



SAW BANDPASS FILTER

PART NO.: ACTFH010-2140SA-1411

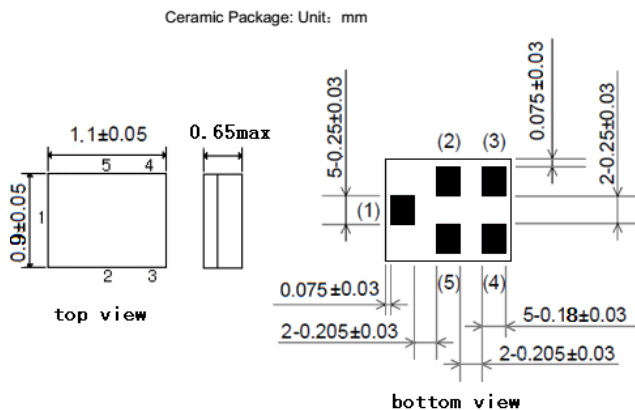
Product Type:	Customer:
SAW filter for LTE BAND1/4/10 Rx.	
	Customer Part NO.:
	Issued Date:

Features

SAW filter for LTE BAND1/4/10 Rx.

- 1 High stability and reliability with good performance and no adjustment.
- 2 Single ended to Single ended.
- 3 Narrow and sharp pass band characteristics. RoHS compatible.
- 4 Low insertion loss and deep stop band attenuation for interference.
- 5 Useable Passband 60MHz.
- 6 Package size 1.1mm*0.9mm

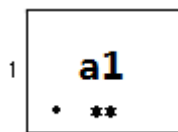
Package Dimensions



Pin Configuration

1	Input
4	Output
2,3,5	Ground

Marking



Top View, Laser Marking

"a1" Part number

“.” Dot marking, indicates input 1

" 1" Terminal1

The first “*”: Month Code (The code shown below varies in a 4-year-cycle)

Month	1	2	3	4	5	6	7	8	9	10	11	12
2016/2020	n	p	q	r	s	t	u	v	w	x	y	z
2017/2021	A	B	C	D	E	F	G	H	J	K	L	M
2018/2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019/2023	a	b	c	d	e	f	g	h	i	j	k	m

The second “*”: Date Code

data	□1s□	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
code	A	B	C	D	E	F	G	H	J	K	
data	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	L	M	N	P	Q	R	S	T	U	V	
data	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	X	Y	Z	a	b	d	e	f	g	h

Maximum Ratings

DC Voltage (between any Terminals)	V_{DC}	10	V
RF Power (in <i>BW</i>)	P	15 dBm /2000hr@55°C	
Operating Temperature Range	T_A	-30 ~ +85	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C
ESD Voltage (HB)	V_{ESD}	>150	V
Moisture Sensitivity Levels	MSL	2A	

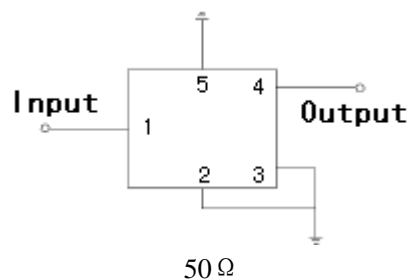
Electrical Characteristics:

Insertion Loss	IL				
2110 ...2170 MHz			1.6	2.2	dB
Passband Ripple	Pr				
2110 ...2170 MHz			0.6	1.0	dB
VSWR	V_{swr}				
2110 ...2170 MHz			1.8	2.1	
Absolute Attenuation	α				
10 1710 MHz		35	38		dB
1710 1755 MHz		46	51		dB
1755 1920 MHz		45	50		dB
1920 1980 MHz		46	49		dB
2015.... 2075 MHz		11	25		dB
2255 2400 MHz		27	30		dB
2400 2500 MHz		34	40		dB
2500 4240 MHz		30	35		dB
4240 4340 MHz		29	34		dB
43406000 MHz		25	30		dB
Input / Output Impedance (Nominal)		50			Ω

 RoHS Compliant

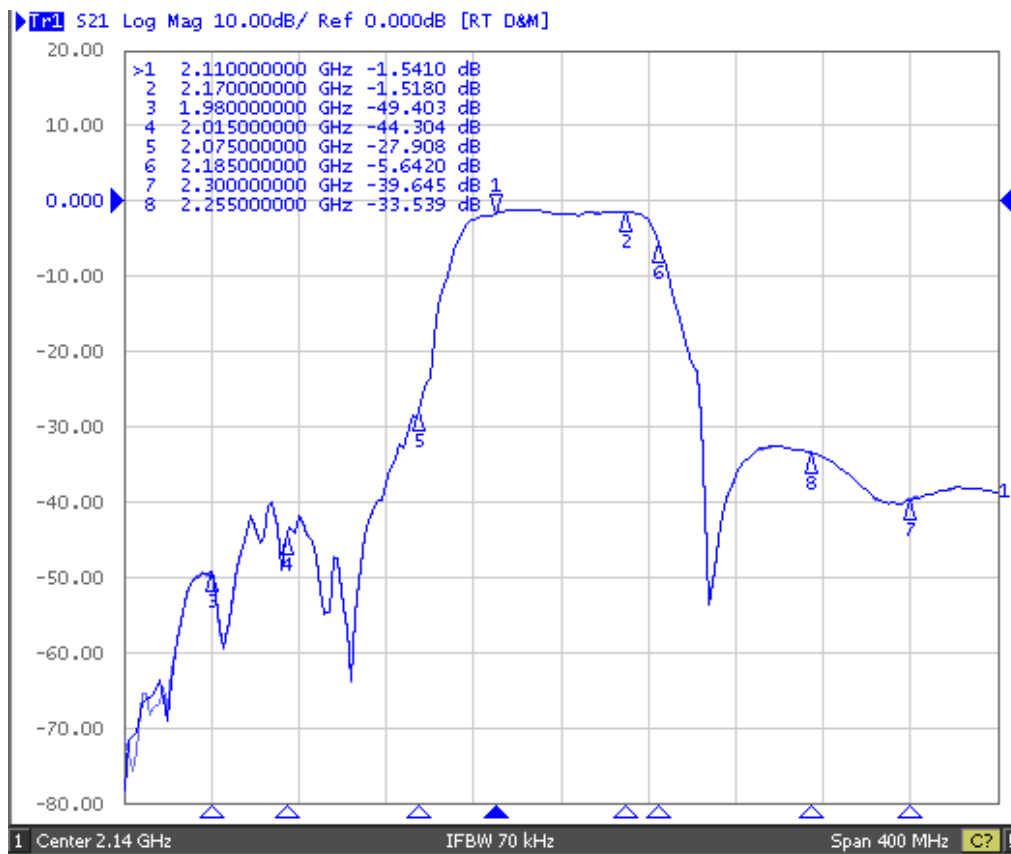
 Electrostatic Sensitive Device

Test Circuit

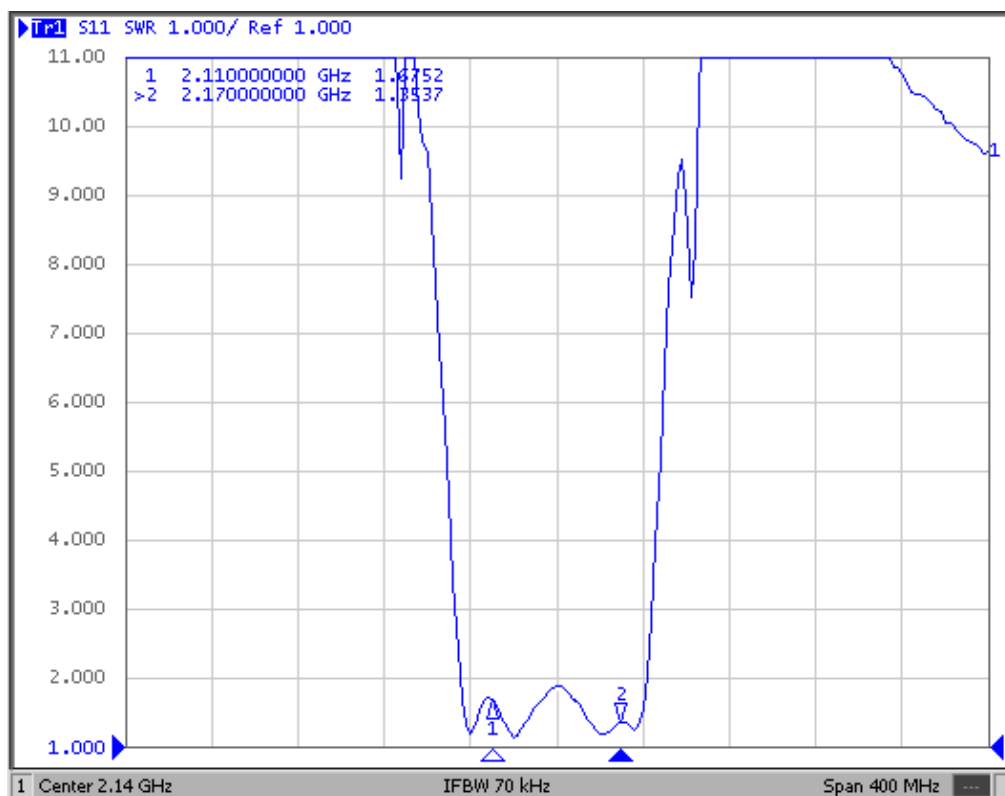


Typical Frequency Response

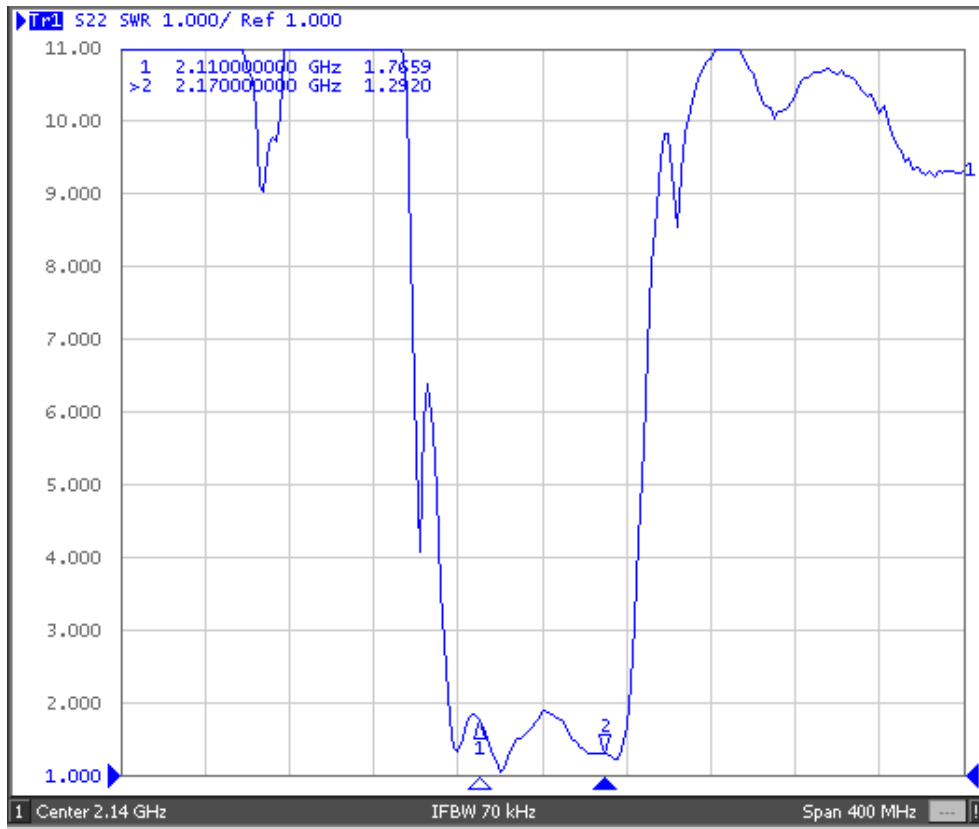
S21



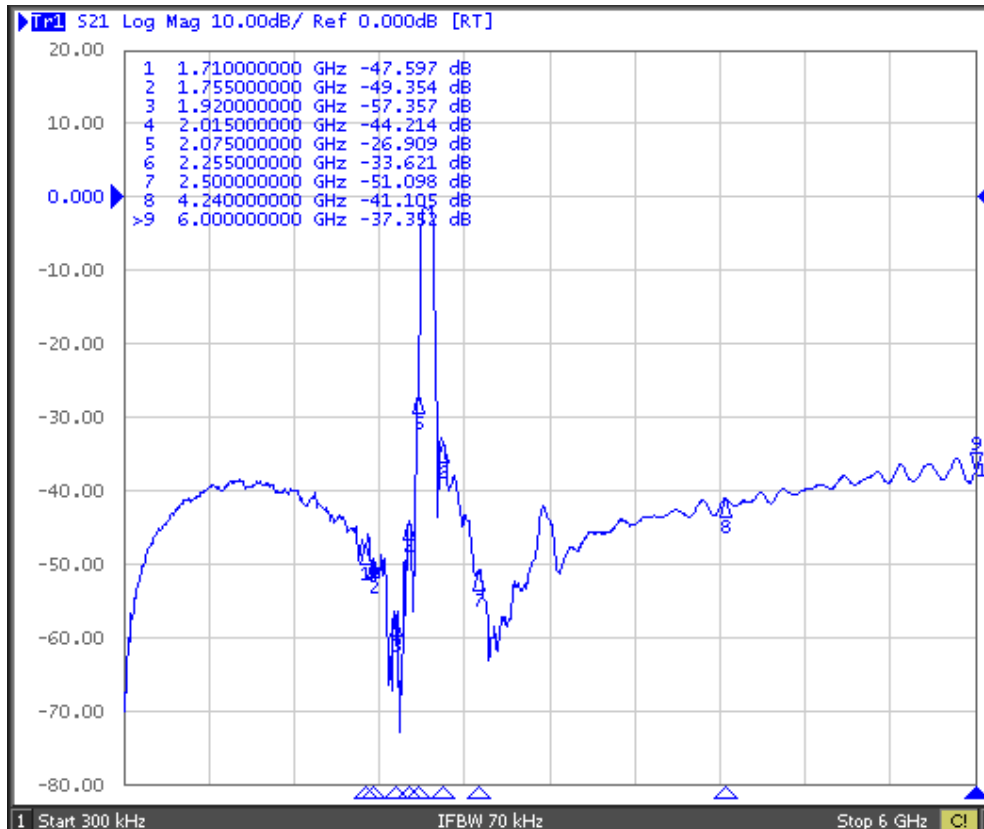
S11



S22



Far side





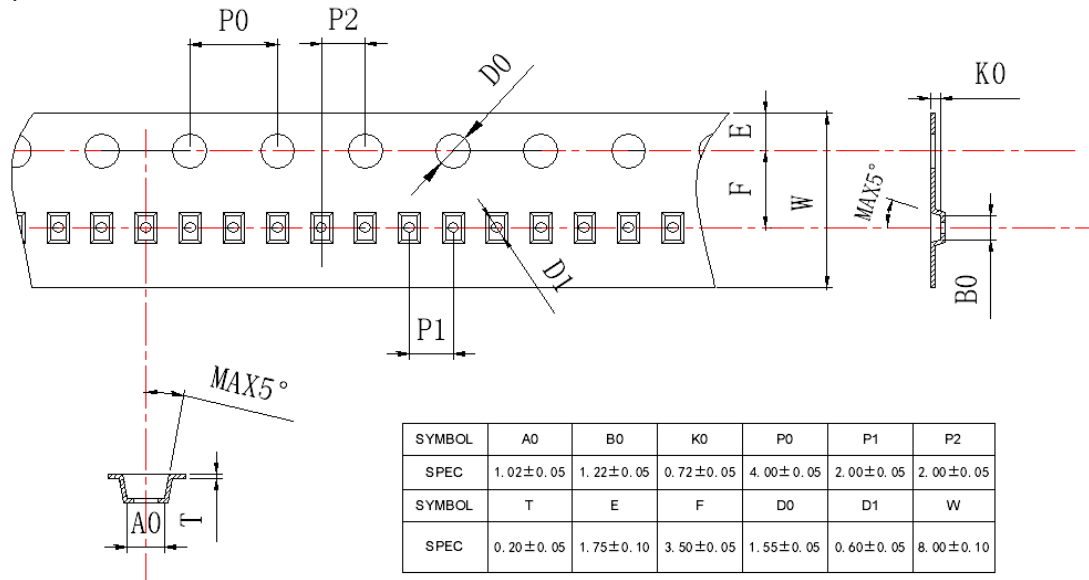
Stability Characteristics

Requirements: The SAW filer shall remain within the electrical specifications after tests.

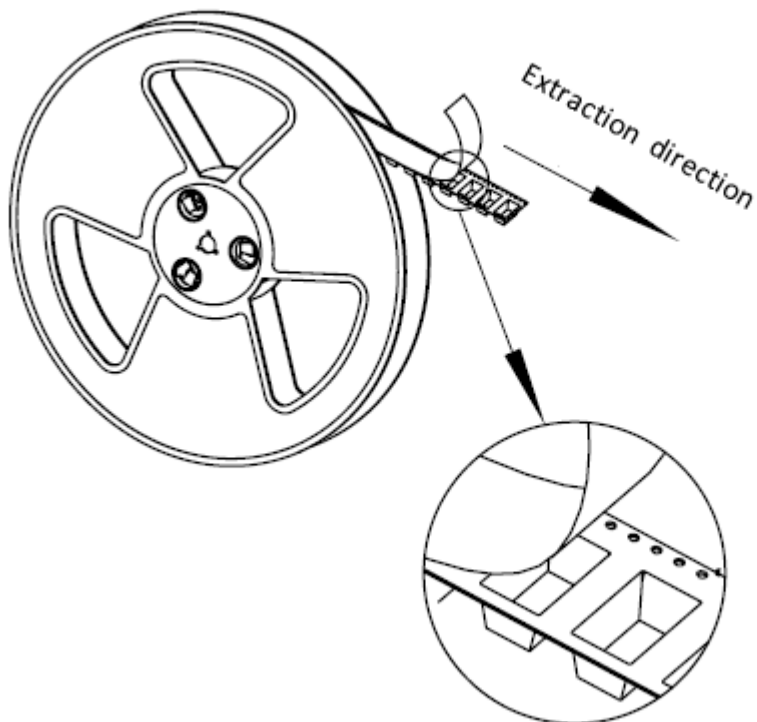
Item No.	Test Item	STD Reference	Test Conditions	per lot
	Preconditioning	JESD22-A113	1) Temperature Cycling, 5 cycles -40°C to 85°C; 2) Bake, 24 hrs @85±5°C; 3)Moisture Soak, Soak time and conditions per IPC/JEDEC J-STD-020 based on device MSL level; 4) Reflow, 3 reflow cycles; 5) Drying, Room ambient temperature.	All behind
1	Temperature Cycling	JESD22-A104	-40°C / +85°C,5°C/min,15min dwell,<1 min transfer time,500cycles	3*25 pcs
2	High Temperature Storage	JESD22-A103	Temperature=85°C, 1000 hours.	3*25 pcs
3	Temperature Humidity no bias	JEDEC Std A101-B	85°C 85%RH 240 hours	3*25 pcs
4	Human Body Mode ESD	JESD22-A114	Ta=25°C, ≥100V	3 pcs
5	Charge Device Mode ESD	JESD22-C101	Ta=25°C, ≥100V	3 pcs
6	Solderability	JESD22-B102	Wetting: 245°C, 5s.	22 pcs
7	Drop Test	JESD22-B111	1500 Gs, 0.5 millisecond duration, half-sine pulse.	20 pcs
8	Mechanical Shock	JESD-47	Shock pulse of 1500g with pulse duration of 0.5+/-0.1msec (X ,Y & Z); 5 shocks per axis.	3*25 pcs

Packing Information

Carrier Tape



Reel Dimensions



Material	PS
Unit	mm
Tolerance	±0.20 mm
Quantity	10000/reel

Outer Packing

Carton Box I	100000	240×210×285	anti-static plastic bag & carton box 1 reel / bag	2.15
Carton Box II	300000	470×310×285	10bags / box (100000 pcs) 30 bags / box (300000pcs)	6.22

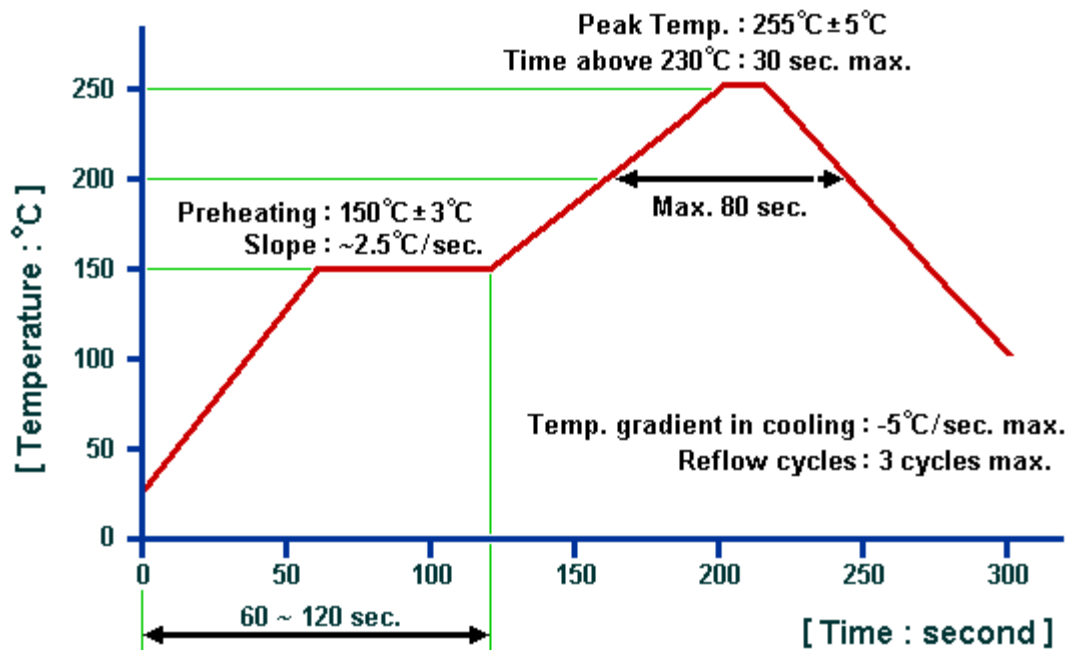
Unit: mm

Unit: kg

Remarks

- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
- Be careful of soldering temperature and duration of components when soldering.
- Do not place soldering iron on the body of components.
- Be careful not to subject the terminals or leads of components to excessive force.
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

Recommended Soldering Profile



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1. The specifications of this device are subject to change or obsolescence without notice.
2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
3. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.