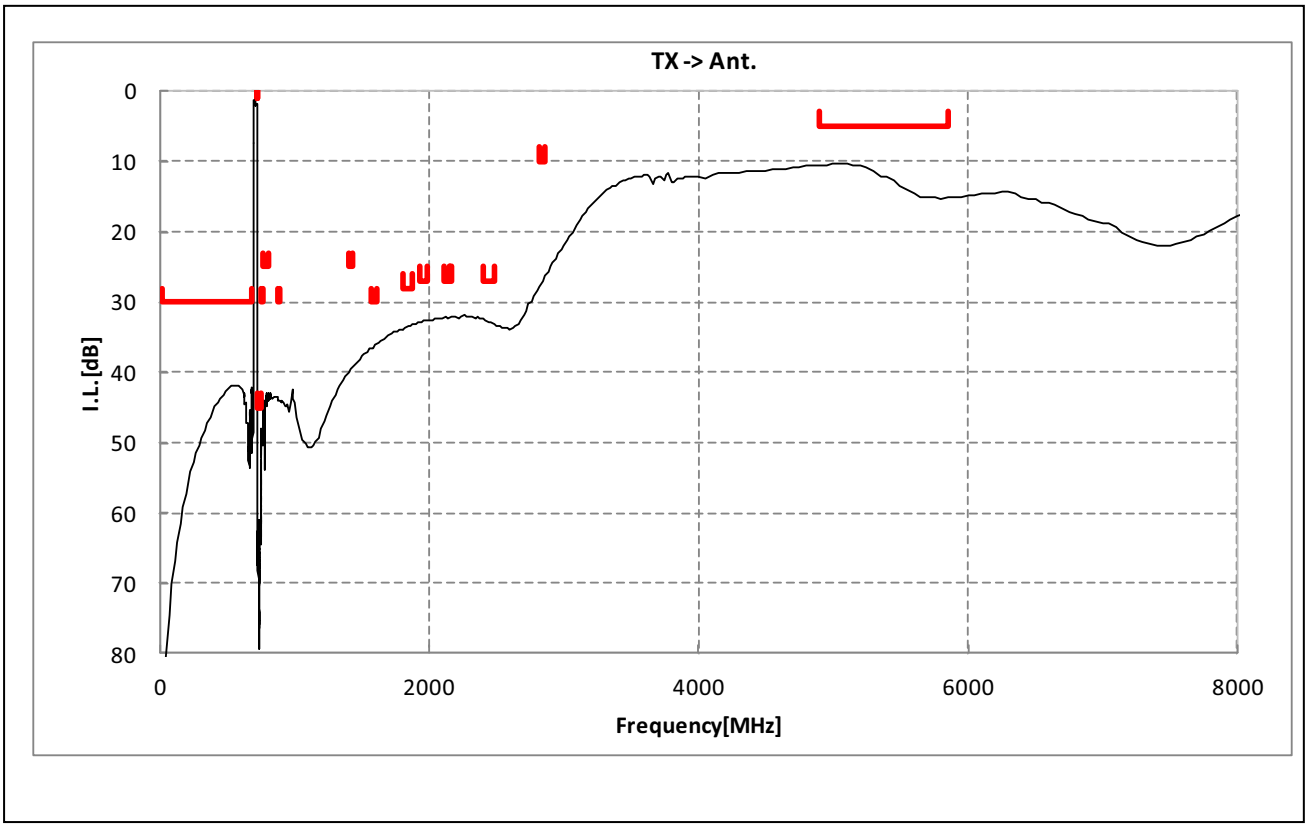
Electrical Characteristic

< TX→ANT. >





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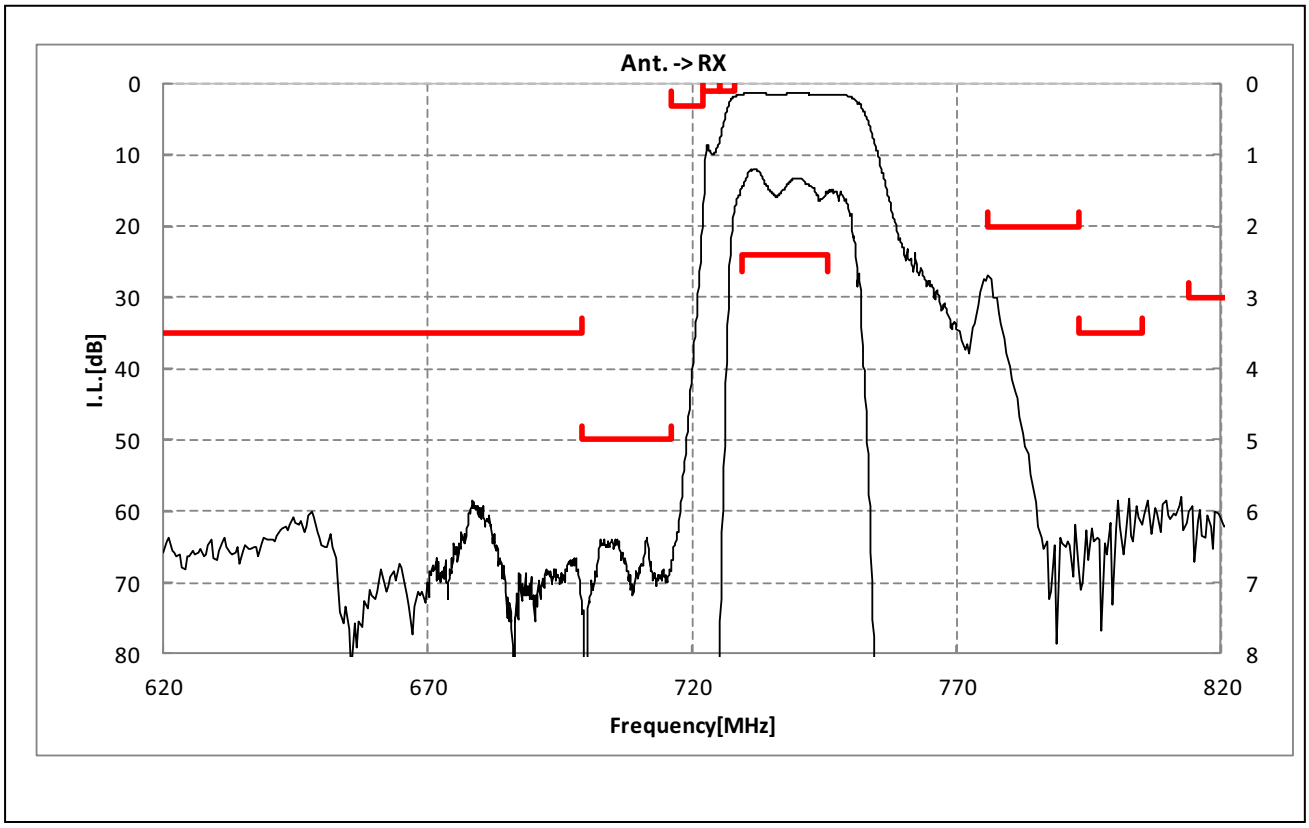
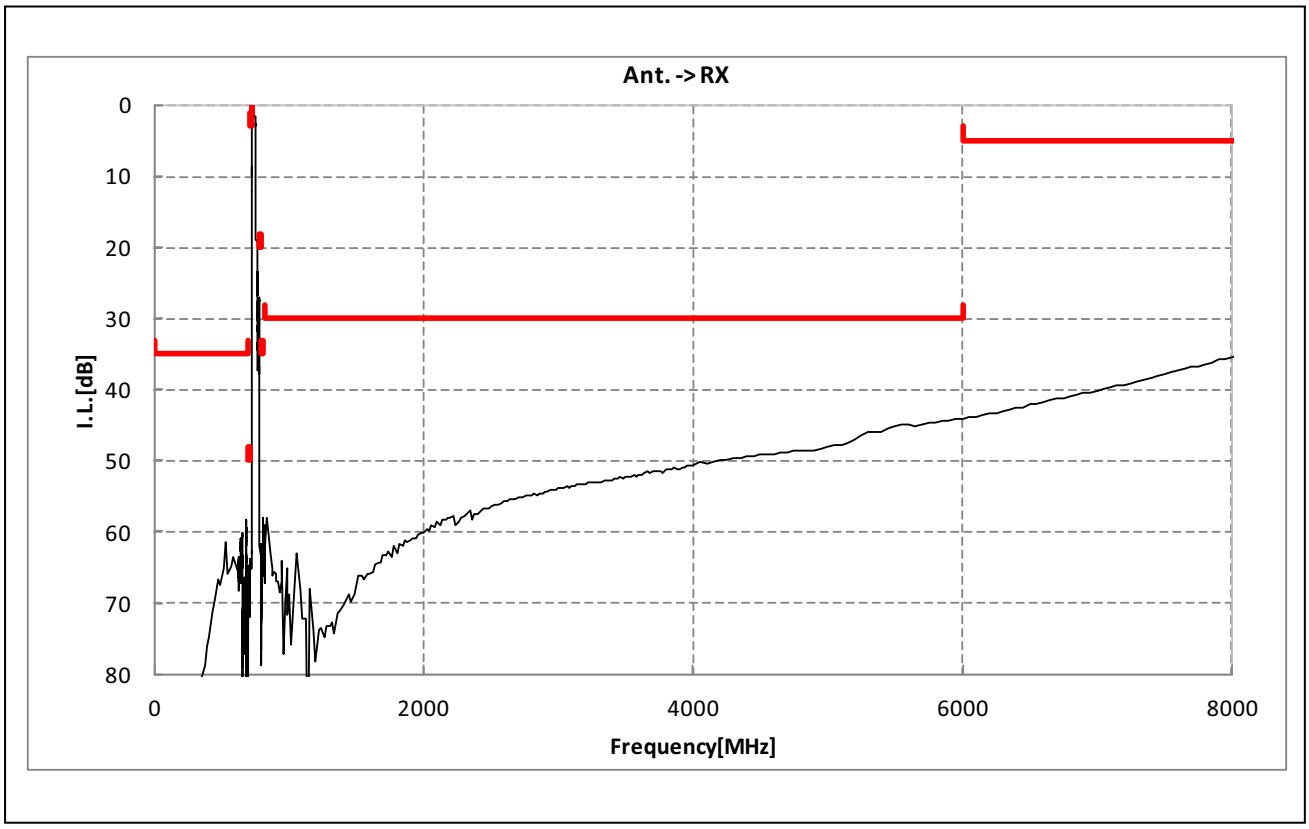
Electrical Characteristic

< ANT.→RX >





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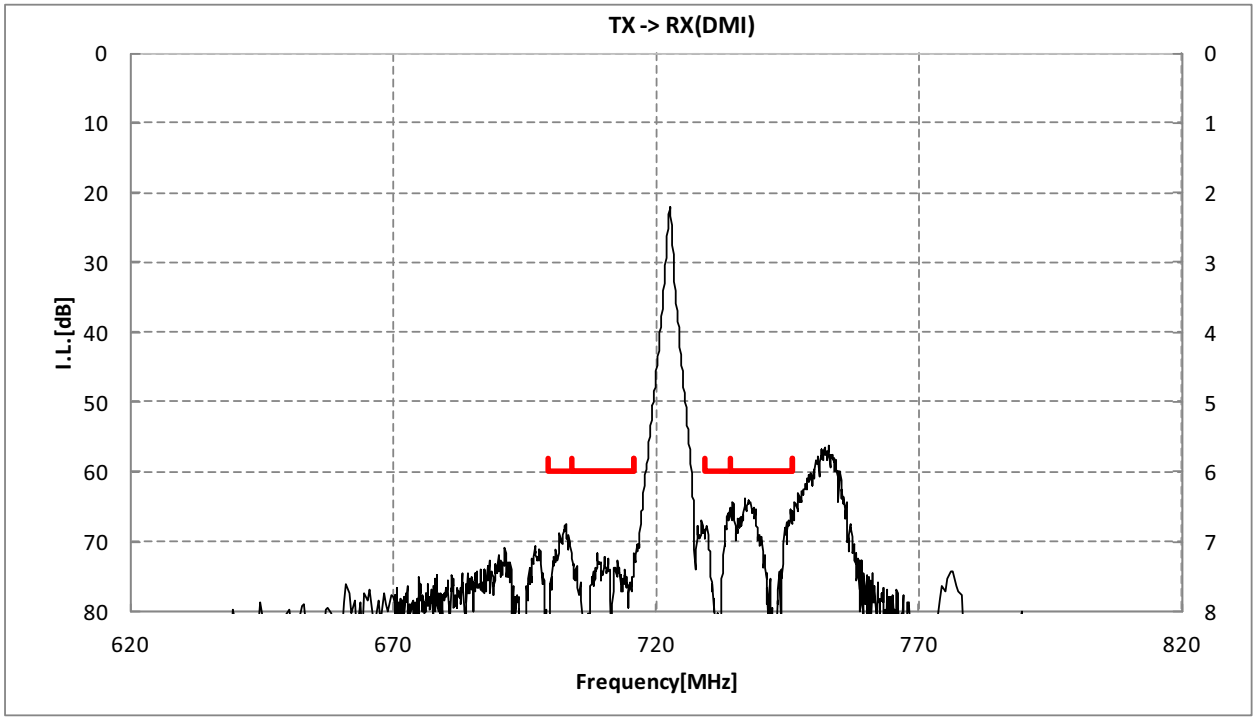
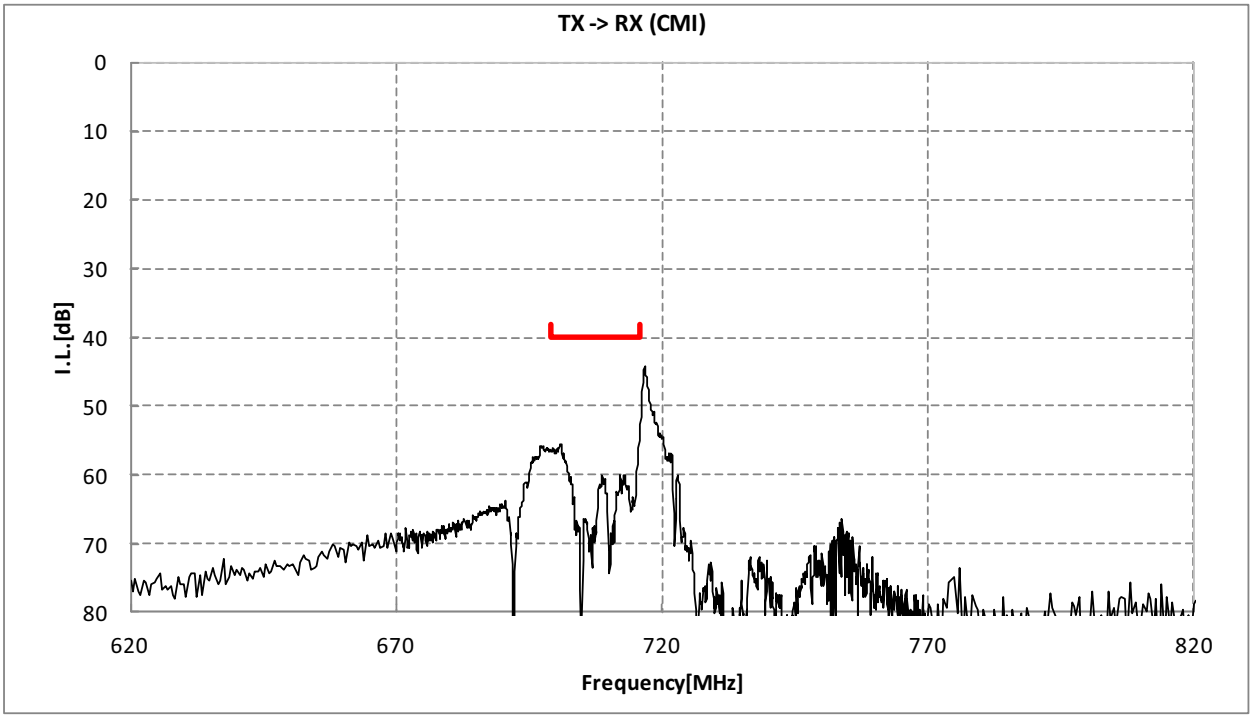
Electrical Characteristic

< TX→RX. >





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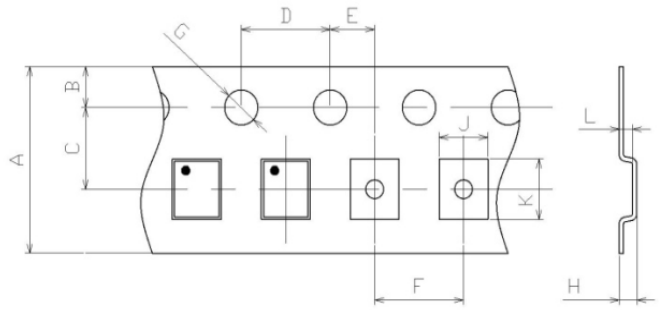
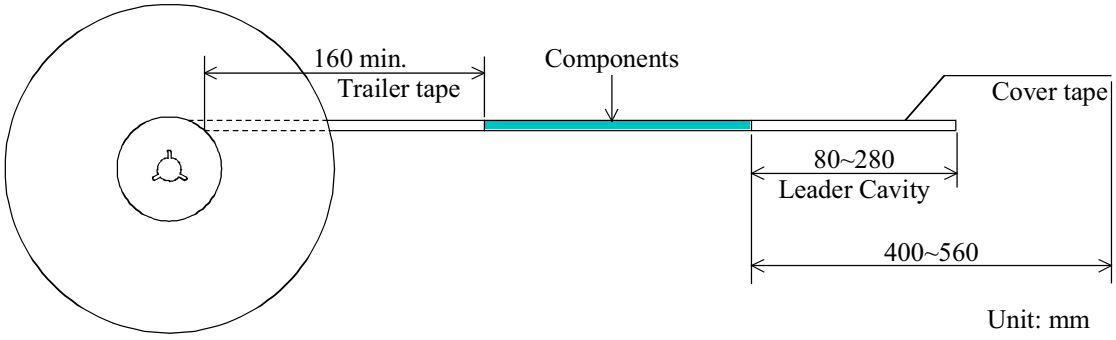
Dimensions of Tape & Reel unit: mm

Carrier Tape

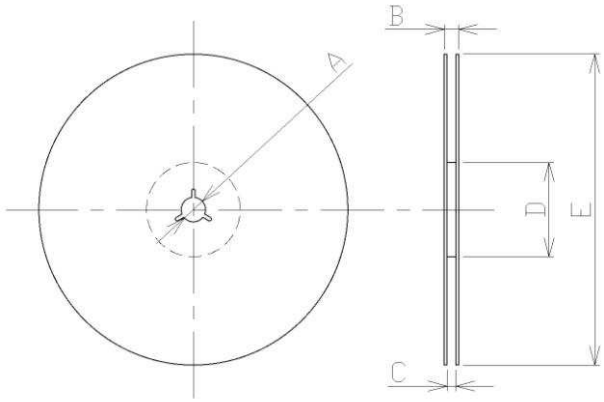


A:	8.0	J:	1.7
B:	1.75	K:	2.1
C:	3.50	L:	0.70
D:	4.0		
E:	2.00		
F:	4.0		
G:	φ1.5		
H:	1.00		

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

SAYEY707MCA0F0AR00… 10000pcs (φ330)
SAYEY707MCA0F0AR1S… 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

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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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