SAW BANDPASS FILTER

PART NO.: ACTFG010-1580SA-1411

Product Type:		**Customer:**
SAW Filter		
Description:		**Customer Part NO.:**
SAW filter for Beidou, GPS and GLONASS		
		Issued Date:

ACT (A wholly owned Acal BFi Company)
+44 (0) 118 978 8878|sales@act.co.uk|www.act.co.uk
ISO9001 Registered

Features

SAW filter for Beidou & GPS & GLONASS.

1 High stability and reliability with good performance and no adjustment.

2 Narrow and sharp pass band characteristics. RoHS compatible.

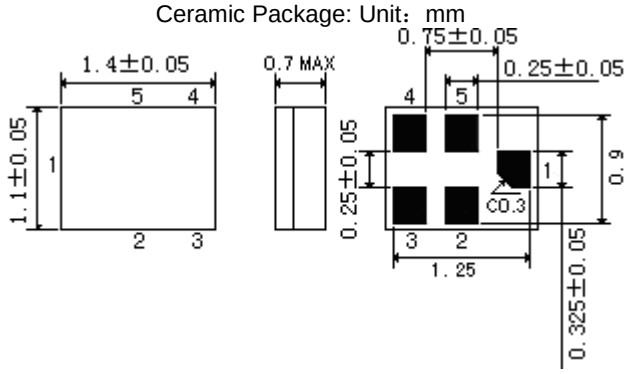
3 Low insertion loss and deep stop band attenuation for interference.

4 Low – loss SAW filter for GPS.

5 Package size 1.4 mm *1.1 mm

Package Dimensions

Ceramic Package: Unit：mm

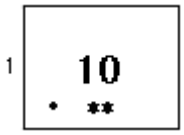


Pin Configuration

1	Input
4	Output
2,3,5	Ground

Marking

Top View, Laser Marking



"**10**": 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	1st	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

Electrical Characteristics:

Item		Minimum	Typical	Maximum	Unit
Insertion Loss	*IL*				
1559.09 …. 1563.09 MHz			1.8	2.1	dB
1574.42 …. 1576.42 MHz			1.3	1.6	dB
1597.55 …. 1605.89 MHz			1.8	2.1	dB
Passband Ripple	*Pr*				
1559.09 …. 1563.09 MHz			0.2	0.5	dB
1574.42 …. 1576.42 MHz			0.2	0.4	dB
1597.55 …. 1605.89 MHz			0.3	0.6	dB
VSWR	*Vswr*				
1559.09 …. 1563.09 MHz			1.6	1.9	
1574.42 …. 1576.42 MHz			1.2	1.6	
1597.55 …. 1605.89 MHz			1.3	1.8	
Group delay Ripple	*Gdr*				
1559.09 …. 1563.09 MHz			2	7	ns
1574.42 …. 1576.42 MHz			2	7	ns
1597.55 …. 1605.89 MHz			2	8	ns
Absolute Attenuation	*α*				
DC …. 925.00 MHz		45	50		dB
925.00 …. 960.00 MHz		43	50		dB
1427.00 …. 1453.00 MHz		41	47		dB
1453.00 …. 1470.00 MHz		40	45		dB
1470.00 …. 1530.00 MHz		30	35		dB
1635.00 …. 1700.00 MHz		33	37		dB
1710.00 …. 1785.00 MHz		45	50		dB
1850.00 …. 1910.00 MHz		43	48		dB
1920.00 …. 1980.00 MHz		42	48		dB
2110.00 …. 2170.00 MHz		40	45		dB
2300.00 …. 2400.00 MHz		40	44		dB
2400.00 …. 2500.00 MHz		39	43		dB
2500.00 …. 2570.00 MHz		38	42		dB
2570.00 …. 3000.00 MHz		33	39		dB
Input / Output Impedance (Nominal)			50		Ω

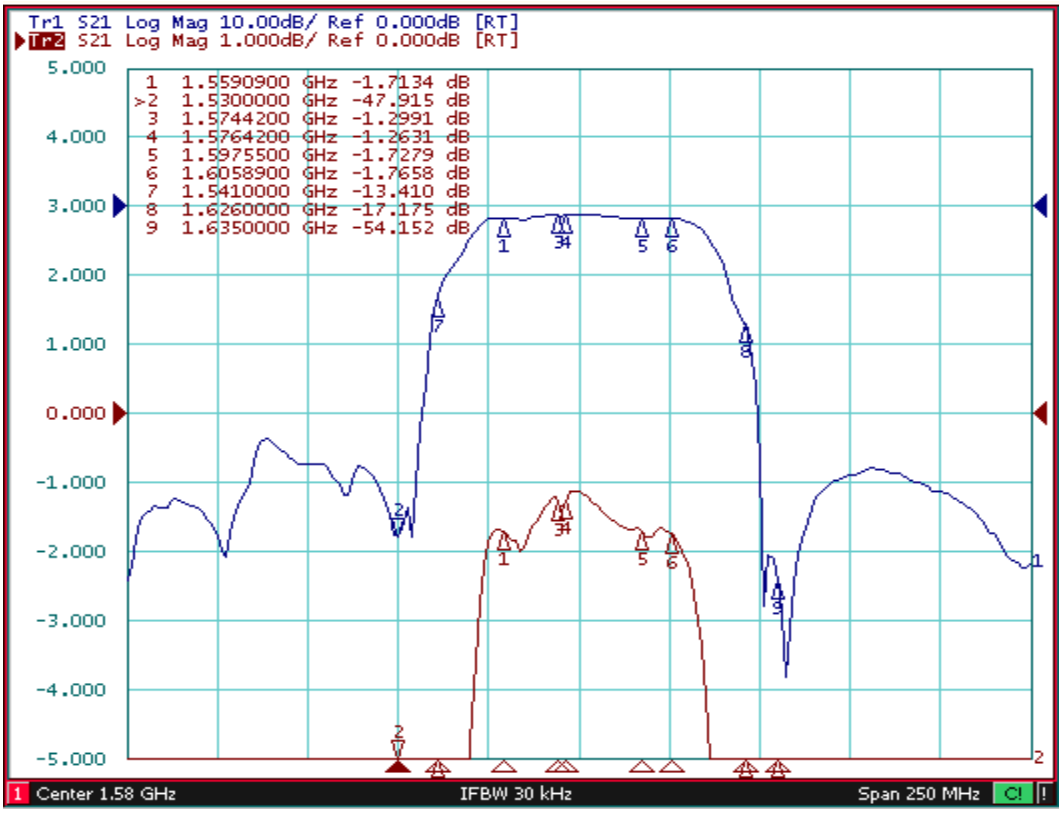
RoHS Compliant **Electrostatic Sensitive Device**

Maximum Ratings

Rating		Value	Unit
DC Voltage (between any Terminals)	V_{DC}	10	V
RF Power (in *BW*)	*P*	13	dBm
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	

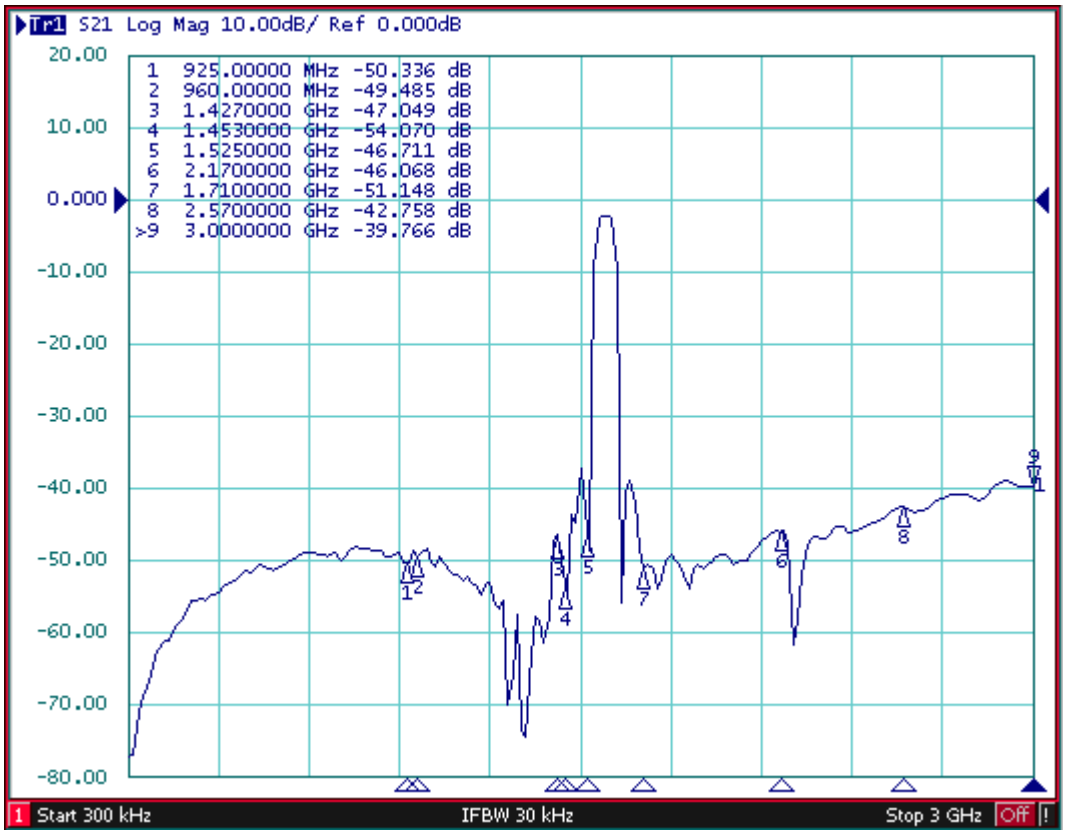
Typical Frequency Response

S21



S11 Group Dealy

Far side


Tr1 S21 Log Mag 10.00dB/ Ref 0.000dB
1 925.00000 MHz -50.336 dB
2 960.00000 MHz -49.485 dB
3 1.4270000 GHz -47.049 dB
4 1.4530000 GHz -54.070 dB
5 1.5250000 GHz -46.711 dB
6 2.1700000 GHz -46.068 dB
7 1.7100000 GHz -51.148 dB
8 2.5700000 GHz -42.758 dB
>9 3.0000000 GHz -39.766 dB
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
1 Start 300 kHz
IFBW 30 kHz
Stop 3 GHz
Off

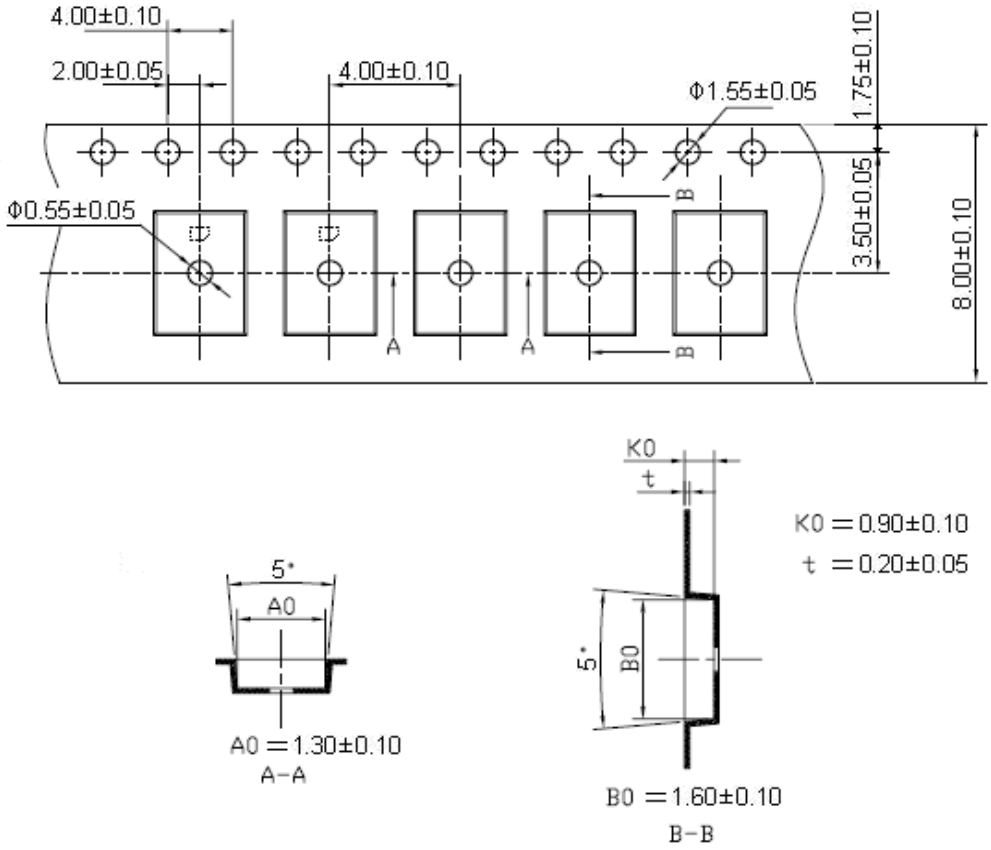
Stability Characteristics

•	Test Item	STD Reference	Test Conditions	per lot
Preconditioning		JESD22-A113	1) Temperature Cycling, 5 cycles -40℃ to 85℃; 2) Bake, 24 hrs @85±5℃; 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℃ / +85℃,5℃/min,15min dwell,<1 min transfer time,500cycles	3*25 pcs
2	High Temperature Storage	JESD22-A103	Temperature＝85℃, 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℃，≥100V	3 pcs
5	Charge Device Mode ESD	JESD22-C101	Ta=25℃，≥100V	3 pcs
6	Solderability	JESD22-B102	Wetting: 245℃, 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

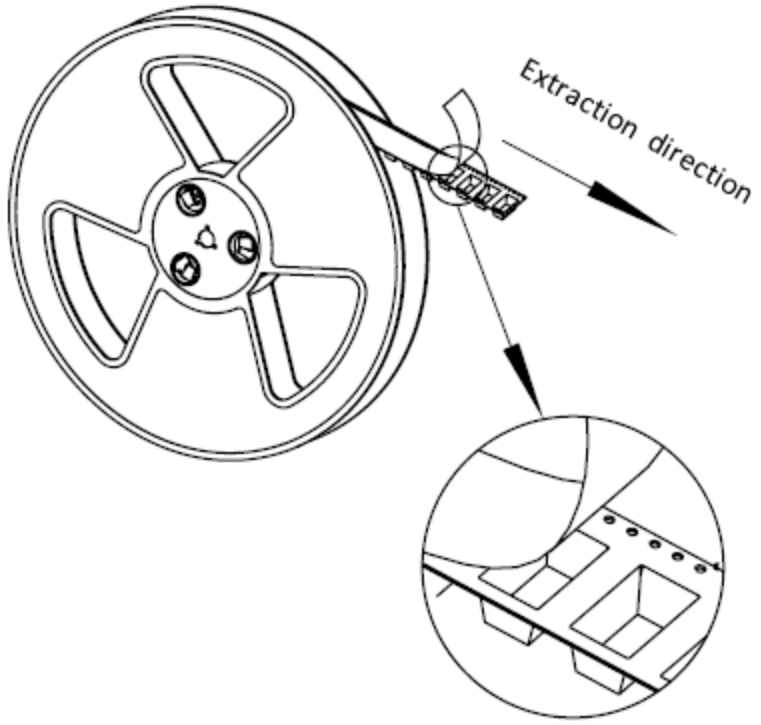
Requirements: The SAW filer shall remain within the electrical specifications after tests.

Packing Information

Carrier Tape



Reel Dimensions



Material	PS
Unit	mm
Tolerance	±0.20 mm
Quantity	4000/reel

Outer Packing

Type	Quantity	Dimension	Description	Weight
Carton Box Ⅰ	40000	240×210×285	anti-static plastic bag & carton box 1 reel / bag 10bags / box (40000 pcs) 30 bags / box (120000pcs)	1.86
Carton Box Ⅱ	120000	470×310×285		5.64

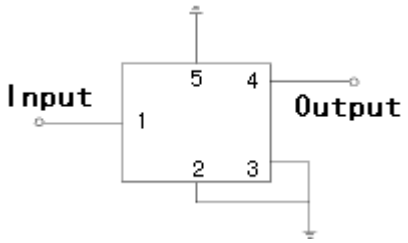
Unit: mm Unit: kg

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

Remarks

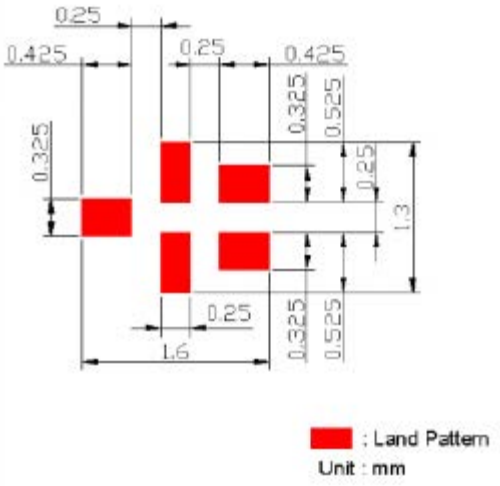
- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided, 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.

Test Circuit

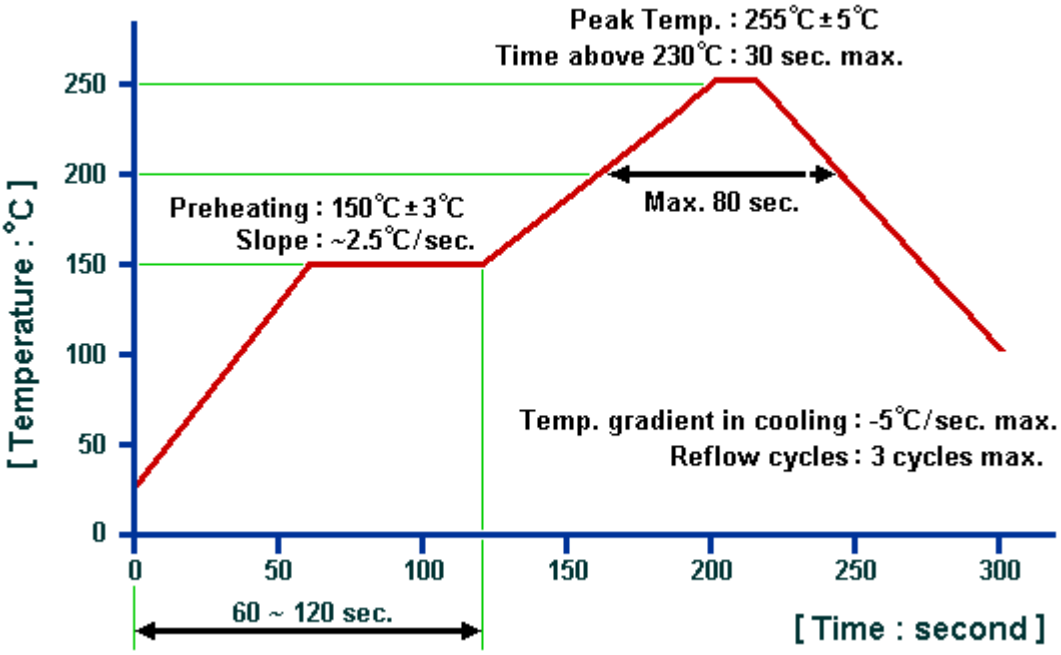


50 Ω

PCB Footprint



Recommended Soldering Profile



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.