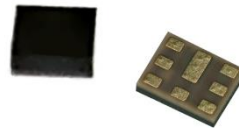


Data Sheet for SAW Components



Band1

Duplexer

Product ID: LBD2140G13

Date: Sep. 24, 2021

Revision: 1.0

Features

- ◆ Package Size : 1.6 x 1.2 x 0.6max mm
- ◆ Single-Ended Input and Output
- ◆ Terminating Impedance : 50 Ω
- ◆ Moisture Sensitivity Level 3
- ◆ ESD Sensitive Device

Electrical Specifications Band1 Duplexer

Temperature Range for Specification : -30 to +85 °C

Tx to Ant					Min.	Typ.	Max.	Unit
Insertion Loss								
	1920	-	1980	MHz	-	1.3	1.9	dB
Pass Band Ripple								
	1920	-	1980	MHz	-	0.3	0.5 ^{*1}	dB
VSWR Tx								
	1920	-	1980	MHz	-	1.5	2.0	-
VSWR Ant								
	1920	-	1980	MHz	-	1.5	2.0	-
Absolute Attenuation								
	10	-	1574	MHz	29	41	-	dB
	420	-	494	MHz	40	55	-	dB
	814	-	849	MHz	30	46	-	dB
	880	-	915	MHz	30	45	-	dB
	925	-	960	MHz	30	45	-	dB
	1226	-	1250	MHz	30	42	-	dB
	1427.9	-	1462.9	MHz	30	43	-	dB
	1475	-	1511	MHz	34	41	-	dB
	1559	-	1563	MHz	40	47	-	dB
	1565.42	-	1573.37	MHz	40	48	-	dB
	1573.37	-	1577.47	MHz	40	48	-	dB
	1577.47	-	1585.42	MHz	40	47	-	dB
	1597.55	-	1605.89	MHz	40	47	-	dB
	1605.89	-	1680	MHz	25	30	-	dB
	1805	-	1865	MHz	20	30	-	dB
	1865	-	1880	MHz	10	23	-	dB
	1880	-	1895	MHz	8	10	-	dB
	2010	-	2025	MHz	15 ^{*2}	18	-	dB
	2110	-	2170	MHz	44	53	-	dB
	2300	-	2400	MHz	30	32	-	dB
	2400	-	2500	MHz	28	30	-	dB
	2620	-	2690	MHz	27	29	-	dB
	3840	-	3960	MHz	20	34	-	dB

4900	-	5950	MHz	20	25			dB
4905	-	5845	MHz	17	25	-		dB
7680	-	7920	MHz	9	29	-		dB

*1: Over any 5 MHz in band

*2: +15 to +85°C

Sanan-IC

Electrical Specifications Band1 Duplexer

Temperature Range for Specification : -30 to +85 °C

Ant to Rx	Min.	Typ.	Max.	Unit
Insertion Loss				
2110 - 2170 MHz	-	1.7	2.2	dB
Pass Band Ripple				
2110 - 2170 MHz	-	0.9	1.2	dB
VSWR Rx				
2110 - 2170 MHz	-	1.5	2.0	-
VSWR Ant				
2110 - 2170 MHz	-	1.4	2.0	-
Absolute Attenuation				
1 - 1920 MHz	33	37	-	dB
190 - 190 MHz	50	69	-	dB
718 - 748 MHz	40	46	-	dB
814 - 849 MHz	40	44	-	dB
880 - 915 MHz	40	43	-	dB
1427 - 1463 MHz	35	37	-	dB
1730 - 1790 MHz	35	41	-	dB
1710 - 1785 MHz	33	40	-	dB
1920 - 1980 MHz	45	52	-	dB
1980 - 2015 MHz	15	37	-	dB
2015 - 2075 MHz	5	12	-	dB
2255 - 6130 MHz	10	12	-	dB
2300 - 2400 MHz	26	44	-	dB
2400 - 2500 MHz	30	47	-	dB
2500 - 2570 MHz	38	51	-	dB
4030 - 4150 MHz	10	14	-	dB
4220 - 4340 MHz	10	12	-	dB
4900 - 5950 MHz	10	13	-	dB
5950 - 6130 MHz	10	15	-	dB
6130 - 6330 MHz	10	15	-	dB
6330 - 6510 MHz	10	16	-	dB

Electrical Specifications Band1 Duplexer

Temperature Range for Specification : -30 to +85 °C

Tx to Rx				Min.	Typ.	Max.	Unit	
Isolation								
	1920	-	1980	MHz	54	60	-	dB
	2110	-	2170	MHz	50	53	-	dB

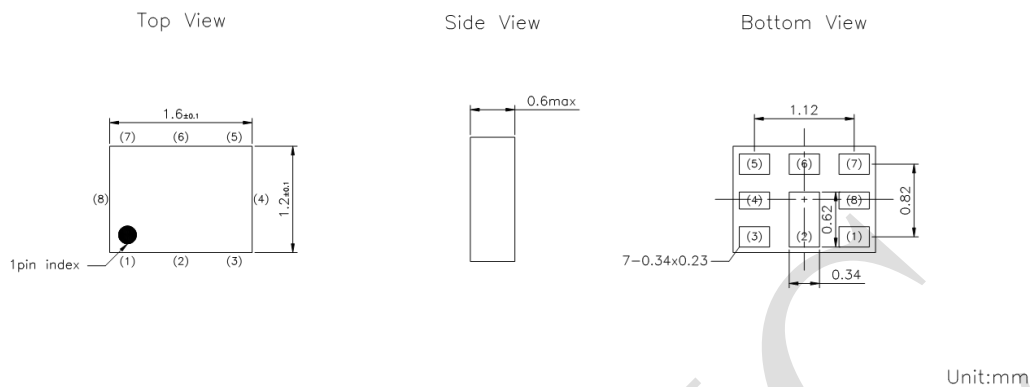
Maximum Ratings

Item	Rating	Condition / Remark
Storage Temperature	-40 to +85 °C	
DC Voltage	5 V	+25 °C
Input power	+30 dBm	LTE , +55 °C , 5000 h

Recommended Operating Conditions

Item	Rating	Condition / Remark
Operating Temperature, T _{CASE}	-30 to +85 °C	

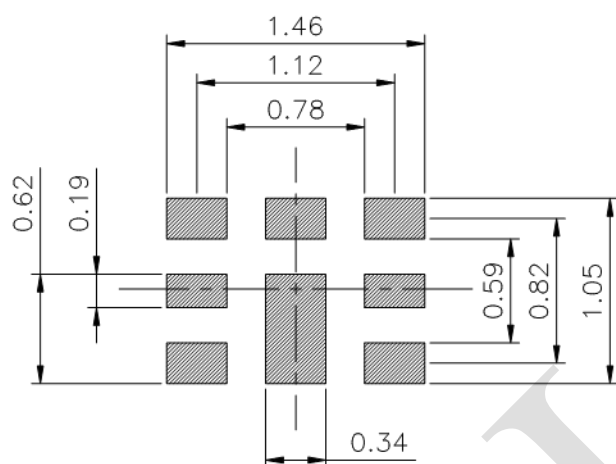
Package Information



Pin Configuration

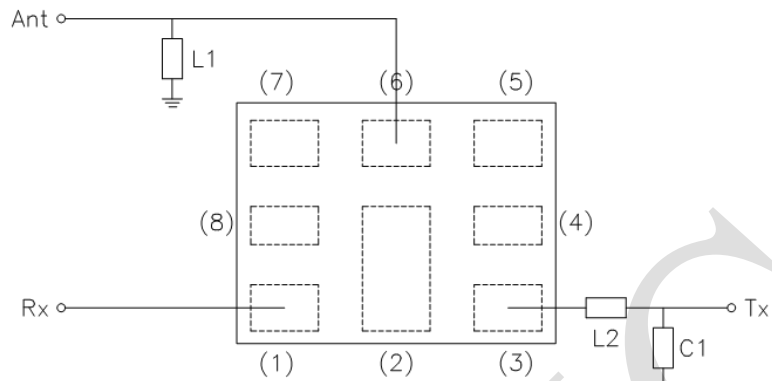
1	:	Rx
3	:	Tx
6	:	Ant
Other	:	GND

Land Pattern



Unit:mm

Application Circuit



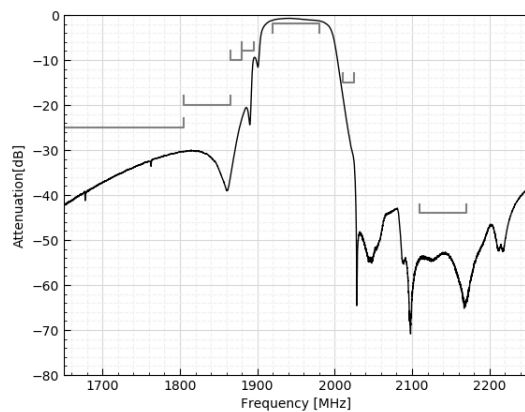
Port	Terminating Z	Matching Component
Ant	50 Ω	L1 : 2.7nH (Ideal inductor)
Tx	50 Ω	L2 : 3.8nH (Ideal inductor) C1 : 1.0pF (Ideal capacitor)
Rx	50 Ω	

For ESD protection, external shunt inductor at all ports is recommended.

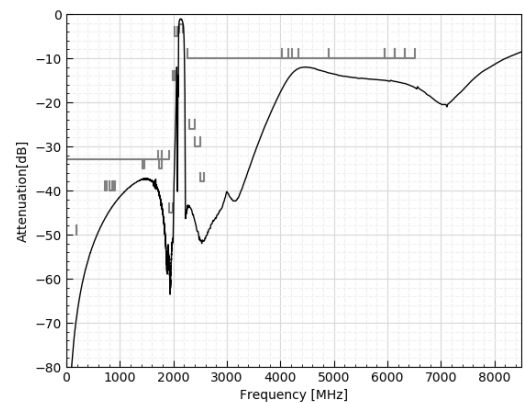
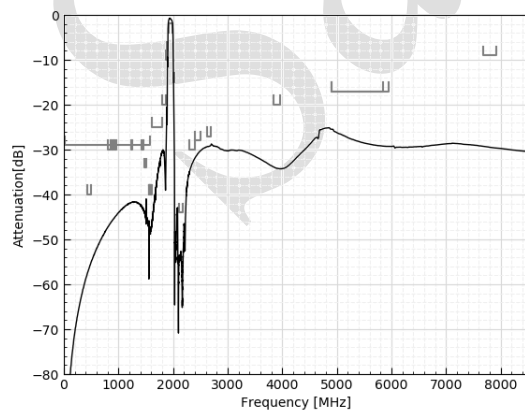
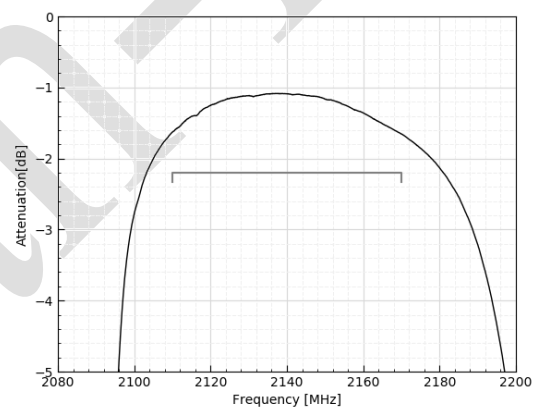
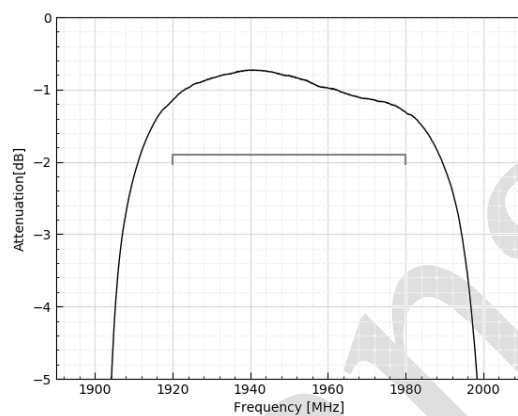
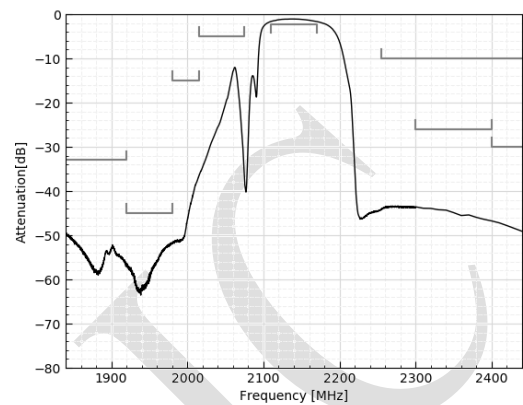
Electrical Characteristics

Band Duplexer

Tx to Ant



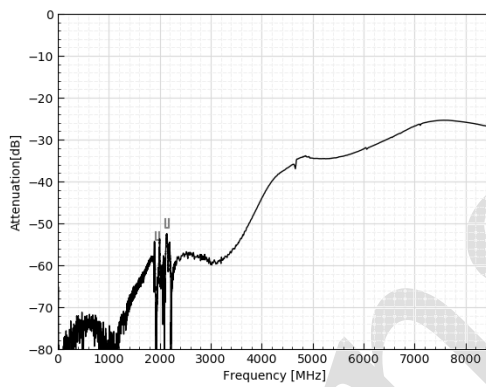
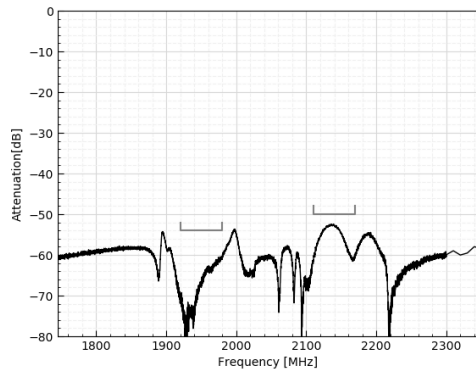
Ant to Rx



Electrical Characteristics

Band1 Duplexer

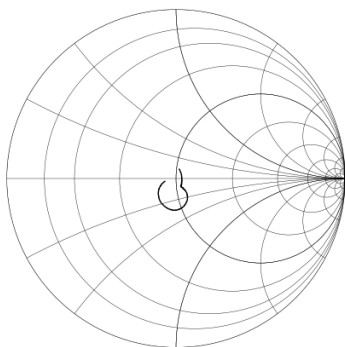
Tx to Rx



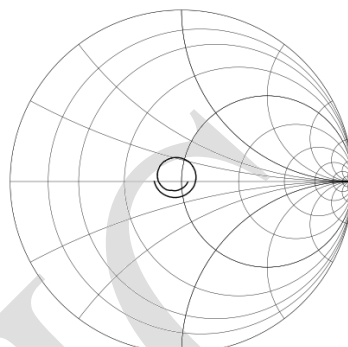
Electrical Characteristics

Band1 Duplexer

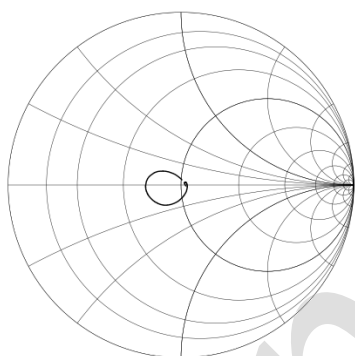
Ant Impedance (Tx band)



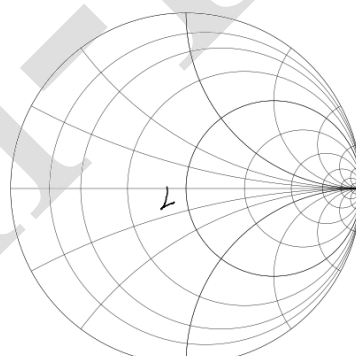
Ant Impedance (Rx band)



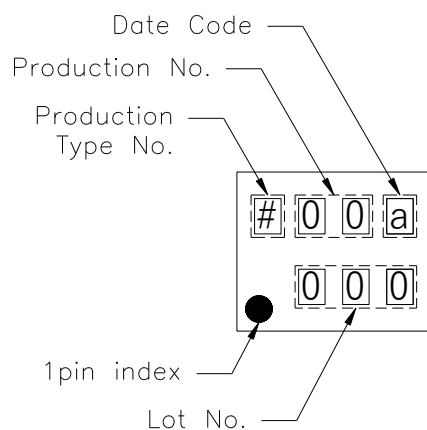
Tx Impedance



Rx Impedance



Marking Information



Production type No. (S: Sample, P: Production)

Product No. : 13

Lot No. (Indicated by 0 ~ 9 or A to Z and a to z, except I, O, i, o and l)

Product date code :

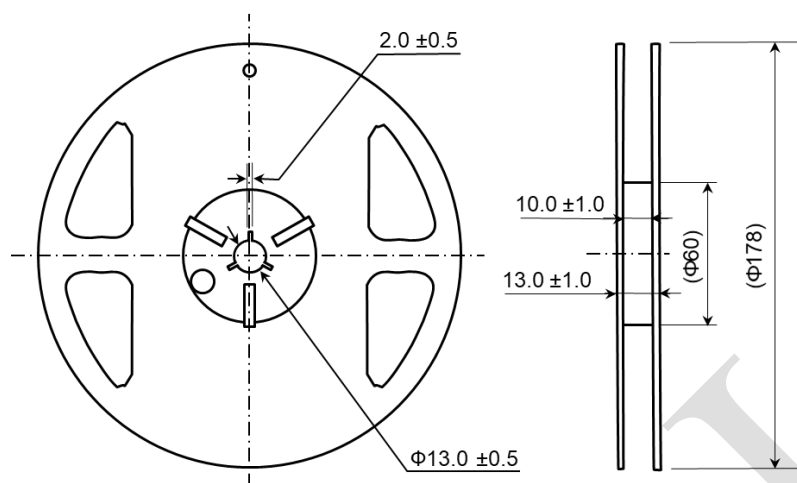
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2021	N	P	Q	R	S	T	U	V	W	X	Y	Z
2022	a	b	c	d	e	f	g	h	j	k	l	m
2023	n	p	q	r	s	t	u	v	w	x	y	z
2024	A	B	C	D	E	F	G	H	J	K	L	M

Technical drawing of a tape with dimensions and labels:

- Top dimensions: 0.2 ± 0.03 , 2.0 ± 0.05 , 4.0 ± 0.1
- Bottom dimensions: 0.72 ± 0.05 , 4.0 ± 0.1 , 1.36 ± 0.02
- Right side dimensions: 1.75 ± 0.1 , 3.5 ± 0.05 , 8.0 ± 0.2 , 0.60 ± 0.10
- Internal dimensions: 1.78 ± 0.05
- Labels: "Feeding Hole ($\phi 1.55 \pm 0.05$)", "Tape Running Direction"

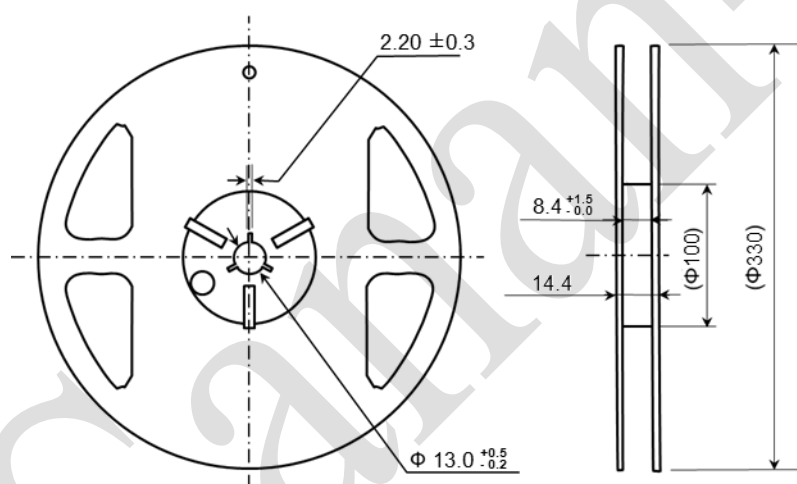
The diagram illustrates the layout of a magnetic tape. It is divided into three main sections from left to right: 'Vacant', 'Components Contained', and 'Vacant + Leader Part'. The tape runs from 'END' on the left to 'START' on the right. The 'Vacant' section is at least 150mm long and contains various symbols (circles, squares, and a hatched square). The 'Components Contained' section is separated from the 'Vacant' section by a break symbol (two parallel slanted lines). The 'Vacant + Leader Part' section is at least 400mm long and contains a sequence of symbols including circles, squares, and hatched squares. An arrow at the bottom indicates the 'TAPE RUNNING DIRECTION' from left to right.

Reel Information



$\Phi 178$ Reel Dimension

UNIT: mm



$\Phi 330$ Reel Dimension

UNIT: mm

Ordering Code

Part Number	Description
LBD2140G13-SA	Bulk (few pieces)
LBD2140G13-MB	Tape & Reel 3,000 pcs/reel
LBD2140G13-MC	Tape & Reel 10,000 pcs/reel
LBD2140G13-SZ	EVB

Revision History

Revision	Date	Description
1.0	Sep. 24, 2021	● Initial release

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