



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Name: SAW Filter 1585.653MHz 40.466MHz BW GPS (GNSS) Rx SMD 1.1x0.9 mm

TST Parts No.: TA1859A

Customer Parts No.: _____

Customer signature required

Company: _____

Division: _____

Approved by : _____

Date: _____

Checked by: _____ Hayley Chou *Hayley Chou*

Approval by: _____ Andy Yu *Andy Yu*

Date: _____ 2015/07/13

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.



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SAW Filter 1585.653MHz 40.466MHz BW GPS (GNSS) Rx SMD 1.1x0.9 mm

MODEL NO.:TA1859A

REV.1.0

A. MAXIMUM RATING:

1. Maximum input power: +10dBm (In Passband)
2. Maximum DC Voltage : +/-5 V (Device only)
3. Operating temperature: -30°C to +85°C
4. Device storage temperature: -40°C to +100°C
5. Moisture Sensitive Level: Level 1

RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

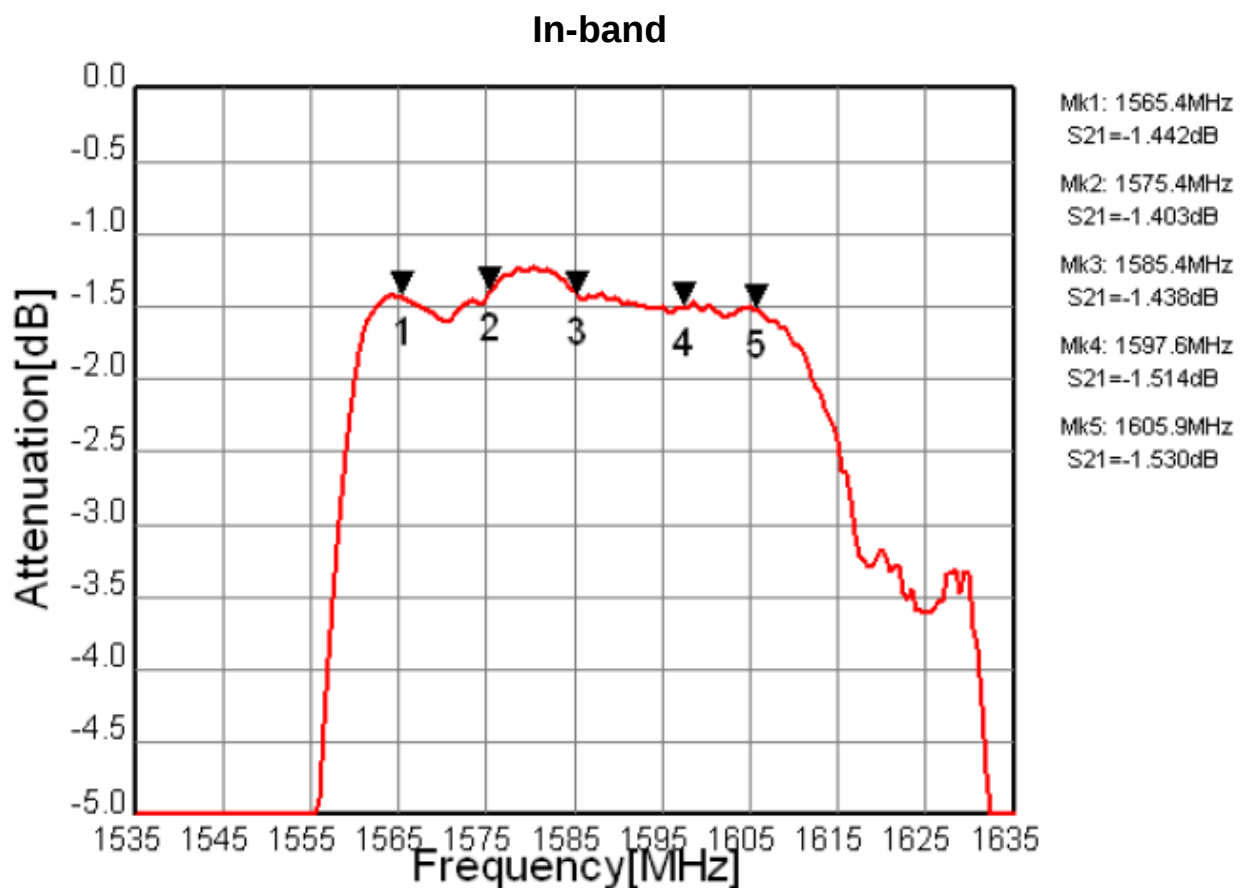
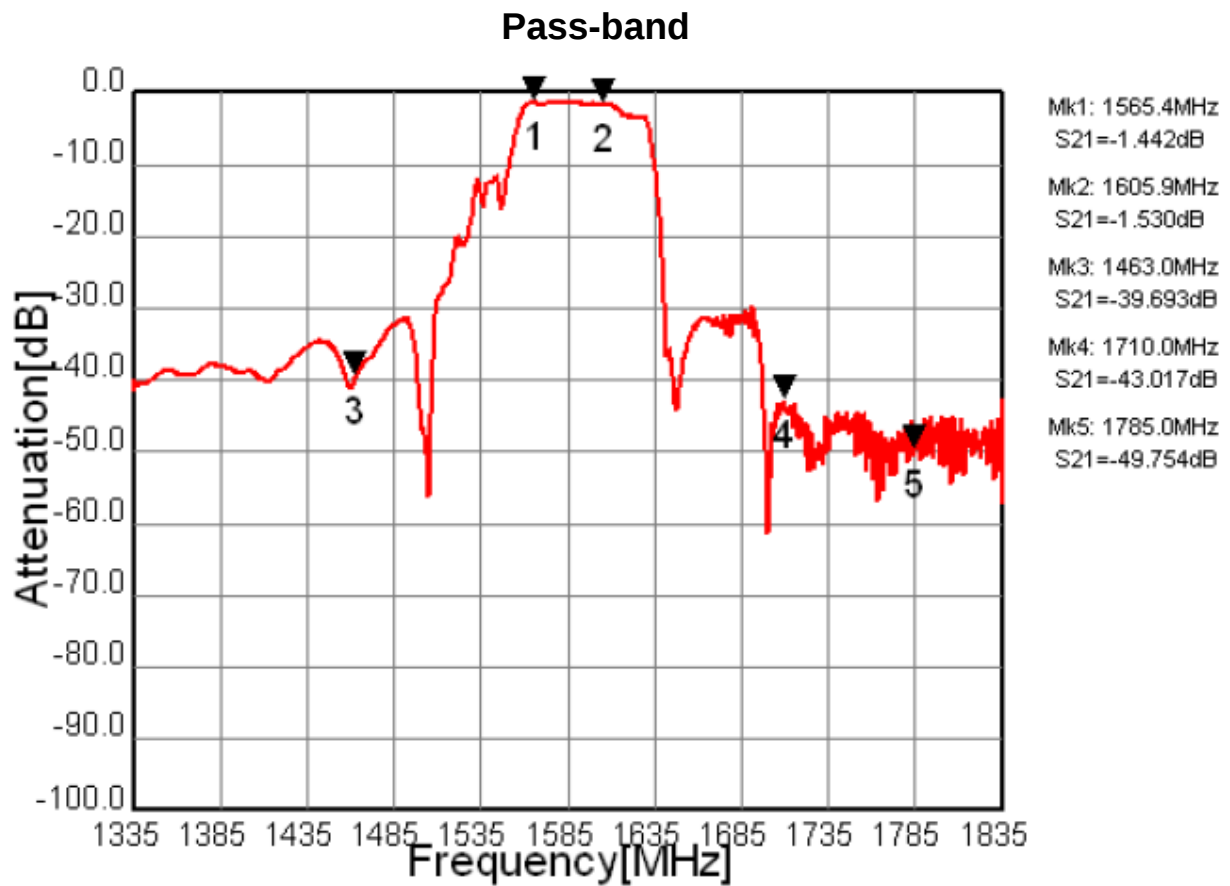
Terminating source impedance: $Z_s = 50 \Omega$ (Single-ended)

Terminating load impedance: $Z_L = 100//18nH \Omega$ (Balanced)

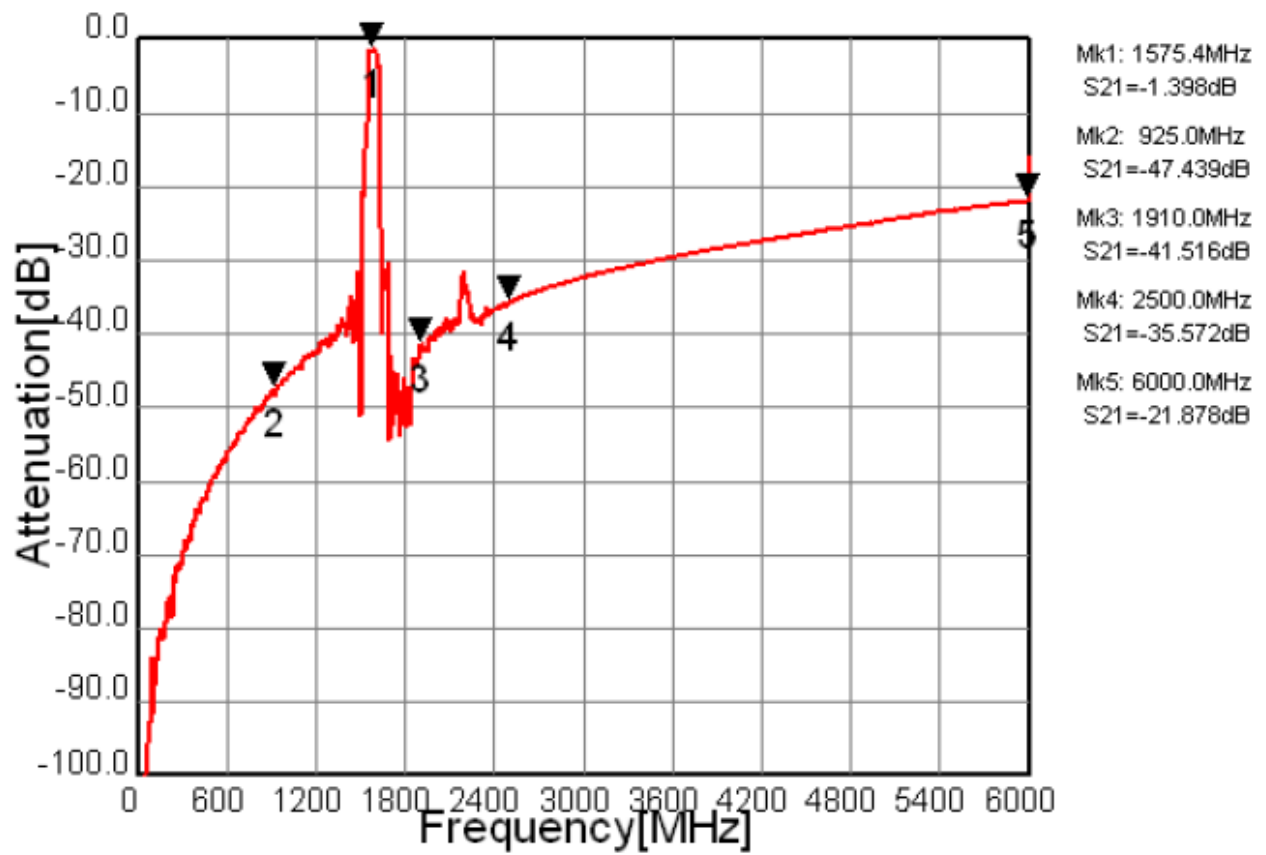
Parameters Description		Unit	Minimum	Typical	Maximum
Insertion Loss	1574.42~1576.42 MHz	dB(*1)	-	1.5	1.9
	1565.42~1585.42 MHz	dB(*1)	-	1.6	2.0
	1597.5515~1605.8860 MHz	dB(*1)	-	1.7	2.1
VSWR(Input/Output)	1574.42~1576.42 MHz	-	-	1.4	2.0
	1565.42~1585.42 MHz	-	-	1.5	2.0
	1597.5515~1605.8860 MHz	-	-	1.6	2.0
Amplitude balance ((S_{21}/S_{31}))	1574.42~1576.42 MHz	dB	-1.5	+0.5/+0.7	+1.5
	1565.42~1585.42 MHz	dB	-5	-0.2/+2.7	+5
	1597.5515~1605.8860 MHz	dB	-1.8	+1/-0.6	+1.8
Phase balance (($\Phi S_{21}-\Phi S_{31}+180$))	1574.42~1576.42 MHz	deg	-10	+5/+7	+10
	1565.42~1585.42 MHz	deg	-10	-2/+7	+10
	1597.5515~1605.8860 MHz	deg	-15	-10/-8	+15
Attenuation:					
10~794 MHz		dB	45	50	-
794~925 MHz		dB	40	47	-
925~960 MHz		dB	40	46	-
1427~1463 MHz		dB	30	34	-
1710~1785 MHz		dB	35	42	-
1850~1910 MHz		dB	35	42	-
1920~1980 MHz		dB	34	39	-
2401~2483 MHz		dB	30	35	-
2500~2570 MHz		dB	30	34	-

(*1) Specification of insertion loss includes loss that comes from the test board. (0.1dB)

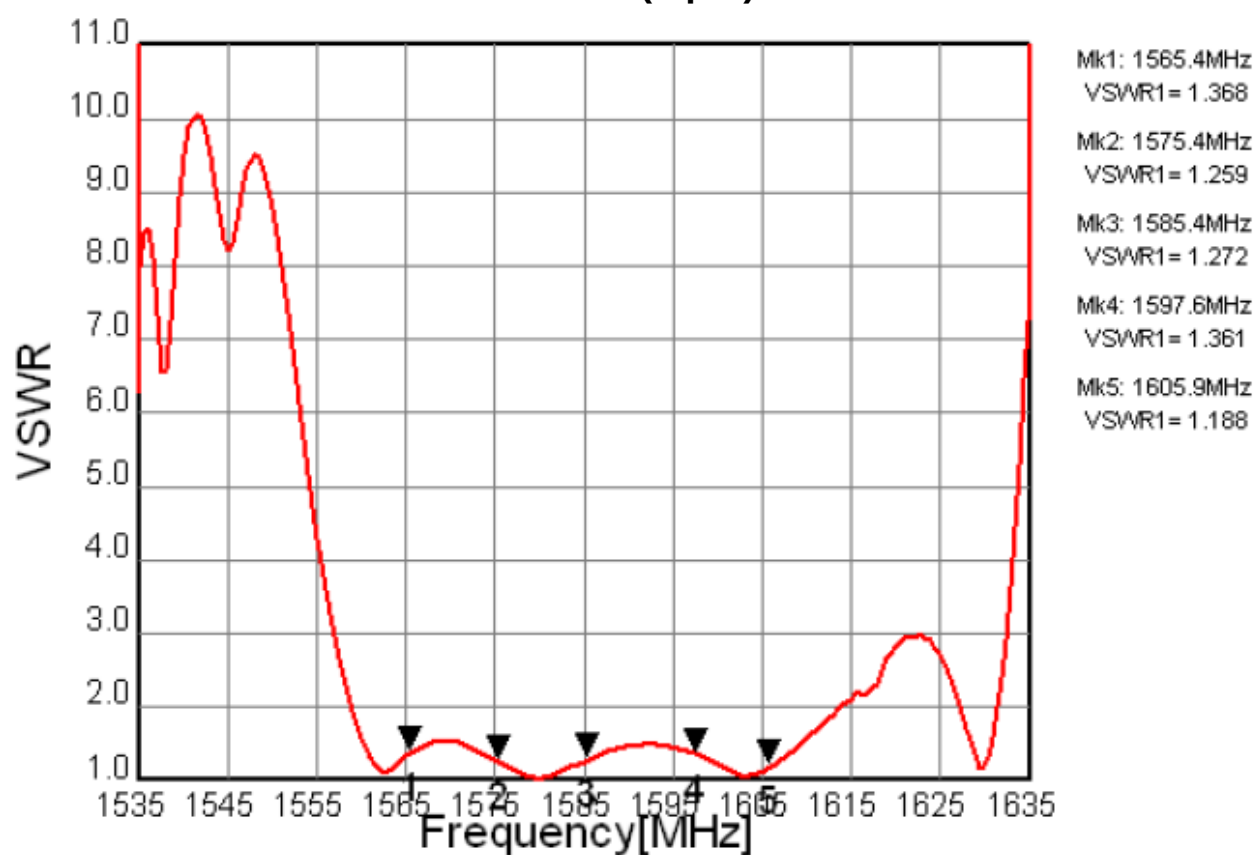
C. FREQUENCY CHARACTERISTIC:



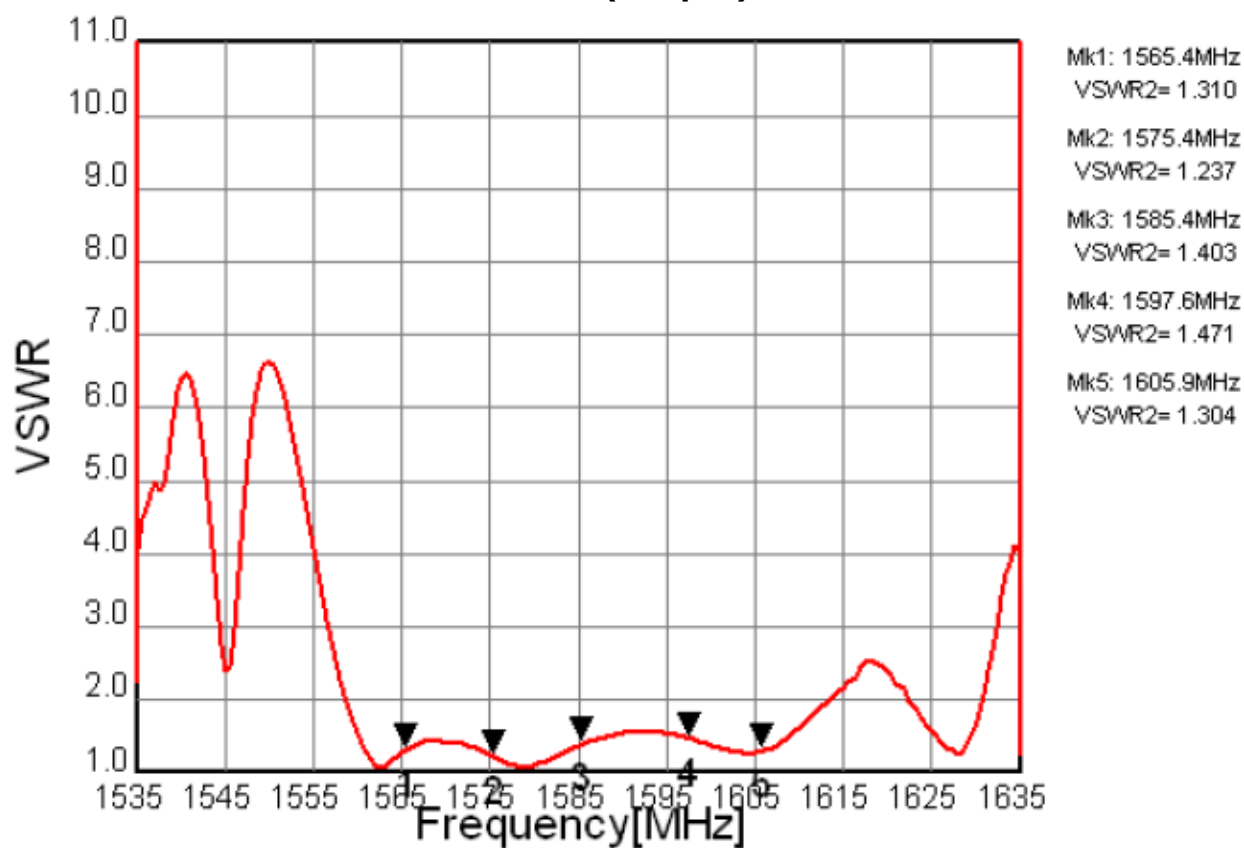
Wide-band



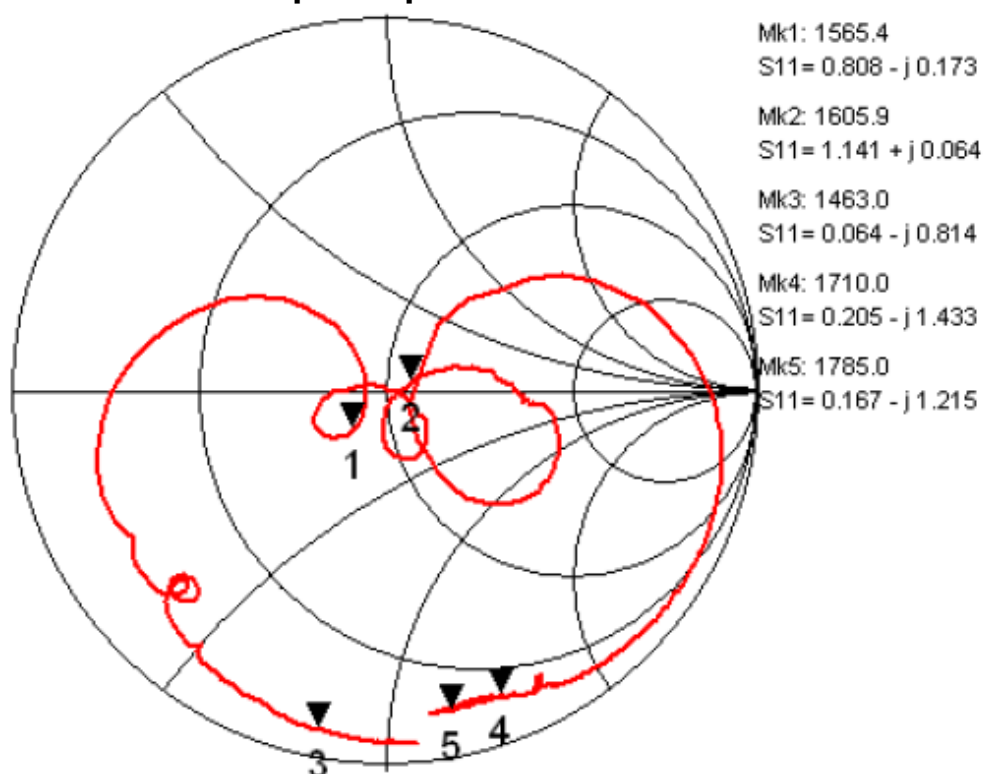
VSWR (Input)



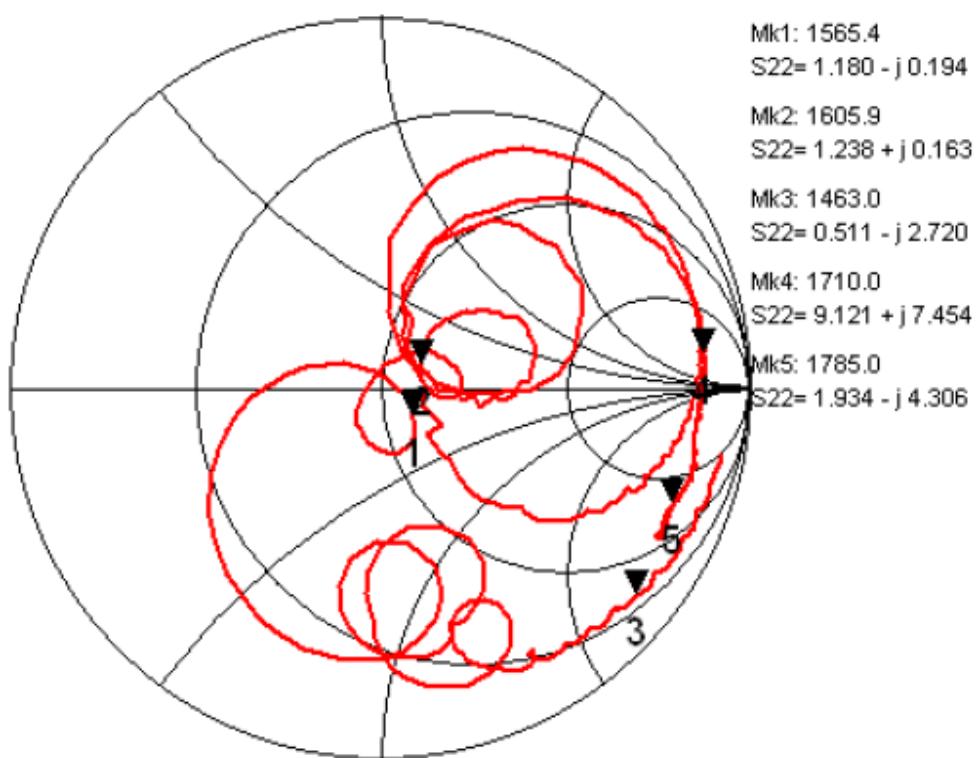
VSWR (Output)



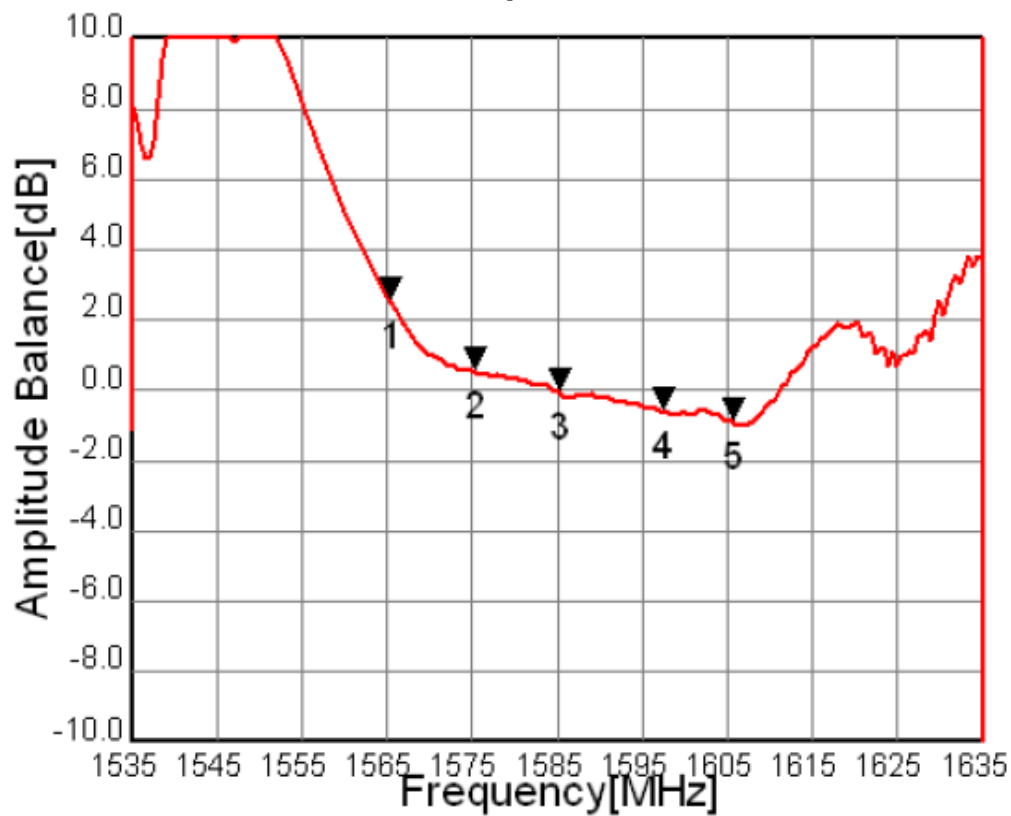
Input Impedance



Output Impedance



Amplitude balance



Mk1: 1565.4MHz
A Bal= 2.518dB

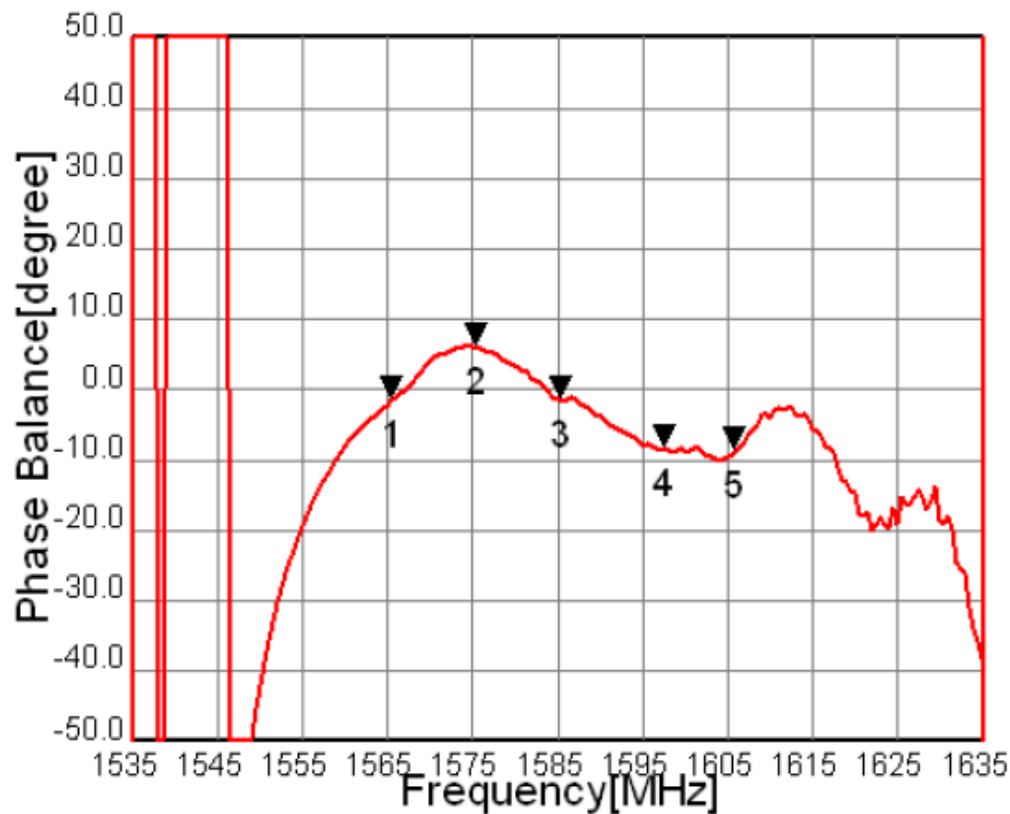
Mk2: 1575.4MHz
A Bal= 0.528dB

Mk3: 1585.4MHz
A Bal=-0.120dB

Mk4: 1597.6MHz
A Bal=-0.605dB

Mk5: 1605.9MHz
A Bal=-0.947dB

Phase balance



Mk1: 1565.4MHz
P Bal=-1.509deg

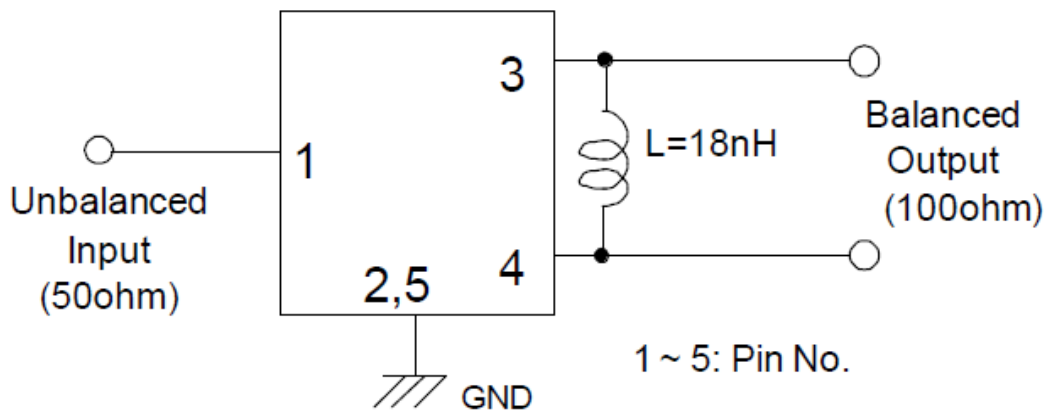
Mk2: 1575.4MHz
P Bal= 5.796deg

Mk3: 1585.4MHz
P Bal=-1.583deg

Mk4: 1597.6MHz
P Bal=-8.465deg

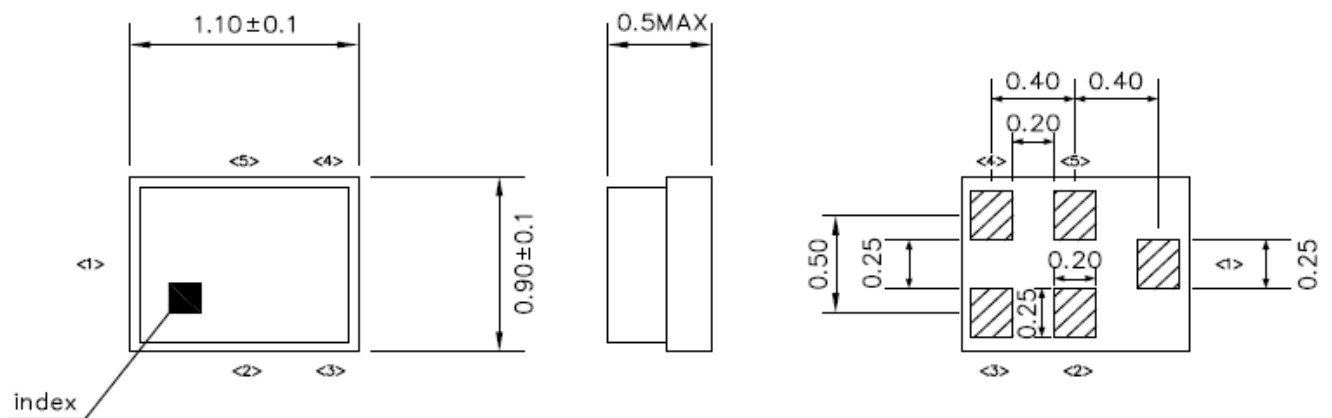
Mk5: 1605.9MHz
P Bal=-8.791deg

D. MEASUREMENT CIRCUIT:



E. OUTLINE DRAWING:

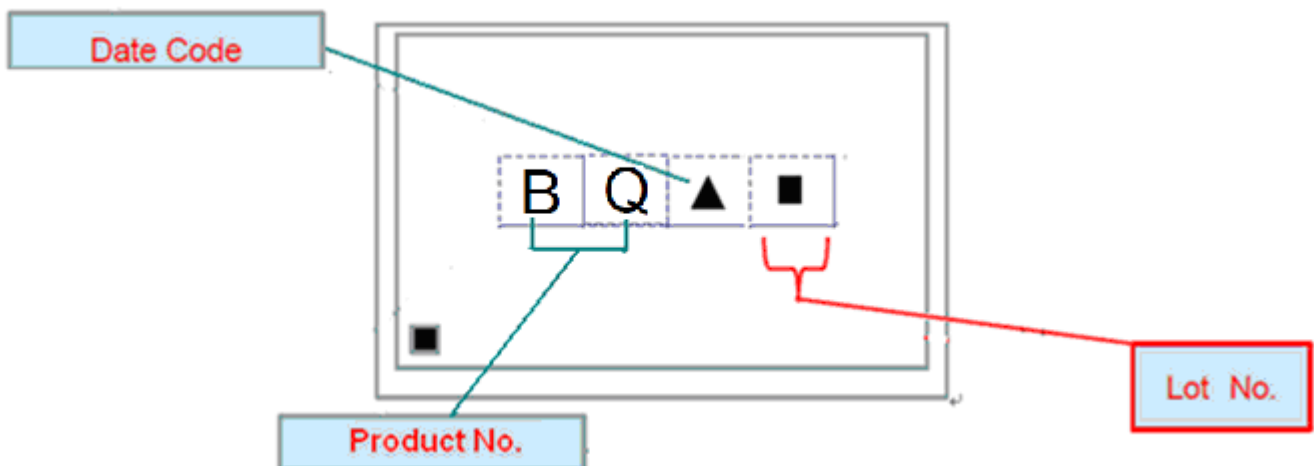
Device size: 1.1mmtyp. x 0.9mmtyp. x 0.5mmmax.



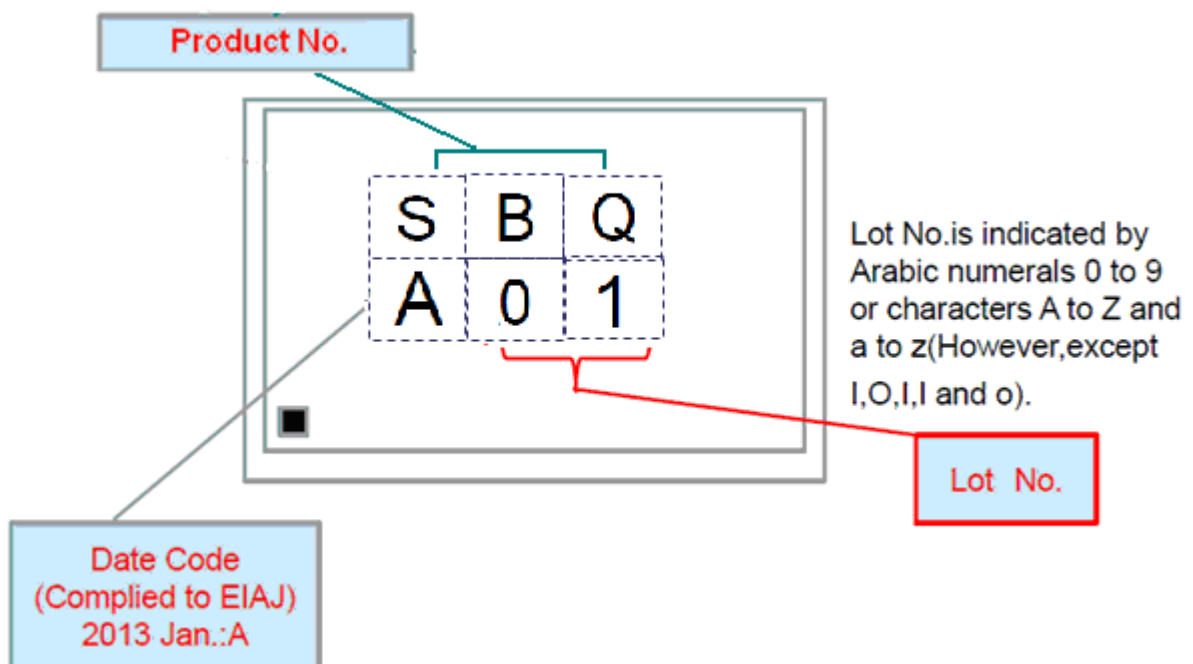
Pin Configuration

Pin No.	Symbol	Function
1	IN	Unbalanced pin
2	GND	Ground
3	OUT	Balanced pin
4	OUT	Balanced pin
5	GND	Ground

Top View (Sample Production):



Top View (Mass Production):

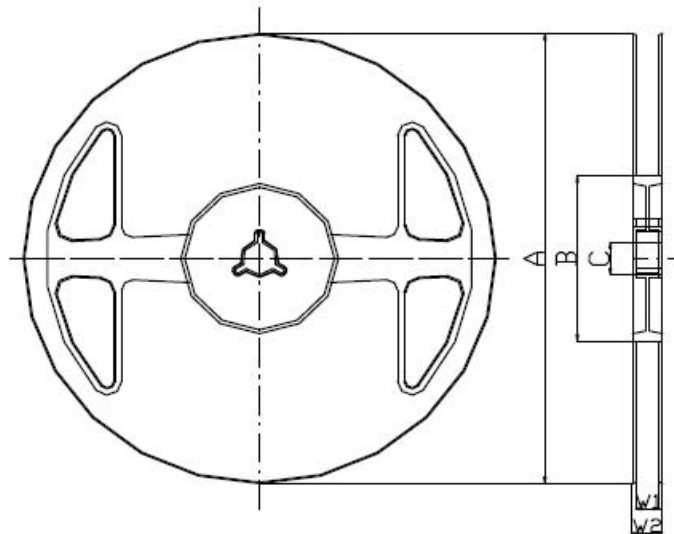


Product date code (EIAJ)

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2015	a	b	c	d	e	f	g	h	j	k	l	m
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

F. PACKING:

1. REEL DIMENSION



Materials of Reel

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

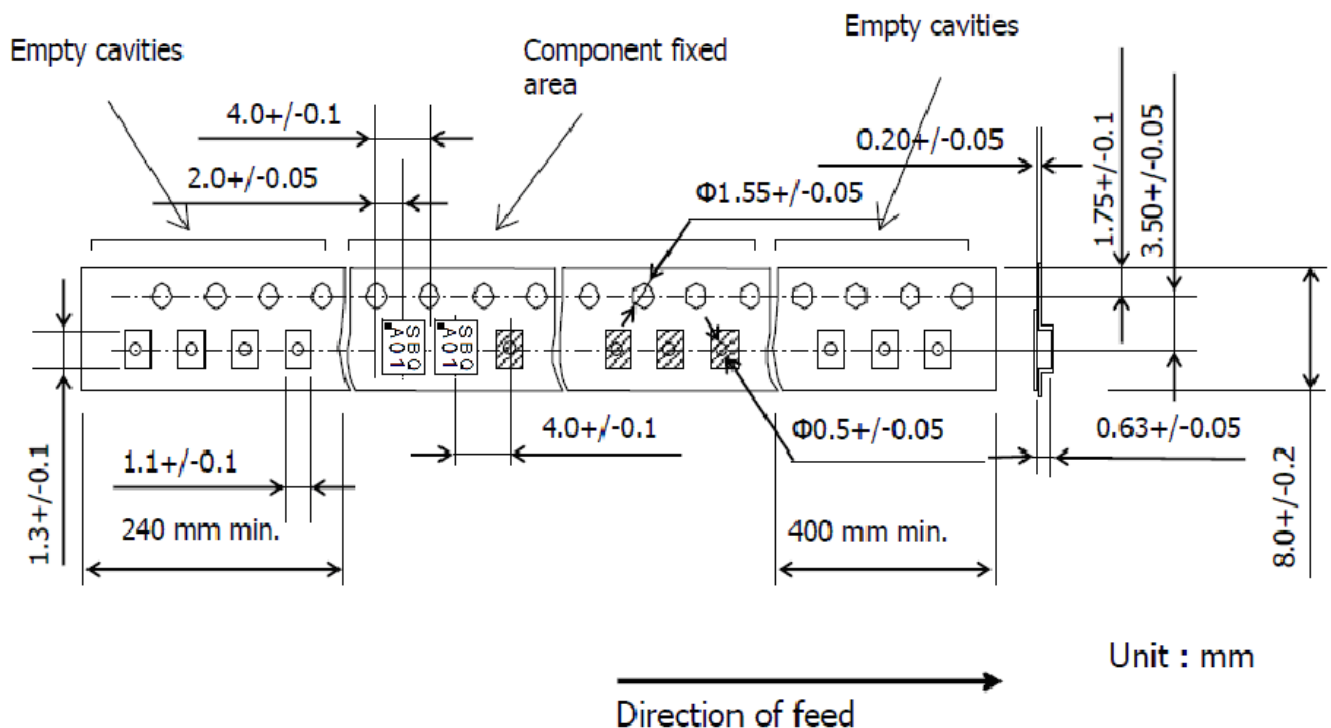
Color : Black

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

Unit : mm

Code	Quantity	A	B	C	W1	W2
J	5,000 pcs	$\phi 180.0 +0.0/-1.5$	$\phi 66.0 +/0.5$	$\phi 13.0 +/0.2$	$9.0 +1.0/-0.0$	$11.4 +/1.0$

2. TAPE DIMENSION



G. RECOMMENDED TEMPERATURE PROFILE OF REFLOW SOLDERING:

The figure below shows the recommended temperature profile for reflow soldering in the case of lead-free solder alloy Sn3.0Ag0.5Cu.

Recommended number of reflow cycles is 5 maximum.

Suitable condition for solder heating is different depending on composition and manufacturing method. Please contact the solder manufacturer for details.

