



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.

Product Specifications Approval Sheet

Product Description: SAW DPX1950/2140MHz LTE Band 1 SMD 2016

TST Part No.: TF0104A

Customer Part No.: _____

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: _____ Hayley Chou *Hayley Chou*

Approved by: _____ Andy Yu *Andy Yu*

Date: _____ 2017/04/26

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
Taoyuan, 324, Taiwan, R.O.C.

SAW DPX1950/2140MHz LTE Band 1 SMD 2016 (60MHz BW)

MODEL NO.:TF0104A

REV.2.0

A. MAXIMUM RATING:

1. Maximum Input Power: 29 dBm
2. DC voltage: 0 V
3. Operating Temperature: -30°C to +85°C
4. Storage Temperature: -40°C to +85°C
5. Moisture Sensitivity Level: Level 1
6. ESD 50V (MM) 100V (HBM)

RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50//4.3nH Ω (Single)

Terminating impedance (Rx Port): 50//7.5nH Ω (Single)

Terminating impedance (Ant Port): 50//3.3nH Ω (Single)

Tx to ANT

Parameters Description		Unit	Mini.	Typical	Max.	Remarks
Insertion Loss	1920.48~1979.52 MHz	dB(*1)	-	1.9	2.2	
Amplitude Ripple	1920~1980 MHz	dB	-	0.6	1.0	
VSWR	ANT	-	-	1.5	2.0	
	Tx	-	-	1.5	2.0	
Input Power	1920~1980 MHz	-	29dBm(0.8W)			> 50kh CW tone(Ta=50°C)
Attenuation:						
420~494 MHz		dB	44	60	-	
843~894 MHz		dB	30	42	-	
1565.42~1573.374 MHz		dB	38	43	-	
1573.374~1585.42 MHz		dB	40	45	-	
1597.5515~1605.886 MHz		dB	40	50	-	
1605.886~1805 MHz		dB	25	40		
1805~1865 MHz		dB	15	27		
1865~1880 MHz		dB	10	20		
2010~2025 MHz		dB	18	21		+15~+85°C
2110~2170 MHz		dB	38	42		
2400~2500 MHz		dB	36	42		
3840~3960 MHz		dB	10	22		

(*1) Specification of insertion loss excludes loss that comes from the test board.

ANT to Rx

Parameters Description		Unit	Mini.	Typical	Max.	Remarks
Insertion Loss	2110~2170 MHz	dB(*1)	-	1.9	2.5	
Amplitude Ripple	2110~2170MHz	dB	-	0.5	1.2	
VSWR	ANT	2110~2170 MHz	-	-	1.5	2.0
	Rx		-	-	1.7	2.1
Attenuation:						
190 MHz		dB	50	75	-	
814~849 MHz		dB	40	65	-	
880~915MHz		dB	40	63	-	
1447~1463MHz		dB	40	49	-	
1730~1790MHz		dB	40	55	-	
1920~1980MHz		dB	45	50	-	
2015~2075MHz		dB	13	17	-	
2400~2500MHz		dB	40	46	-	
4030~4150MHz		dB	40	51	-	
4220~4340MHz		dB	40	51	-	
4340~6000MHz		dB	15	48	-	
4900~5950MHz		dB	40	47	-	
5950~6130MHz		dB	40	48	-	
6130~6330MHz		dB	35	48	-	
6330~6510MHz		dB	35	48	-	

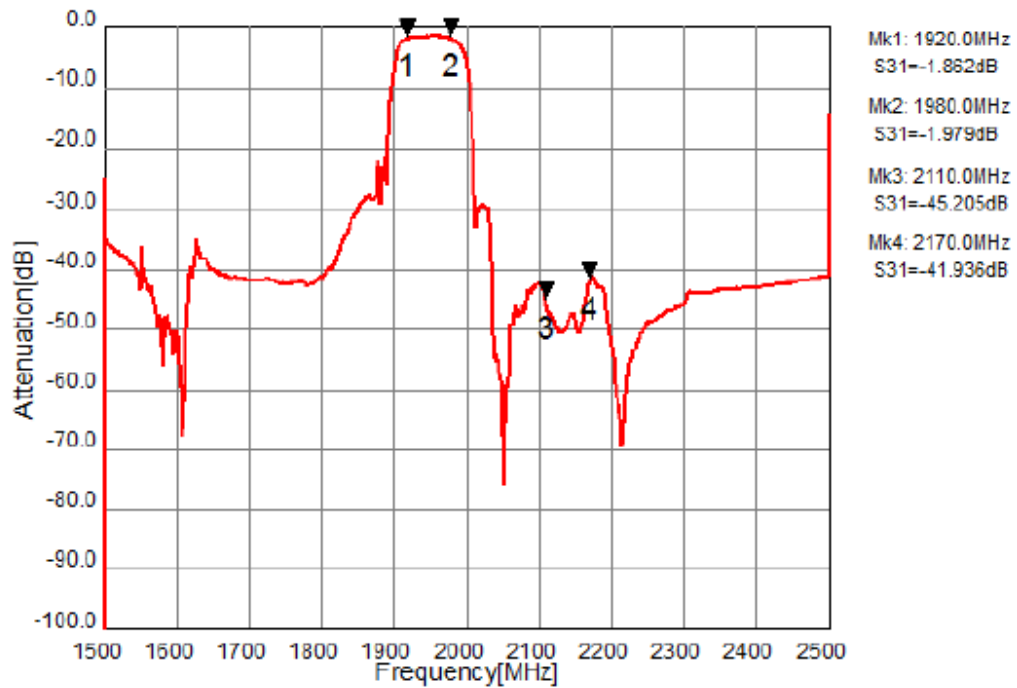
(*1) Specification of insertion loss excludes loss that comes from the test board.

Tx to Rx

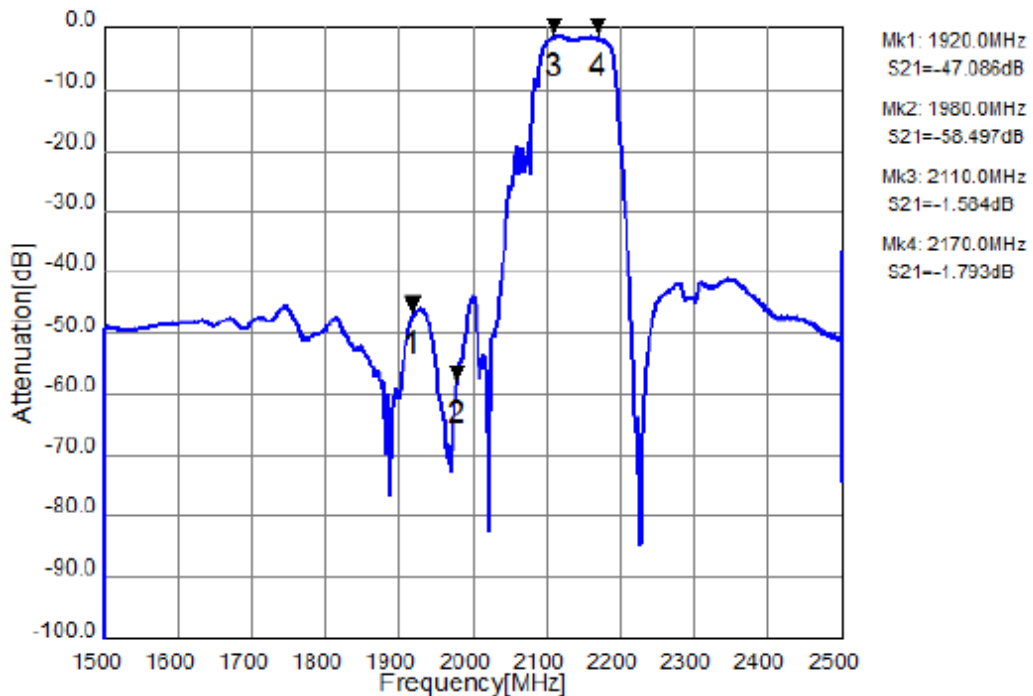
Parameters Description		Unit	Mini.	Typical	Max.	Remarks
Isolation	1920~1980 MHz	dB	53	56	-	
	2110~2170 MHz	dB	50	55	-	

C. FREQUENCY CHARACTERISTICS:

Tx to Ant

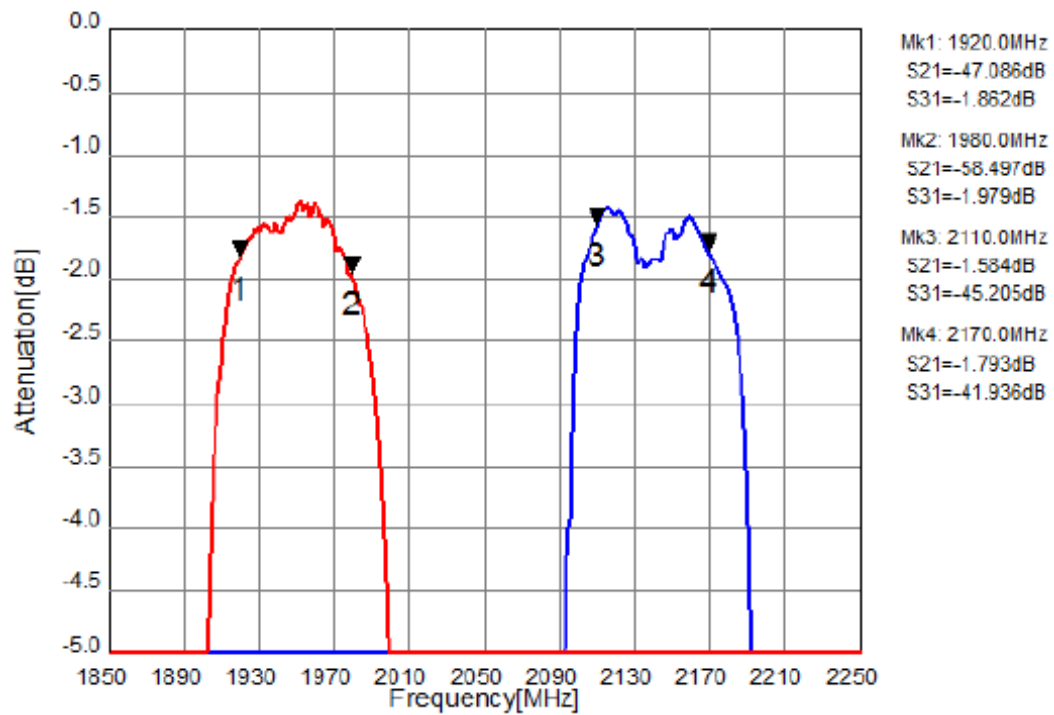


Ant to Rx

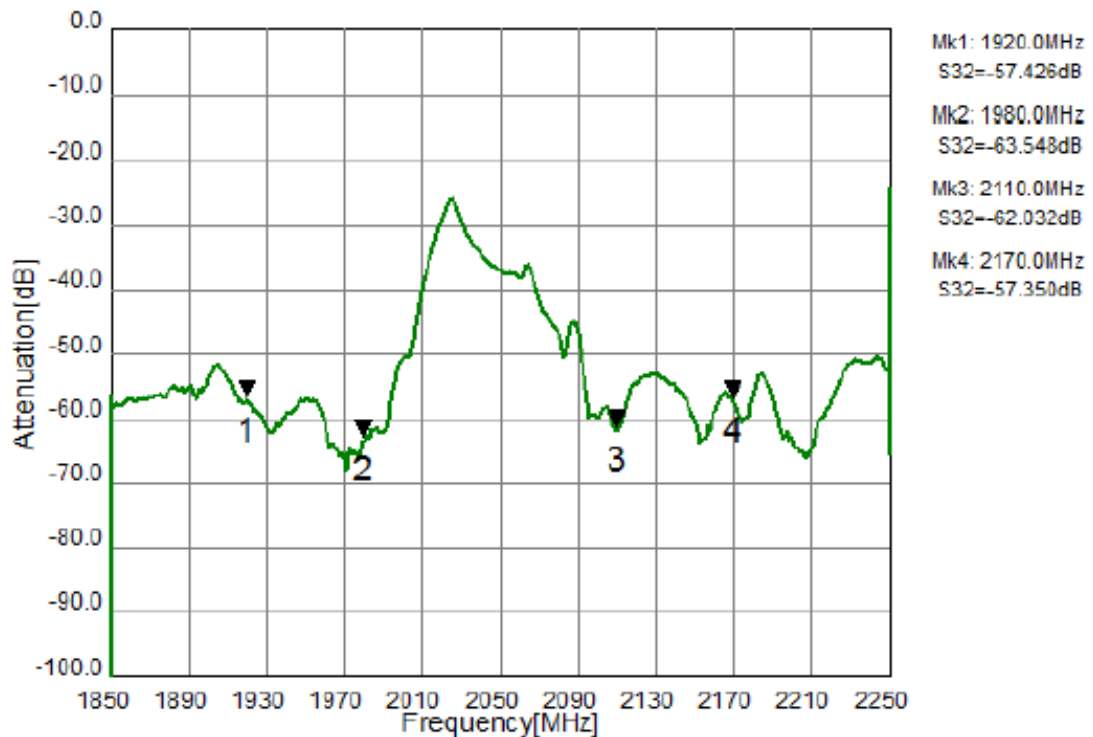


These data **exclude** loss that comes from the test board.

Tx to Ant, Ant to Rx

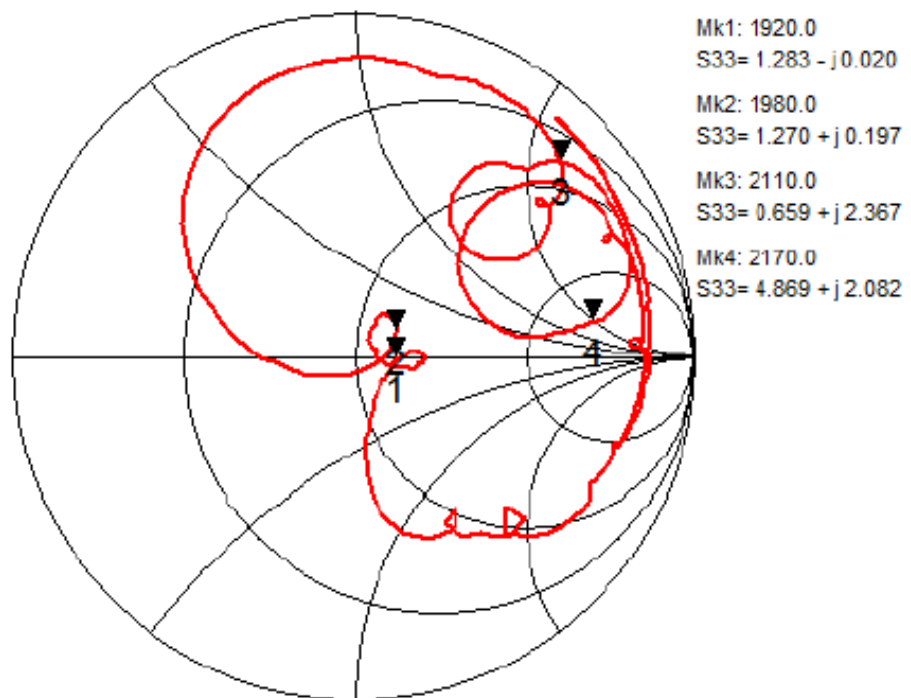
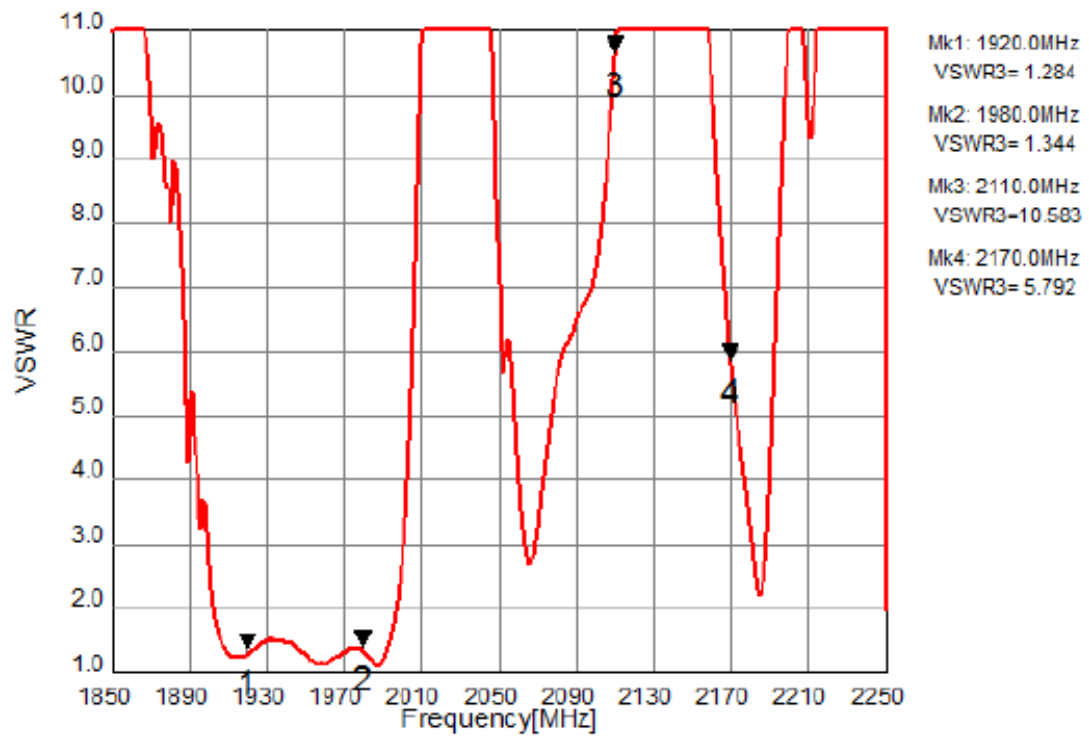


Tx to Rx Isolation

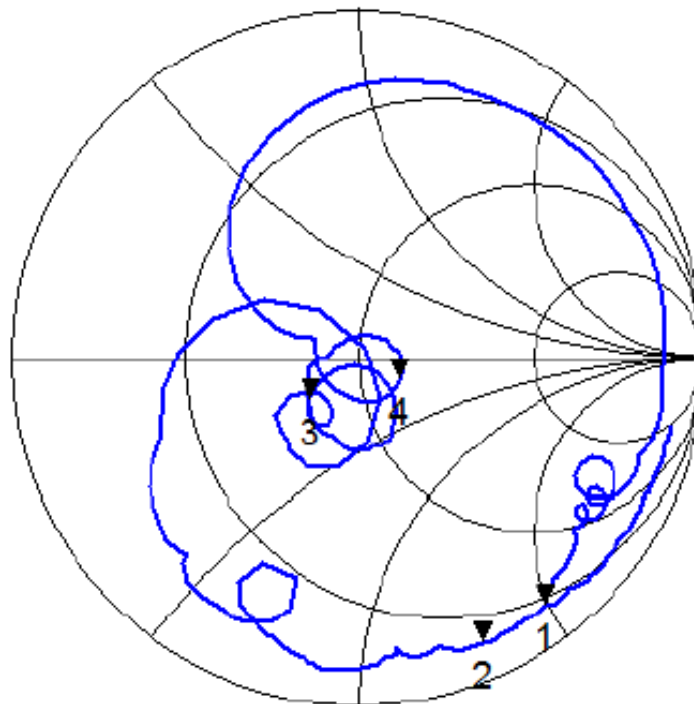
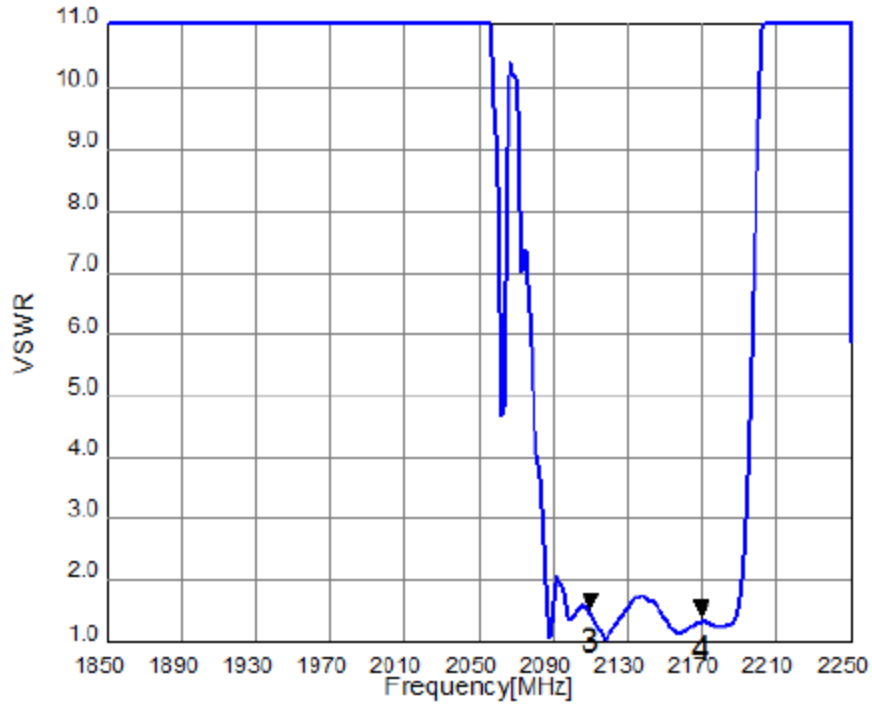


These data **exclude** loss that comes from the test board.

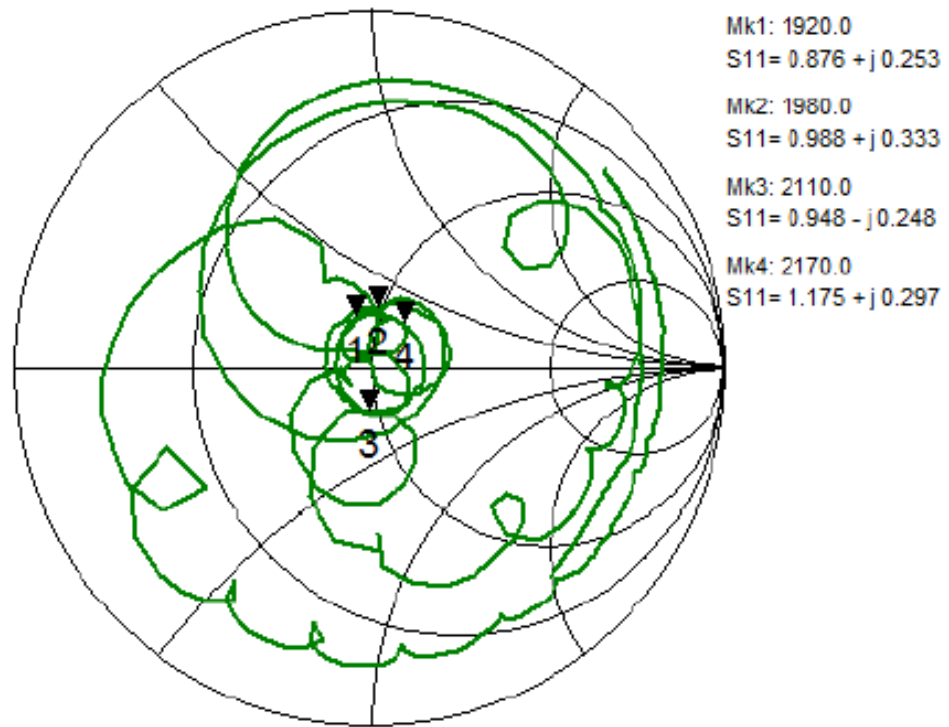
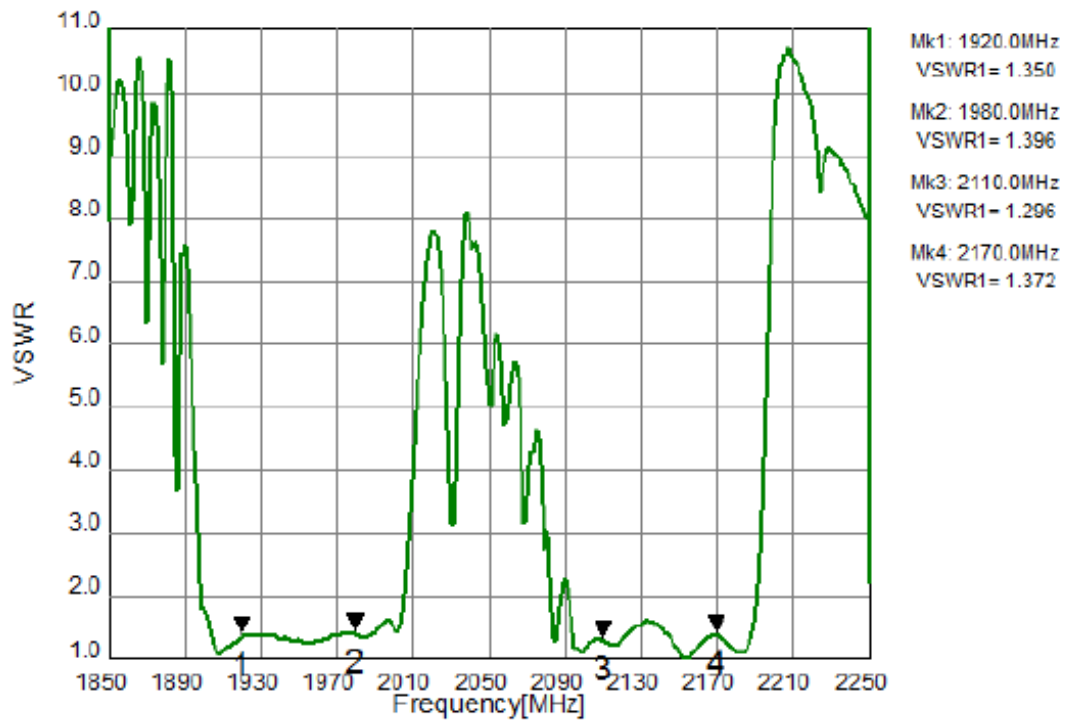
Tx Port



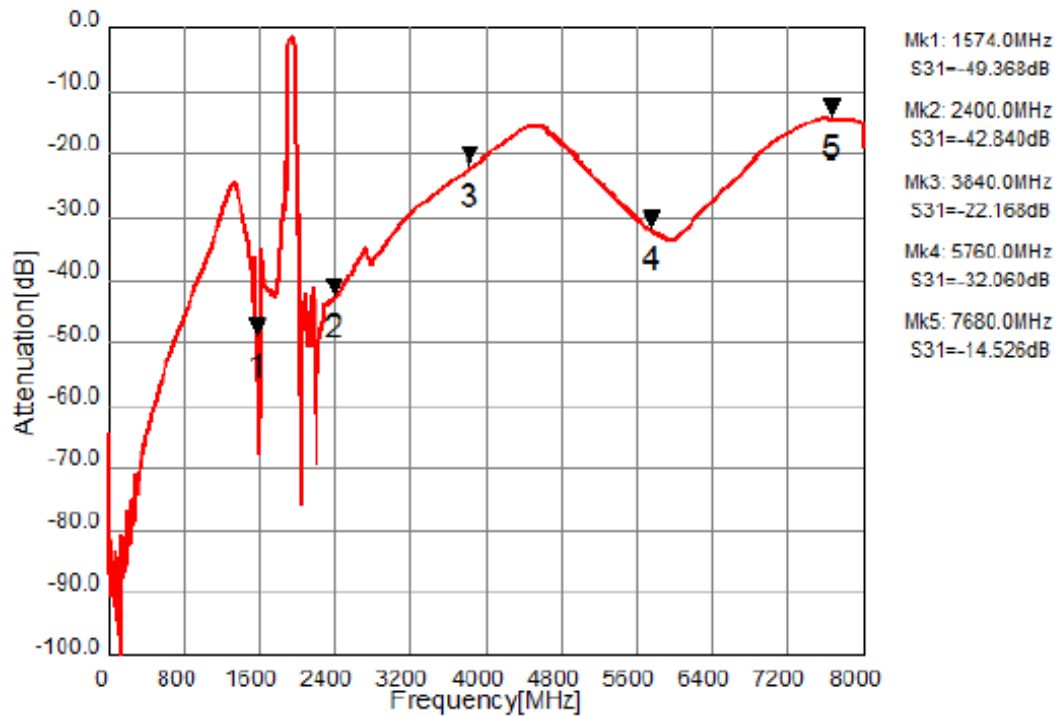
Rx Port



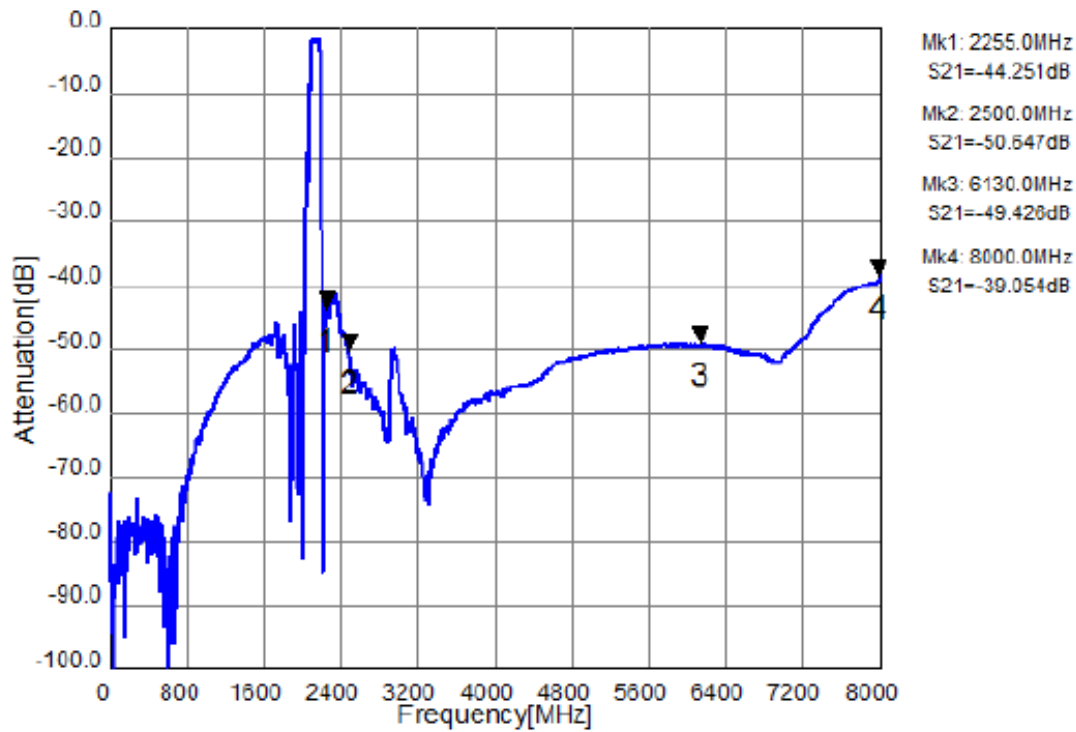
Ant Port



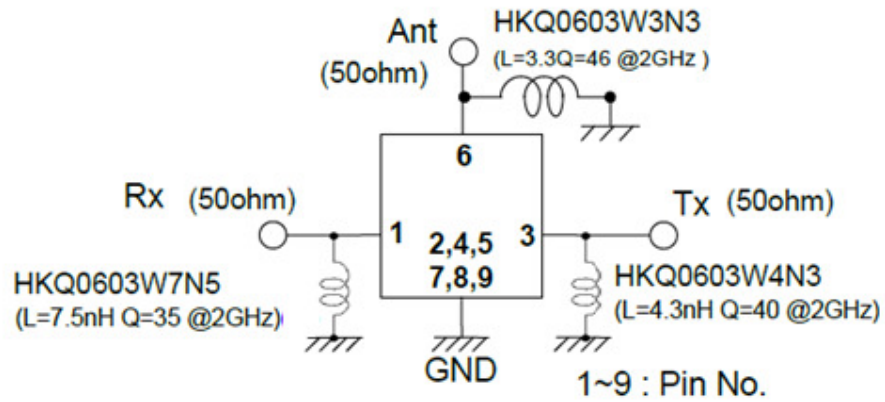
Tx to Ant (Wide span)



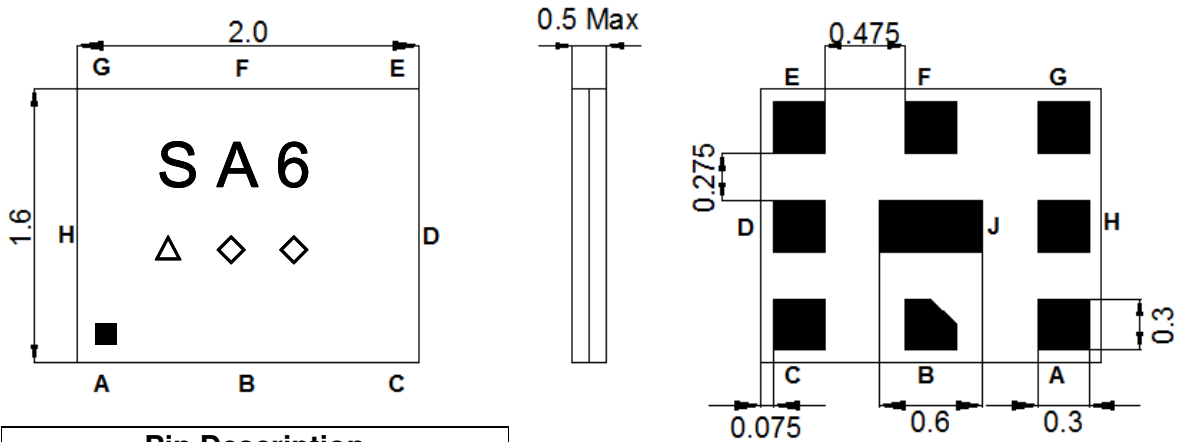
Ant to Rx (Wide span)



D. MEASUREMENT CIRCUIT:



E. OUTLINE DRAWIN:



Pin Description	
2,4,5,7,8,9	Ground
6	Ant
3	Tx
1	Rx

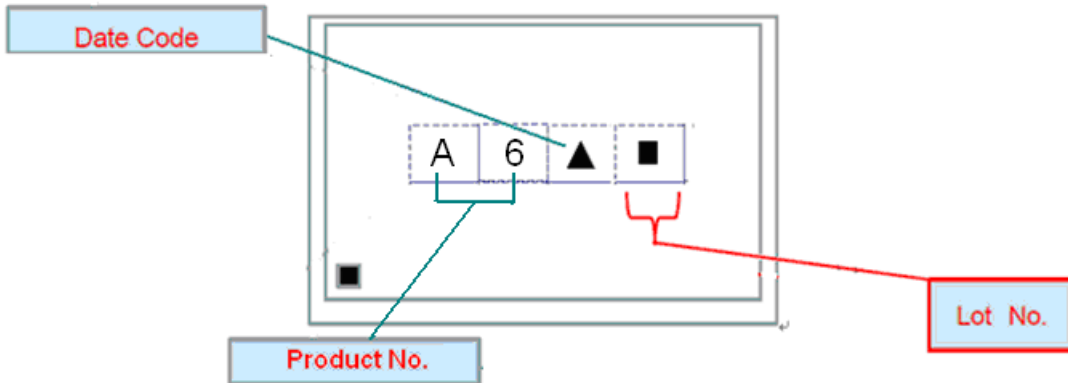
Marking name : SA6

△ : Date code(2016 May → s ,....., 2019 Dec→m.)

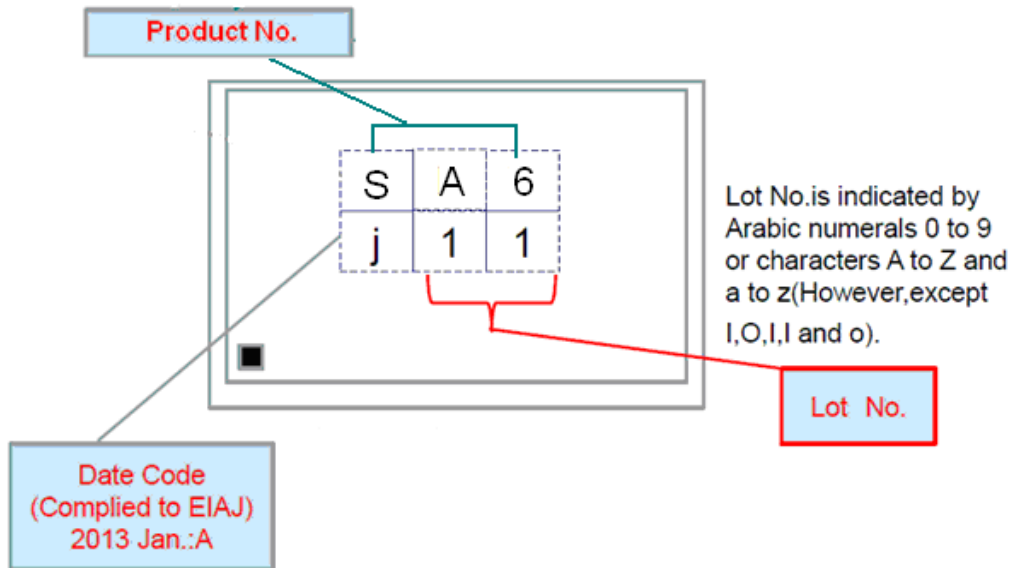
◇◇: Lot Code.
Product Date Code. Follow below table.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m

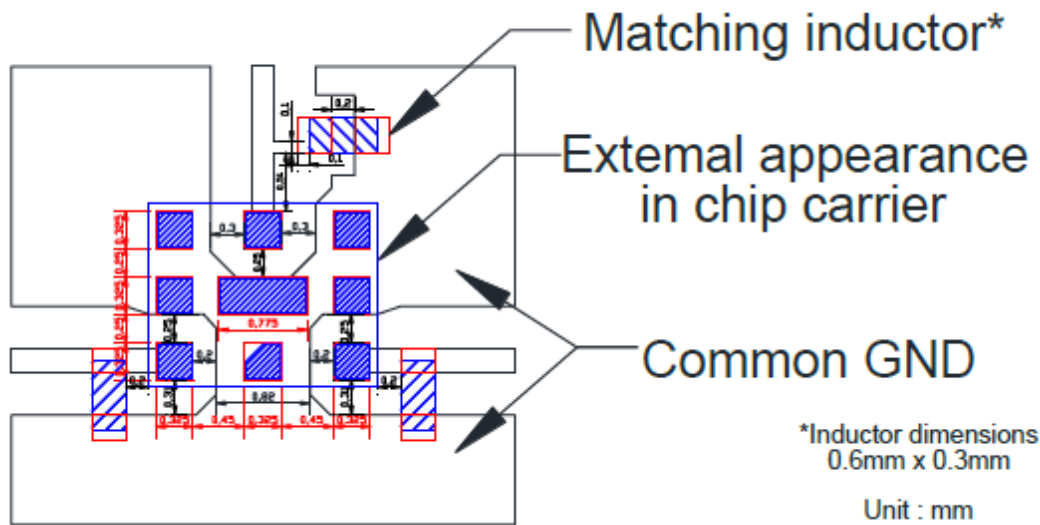
Top View (Sample Run)



Top View (Pilot Run)

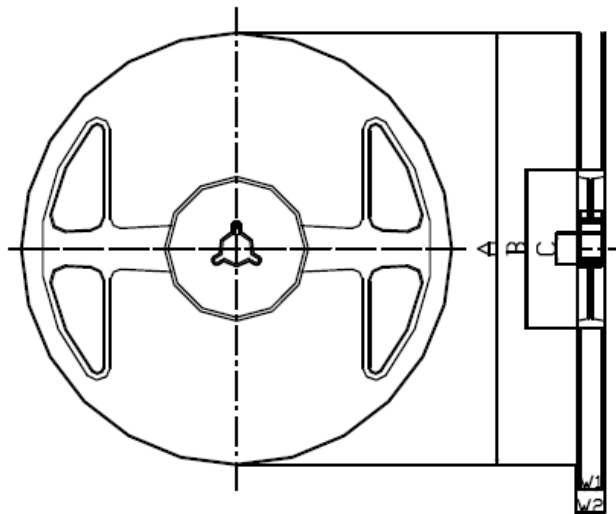


F. FOOTPRINT:



G. PACKING:

1. REEL DIMENSION



Materials of Reel

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

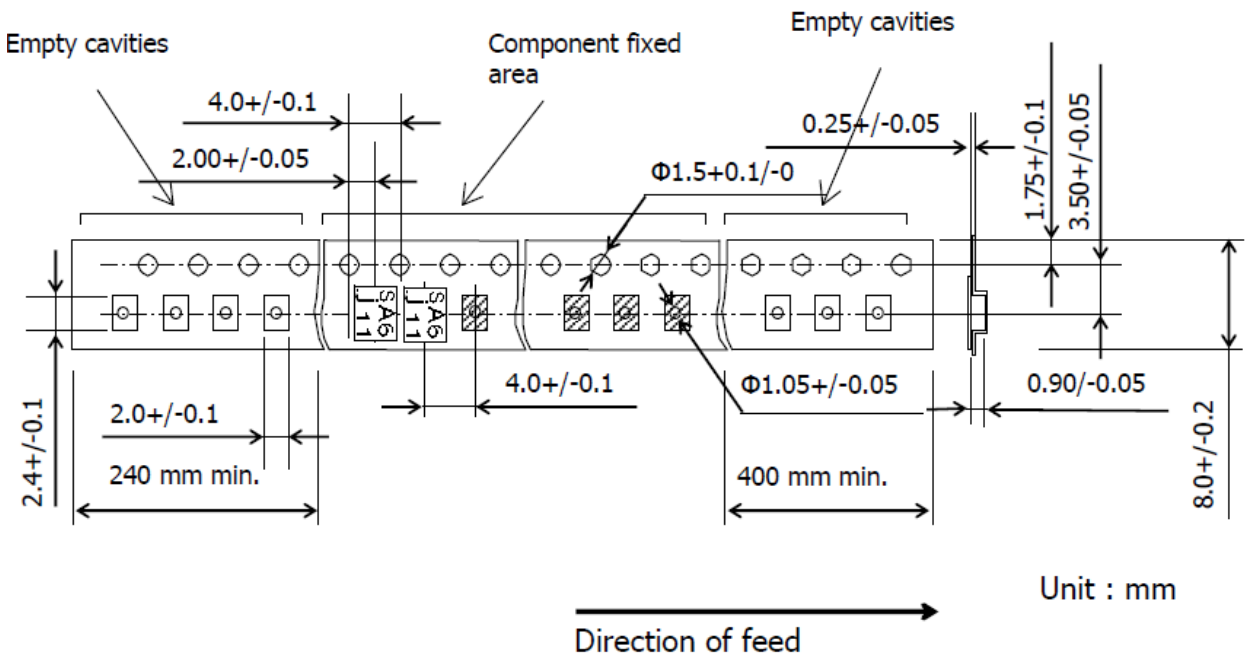
Color : Black

Surface resistance (reference value) : $10^9 \Omega/\text{sq}$ Max.

Unit : mm

Code	Quantity	A	B	C	W1	W2
Z	3,000 pcs	ϕ 180.0 +0.0/-1.5	ϕ 66.0 +/-0.5	ϕ 13.0 +/-0.2	9.0 +1.0/-0.0	11.4 +/-1.0

2. TAPE DIMENSION



H. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 245~260°C peak (min. 10sec).
4. Time : 2 times.

