SAW DPX 793/763MHz 10/10MHz BW Band14 SMD1.8X1.4 mm

MODEL NO.: TF0193A REV. No.: 1.0

A. MAXIMUM RATING:

1. Input power : 30dBm (Ta=+50deg C,50000h,CW)
2. Maximum DC Voltage: +/-5 V
3. Operating temperature range: -30 ℃ to +85 ℃
4. Storage temperature range: -30 ℃ to +85 ℃
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 100V(MM) 200V(HBM)

RoHS Compliant

Lead-free soldering

Electrostatic **S**ensitive **D**evice (**ESD**)

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance(Tx Port): 50 Ω (Single-ended)

Terminating impedance(Rx Port): 50 Ω (Single-ended)

Terminating impedance(Ant Port): 50 //12nH Ω (Single-ended)

Tx to ANT

Parameters Description			Unit	Minimum	Typical	Maximum	Note
Insertion Loss		788 ~ 798 MHz	dB(*1)	-	1.2	1.5	
Ripple		788 ~ 798 MHz	dB	-	0.3	0.7	
VSWR	Tx	788 ~ 798 MHz	-	-	1.3	2.0	
	ANT		-	-	1.4	2.0	
Attenuation:							
758 ~ 768 MHz			dB	49	58	-	-
769 ~ 775 MHz			dB	17		-	45℃~+85℃
			dB	20	36	-	-30℃~+45℃
799 ~ 805 MHz			dB	0.7	1.1	-	
869 ~ 894 MHz			dB	40	44	-	
1554 ~ 1565 MHz			dB	42	47		
1565 ~ 1606 MHz			dB	44	47		
1800 ~ 1880 MHz			dB	44	50		
1930 ~ 2000 MHz			dB	46	52		
2364 ~ 2394 MHz			dB	33	52		
2400 ~ 2500 MHz			dB	32	50		
3152 ~ 3192 MHz			dB	27	42		
4900 ~ 5950 MHz			dB	10	17		

ANT to Rx

Parameters Description			Unit	Minimum	Typical	Maximum	Note
Insertion Loss		758.25 ~ 767.75 MHz	dB(*1)	-	2.2	3.2	
		758 ~ 768 MHz	dB		2.3	3.3	
Ripple		758 ~ 768 MHz	dB	-	0.7	2.0	
VSWR	Tx	758 ~ 768 MHz	-	-	1.6	2.0	
	ANT		-	-	1.6	2.0	
Attenuation:							
10 ~ 698 MHz			dB	45	55	-	-
698 ~ 716 MHz			dB	43	56		
716 ~ 728 MHz			dB	27	39		
776~ 777.34 MHz			dB	22		-	-30℃~ 0℃
			dB	35	41	-	0℃~+85℃
777.34 ~ 780 MHz			dB	35	40	-	
780 ~ 787 MHz			dB	35	41	-	
788 ~ 798 MHz			dB	50	61		
798 ~ 6000 MHz			dB	30	36		
1546 ~ 1566 MHz			dB	46	53		
1710 ~ 1980 MHz			dB	42	52		
2334 ~ 2364 MHz			dB	38	50		
2400 ~ 2690 MHz			dB	40	50		

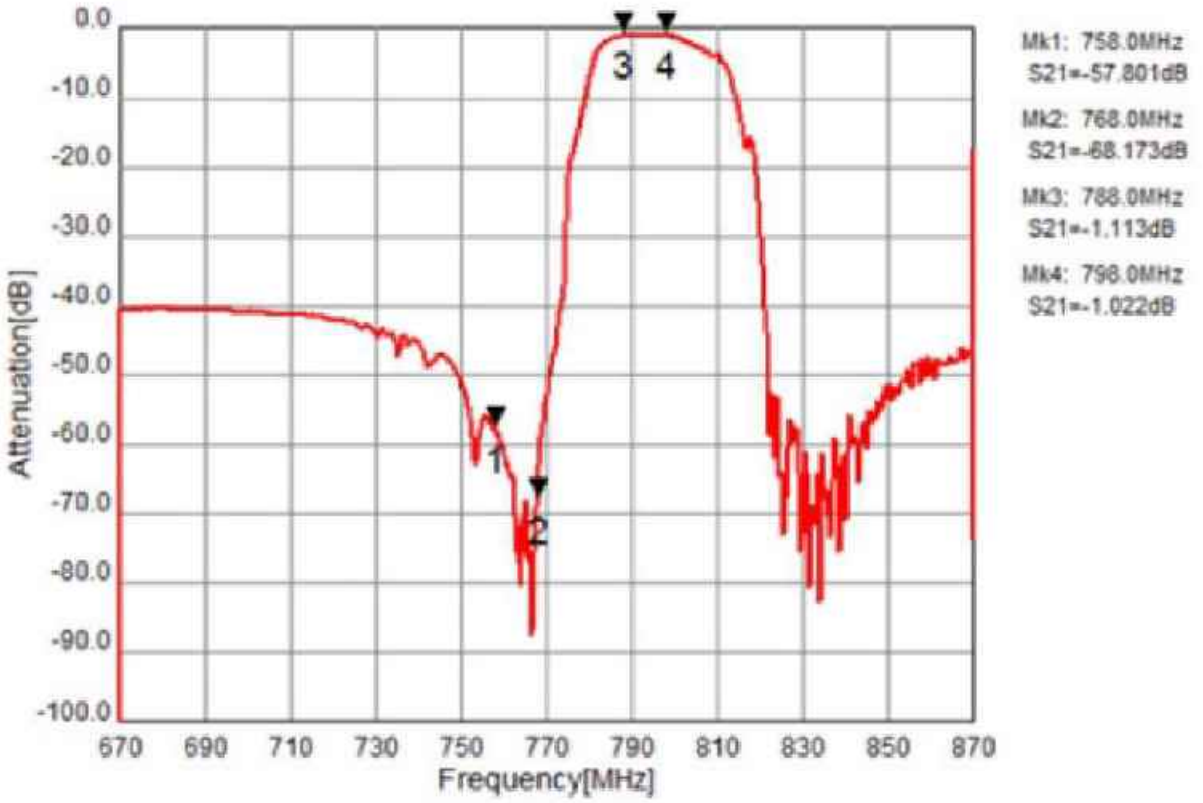
Tx to Rx

Isolation	788 ~ 798 MHz	dB	59	63	-	
	758 ~ 768 MHz	dB	54	57	-	

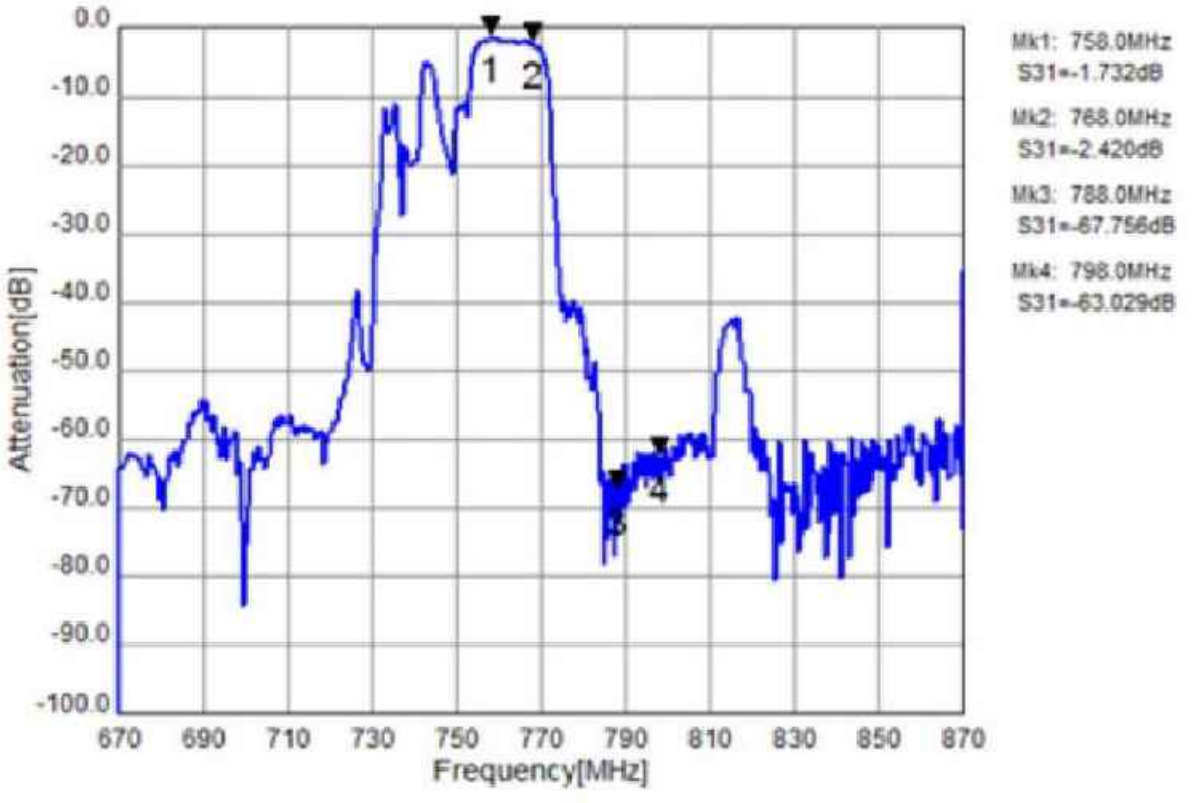
(*1) Specification of insertion loss excludes loss that comes from the test board.

C. Frequency Characteristics:

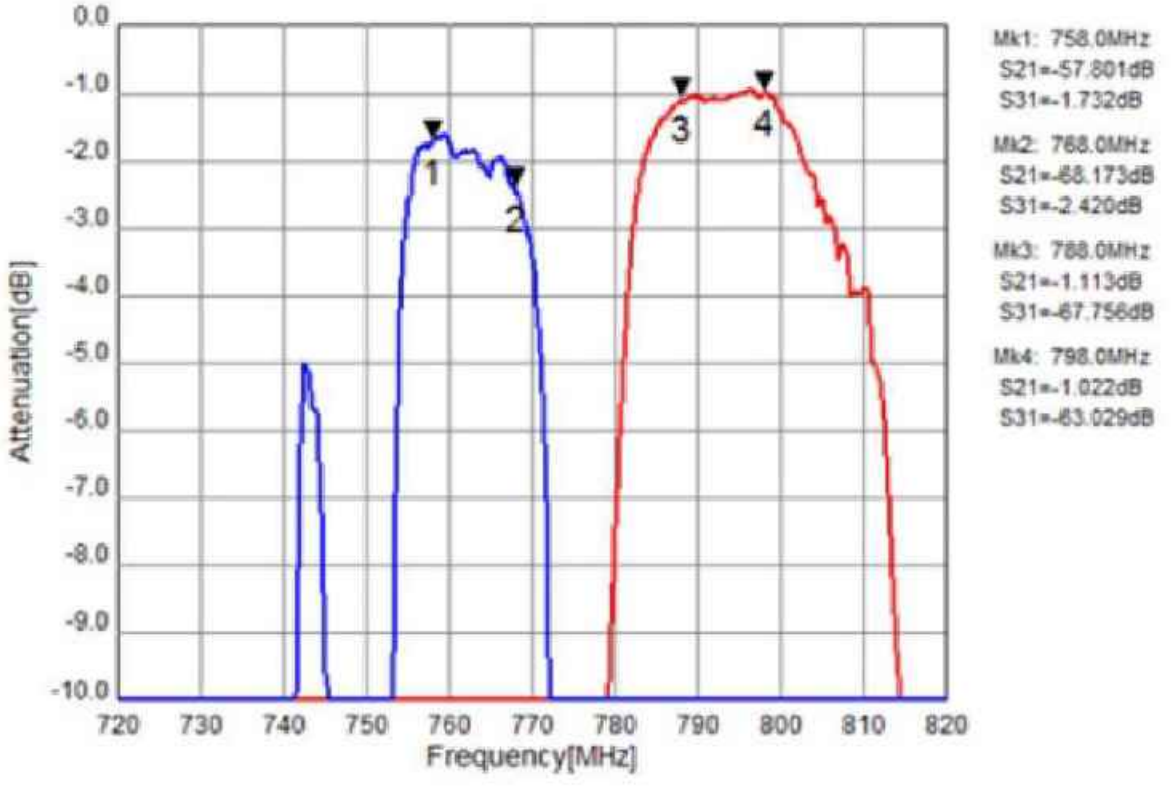
Tx to Ant



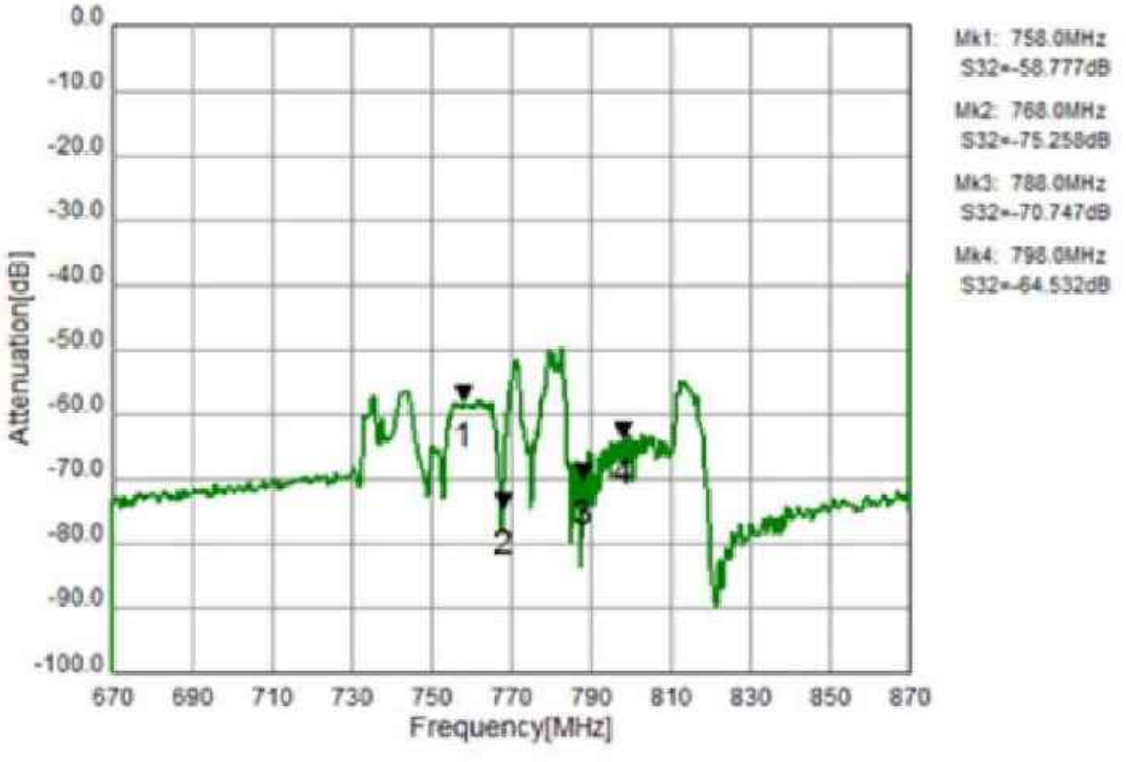
Ant to Rx



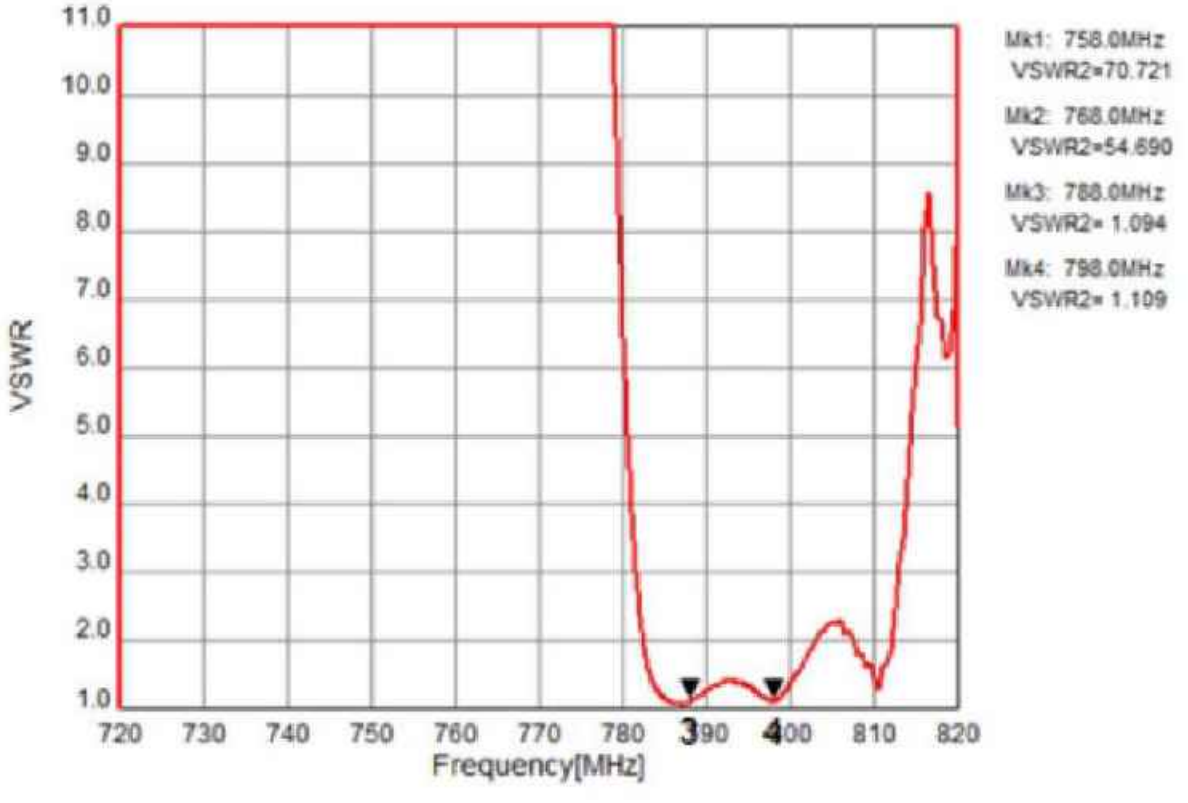
Tx to Ant, Ant to Rx

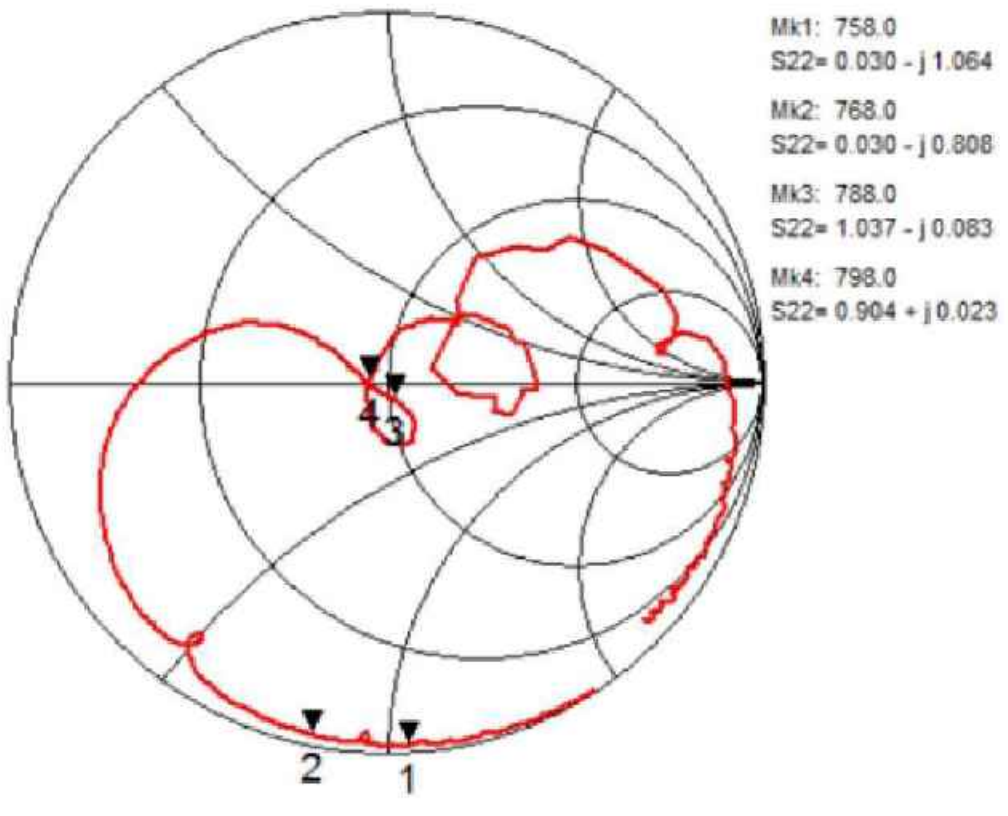


Tx to Rx Isolation

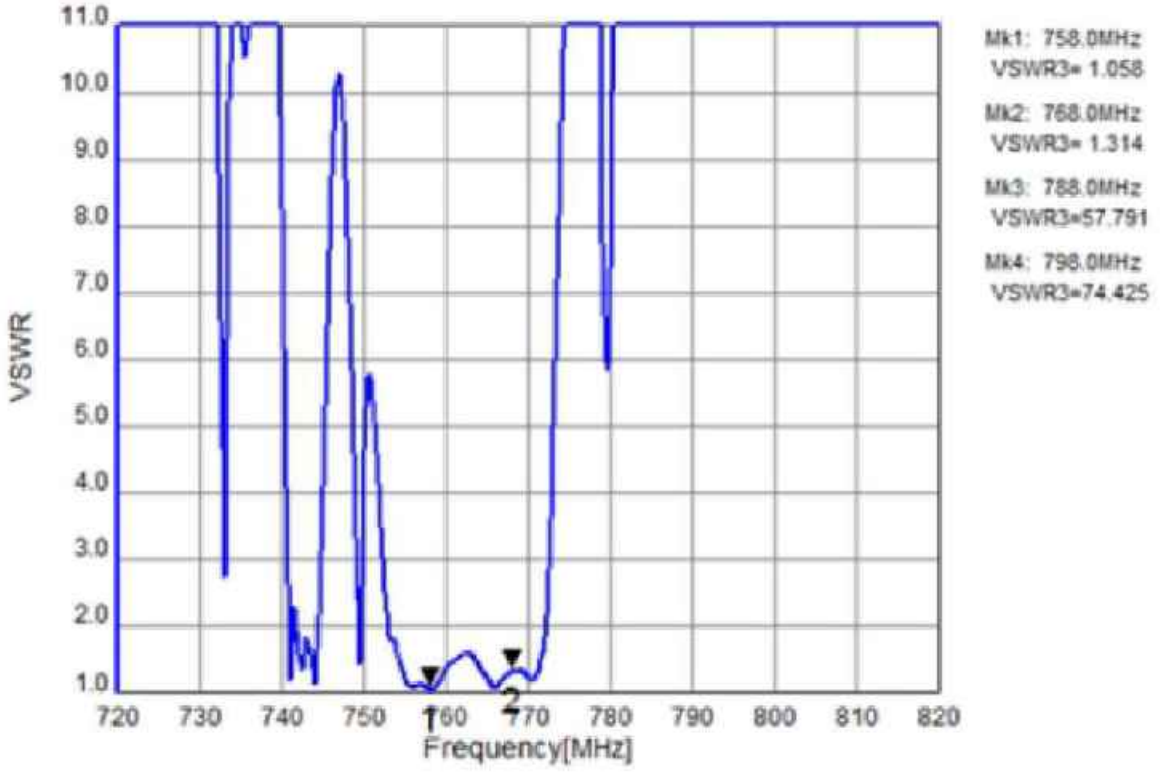


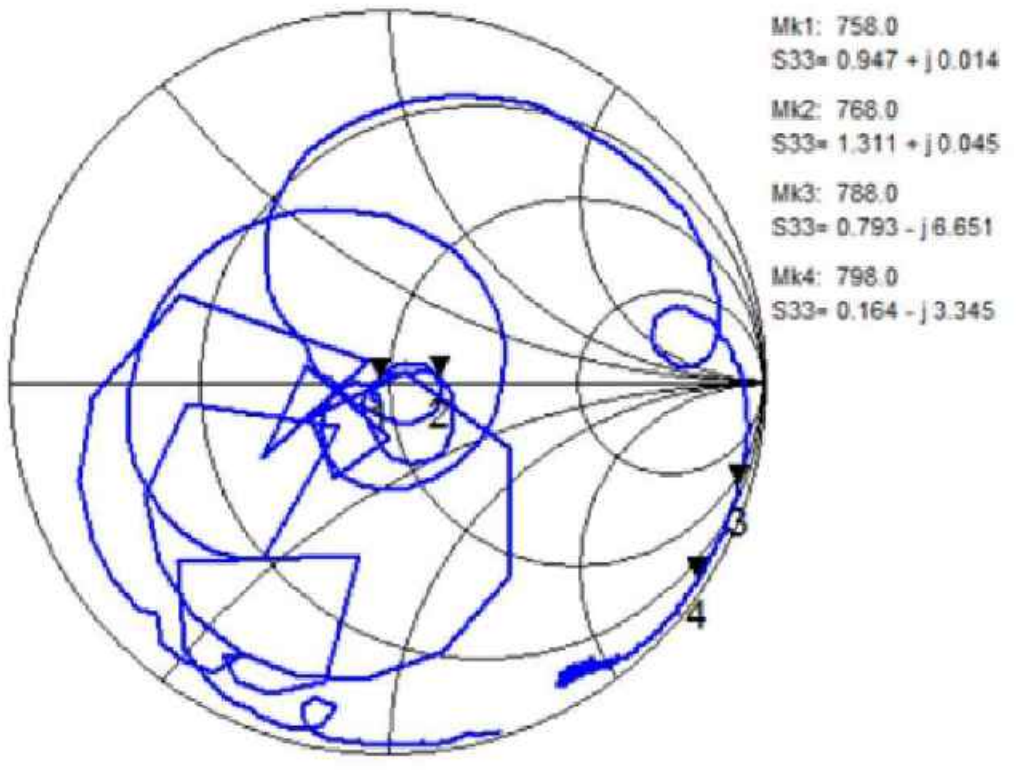
Tx Port


11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
VSWR
720
730
740
750
760
770
780
790
800
810
820
Frequency[MHz]
Mk1: 758.0MHz
VSWR2=70.721
Mk2: 768.0MHz
VSWR2=54.690
Mk3: 788.0MHz
VSWR2= 1.094
Mk4: 798.0MHz
VSWR2= 1.109

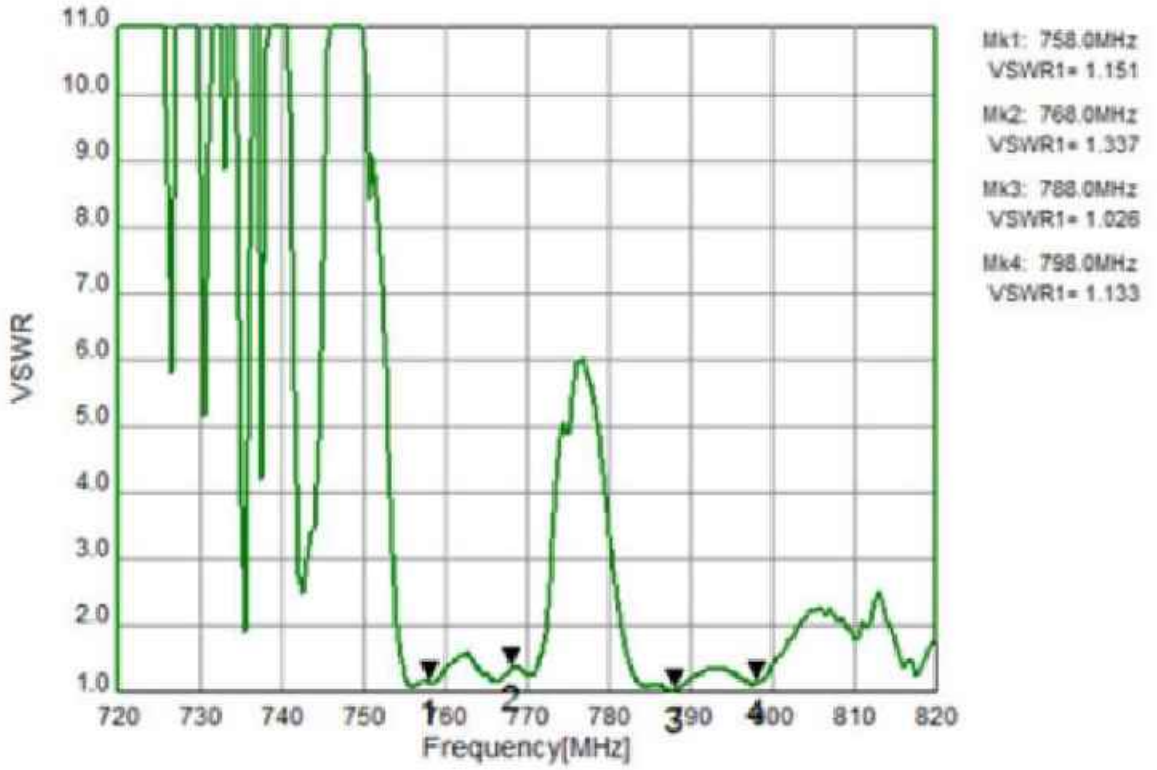

Mk1: 758.0
S22= 0.030 - j 1.064
Mk2: 768.0
S22= 0.030 - j 0.808
Mk3: 788.0
S22= 1.037 - j 0.083
Mk4: 798.0
S22= 0.904 + j 0.023
1
2
3
4

Rx Port


VSWR
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
720
730
740
750
760
770
780
790
800
810
820
Frequency[MHz]
1
2
Mk1: 758.0MHz
VSWR3= 1.058
Mk2: 768.0MHz
VSWR3= 1.314
Mk3: 788.0MHz
VSWR3=57.791
Mk4: 798.0MHz
VSWR3=74.425


Mk1: 758.0
S33= 0.947 + j 0.014
Mk2: 768.0
S33= 1.311 + j 0.045
Mk3: 788.0
S33= 0.793 - j 6.651
Mk4: 798.0
S33= 0.164 - j 3.345
1
2
3
4

Ant Port

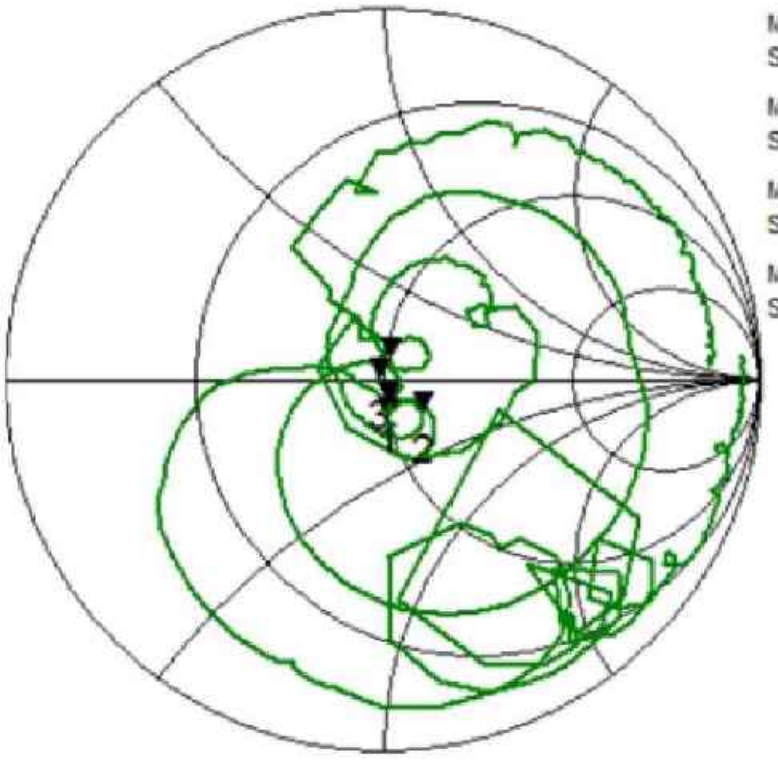


Mk1: 758.0MHz
VSWR1= 1.151

Mk2: 768.0MHz
VSWR1= 1.337

Mk3: 788.0MHz
VSWR1= 1.026

Mk4: 798.0MHz
VSWR1= 1.133



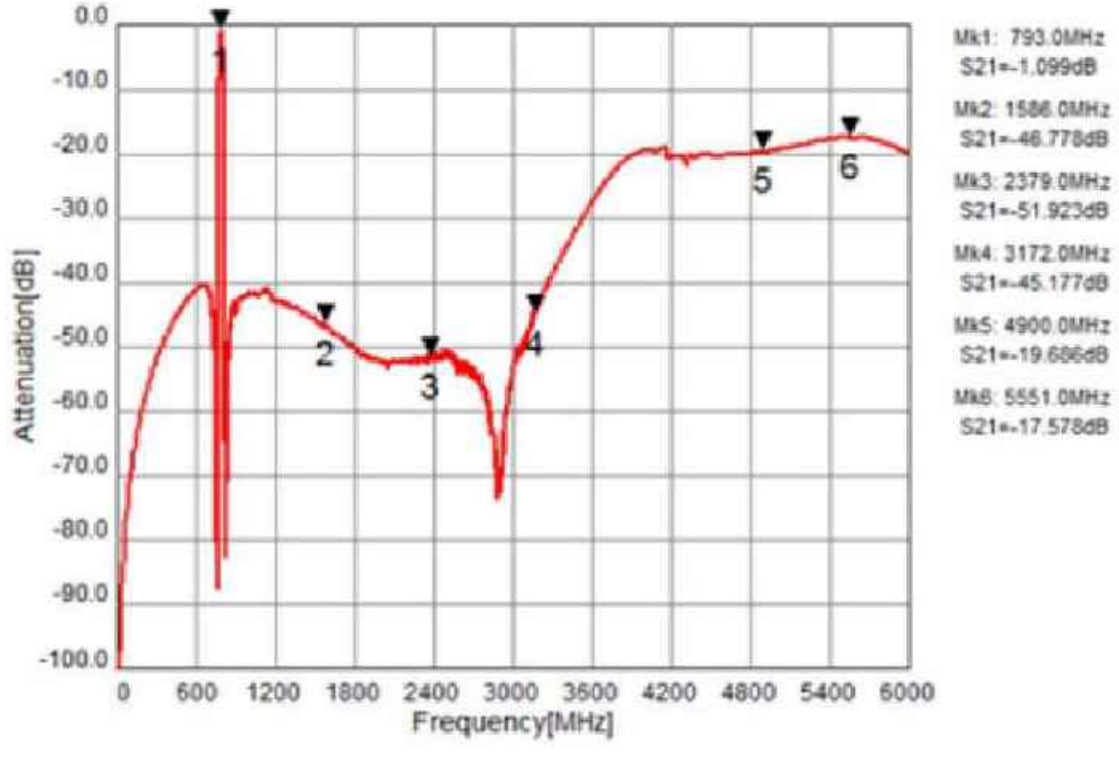
Mk1: 758.0
S11= 1.021 - j 0.140

Mk2: 768.0
S11= 1.217 - j 0.237

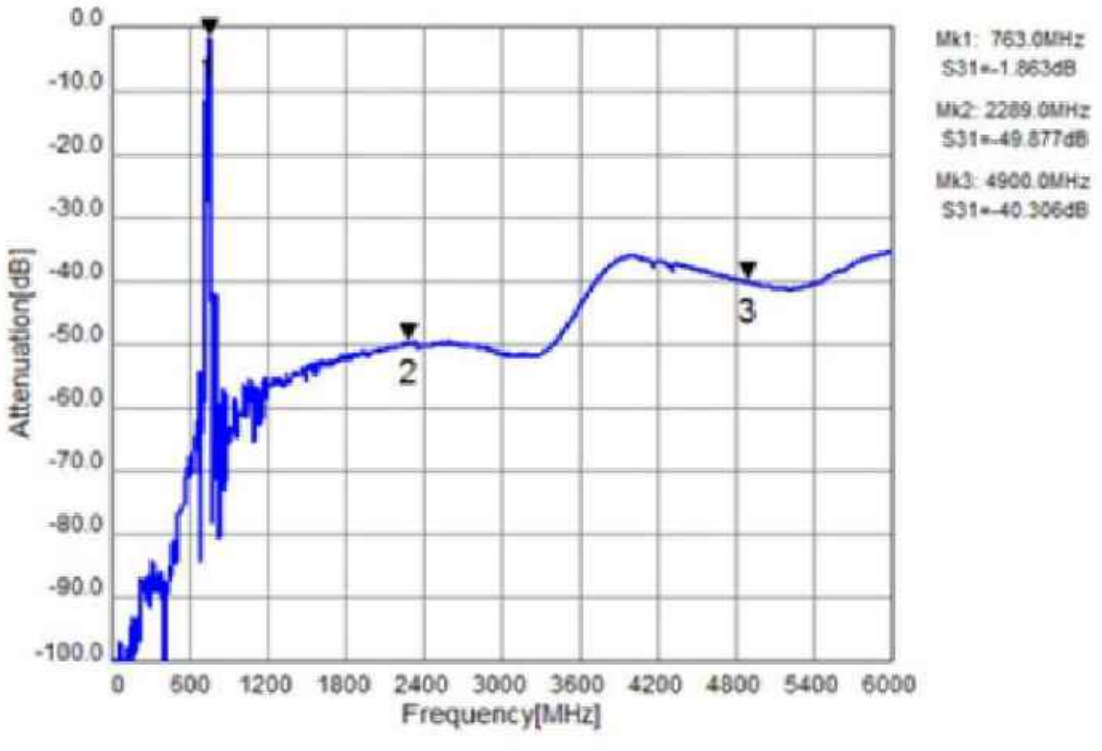
Mk3: 788.0
S11= 0.975 + j 0.005

Mk4: 798.0
S11= 1.038 + j 0.121

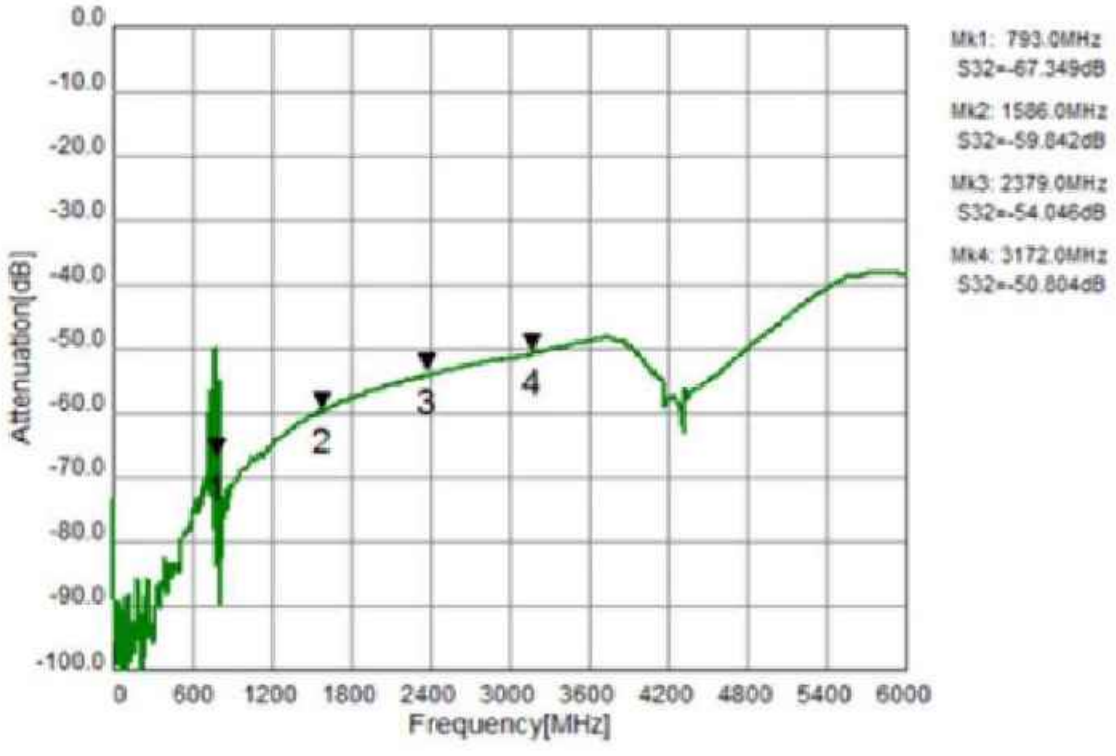
Tx to Ant (Wide span)



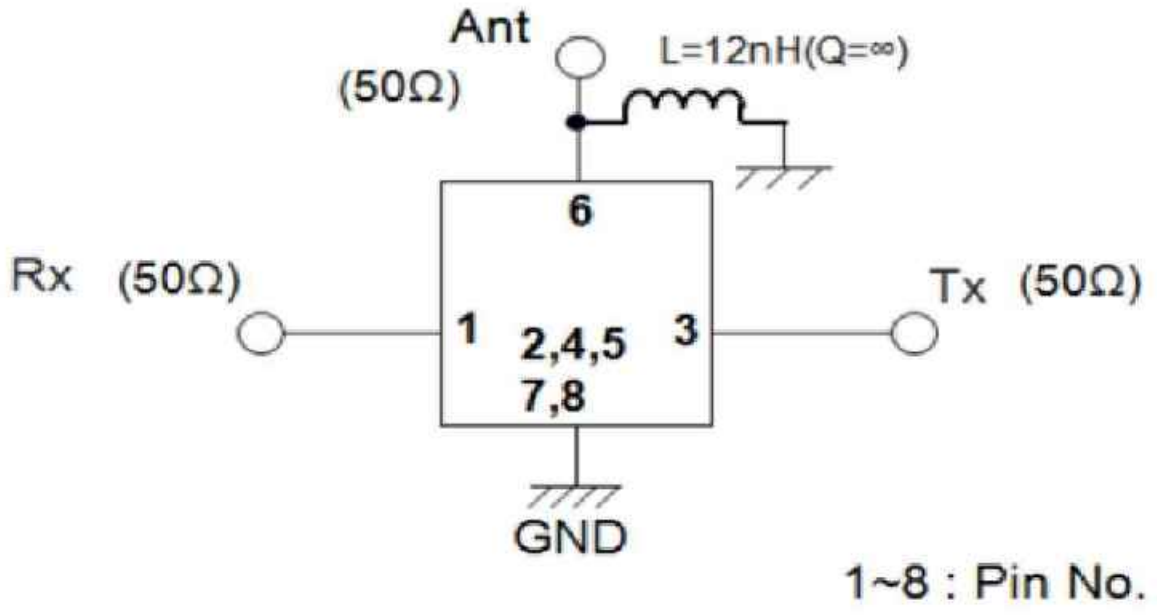
Ant to Rx (Wide span)



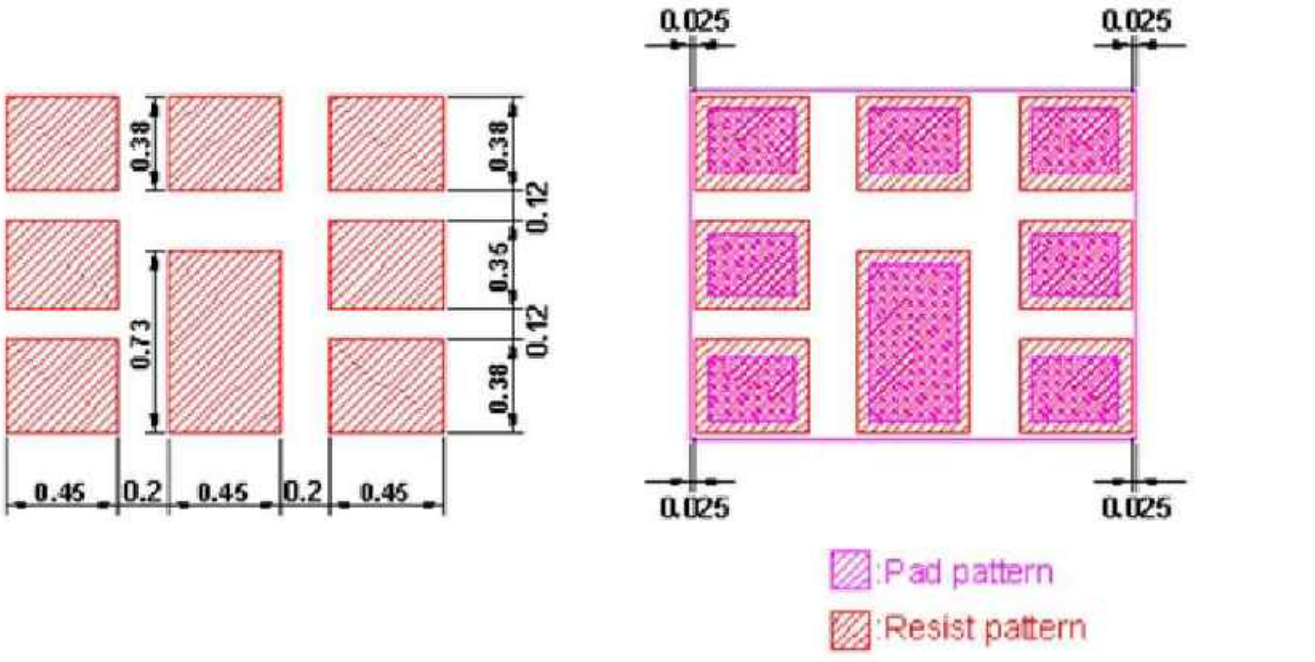
Tx to Rx Isolation (Wide span)



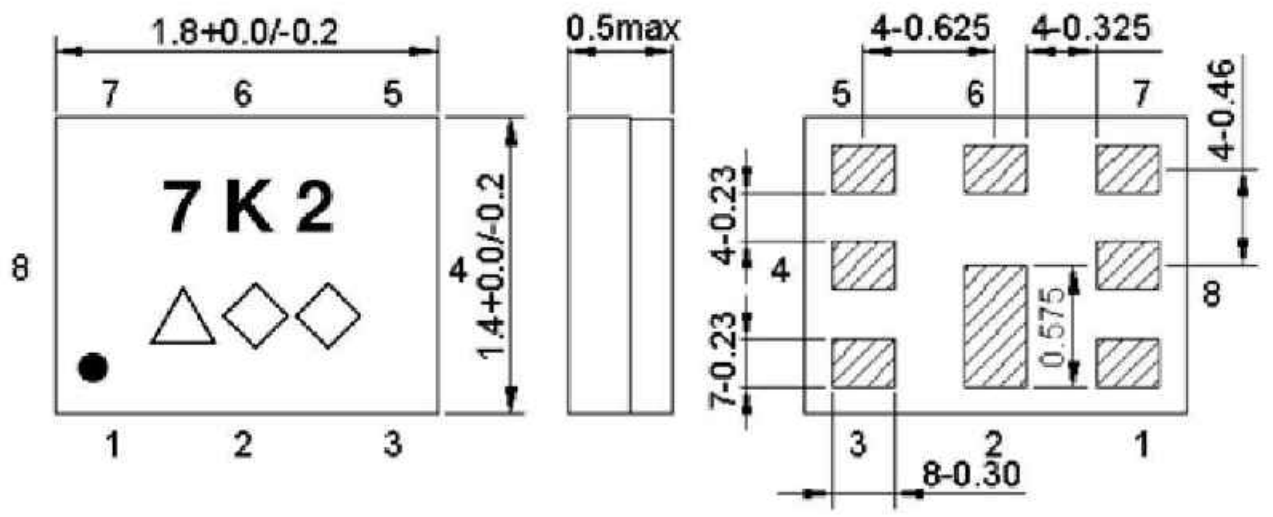
D. MEASUREMENT CIRCUIT:



E. PCB Footprint:



F.OUTLINE DRAWING: (Mass Production)



Marking name :**7K2**

△: 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
2020	n	p	q	r	s	t	u	v	w	x	y	z
2021	A	B	C	D	E	F	G	H	J	K	L	M

Pin assignment

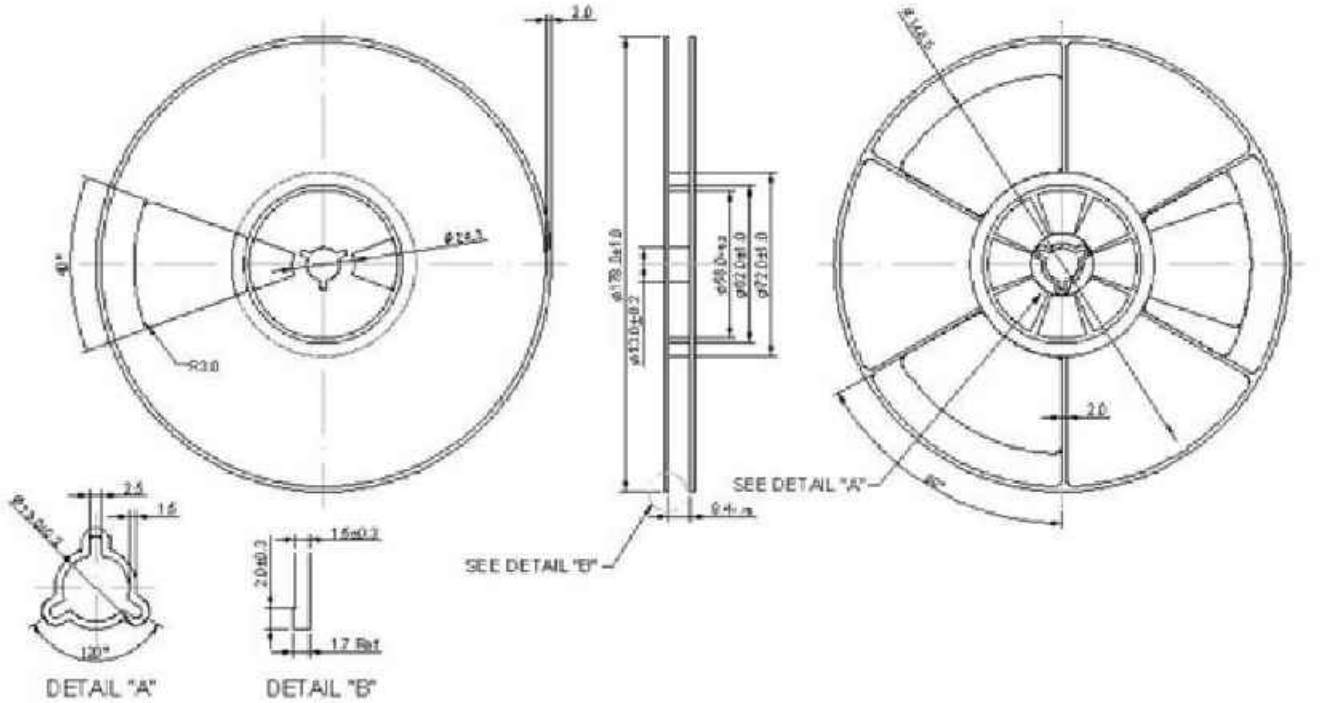
Pin No.	Pin name	Description
1	Rx	Receiver
2	GND	Ground
3	Tx	Transmitter
4	GND	Ground
5	GND	Ground
6	Ant	Antenna
7	GND	Ground
8	GND	Ground

Figure 1. Dimensions and Pin assignment

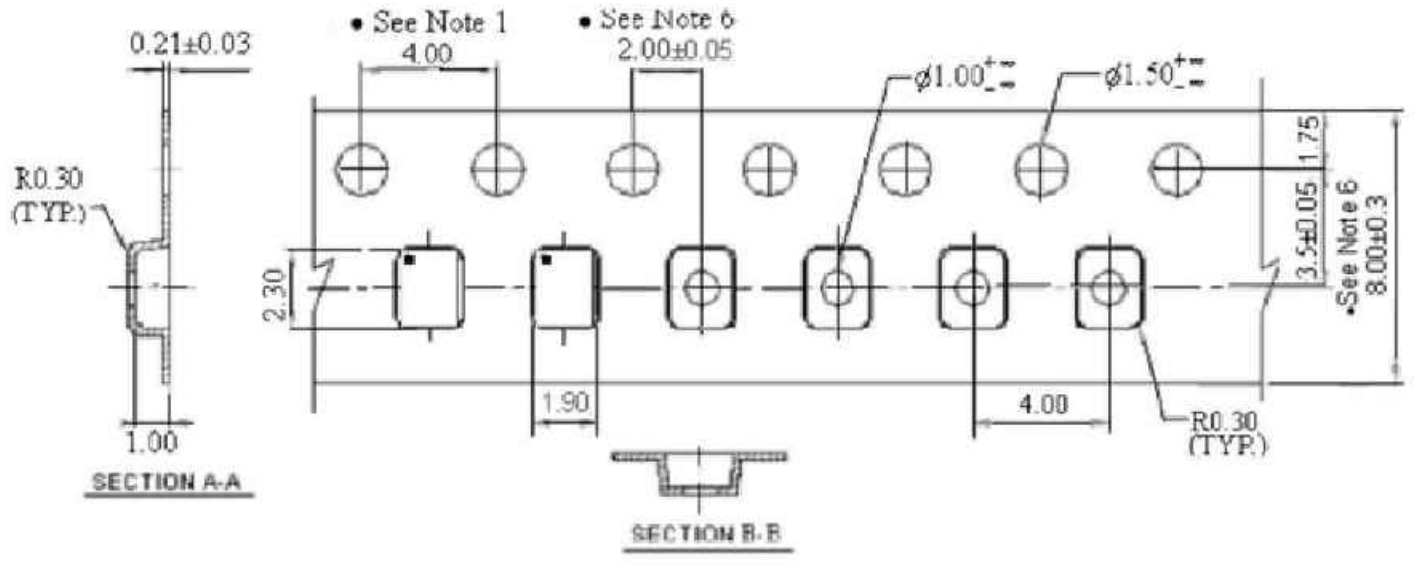
G. PACKING:

1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



2.TAPE DIMENSION



H. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 260℃+0/-5℃ peak (20~40sec).
4. Time: 2 times.