

Features

- High stability and reliability with good performance and no adjustment
- Narrow and sharp pass band characteristics. RoHS compatible
- Low insertion loss and deep stop band attenuation for interference
- Low – loss SAW filter
- Package size 1.4 mm *1.1 mm
- Electrostatic Sensitive Device (ESD)

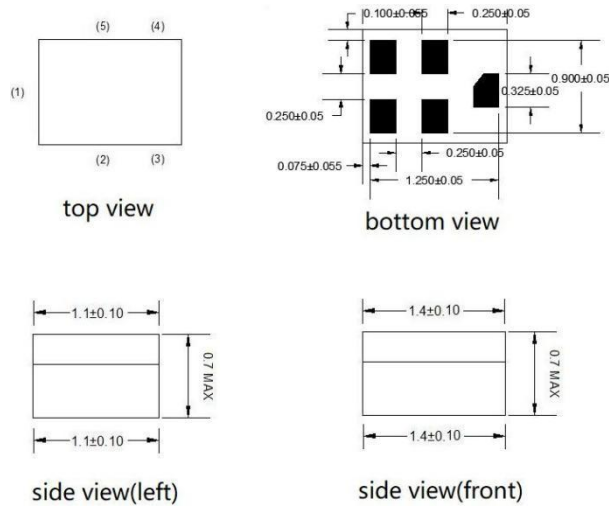
Electrical Specification

ITEM		Min.	Typ.	Max.	Unit
Center Frequency		-	869	-	MHz
Insertion Loss	868~870MHz	-	3.0	3.3	dB
Amplitude Variation	868~870MHz		0.4	1.0	dB
Attenuation	0~791.0MHz	45	63	-	dB
Attenuation	791.0~835.0 MHz	35	56	-	dB
Attenuation	835.0~847.0MHz	25	53		dB
Attenuation	847.0~862.0MHz	24	39		dB
Attenuation	880~883.0 MHz	30	34	--	dB
Attenuation	883~915.0 MHz	37	47	--	dB
Attenuation	915~1000.0 MHz	40	65		dB
Attenuation	1000~3000.0 MHz	27	37		dB
Attenuation	3000~4000.0 MHz	24	28		dB
Attenuation	4000~5400.0 MHz	20	22		dB
Attenuation	5400~6000.0 MHz	18	21		dB
VSWR	868~870MHz	-	1.4	1.8	

Maximum Ratings

Rating	Symbol	Value	Unit
DC Voltage (between any Terminals)	V_{DC}	10	V
RF Power (in BW)	P	15	dBm
Operating Temperature Range	T_A	-30 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +85	°C
ESD Voltage (HB)	V_{ESD}	>150	V
Moisture Sensitivity Levels	MSL	2A	

Outline Drawing



Pin Configuration

PIN#	Description
1	Input
4	Output
2,3,5	Ground



Marking



Top View, Laser Marking

“19”: Part Number
“.” Dot marking, indicates input

“1”: Terminal 1

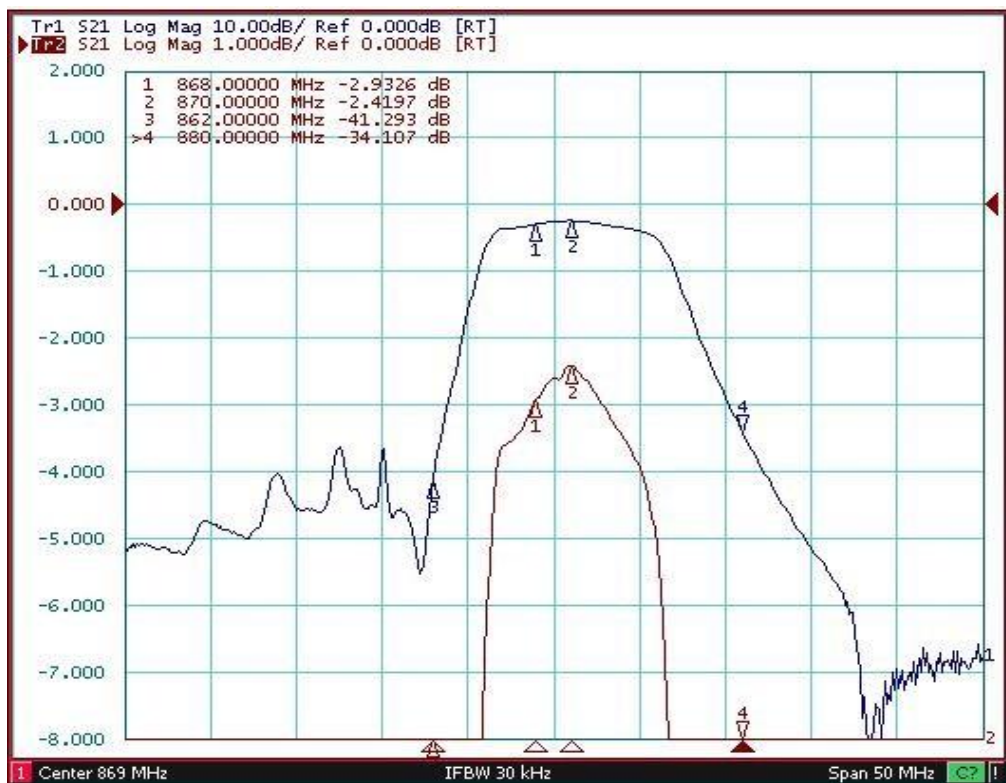
The first “*”: Month Code (The code shown below varies in a 4-year-cycle)

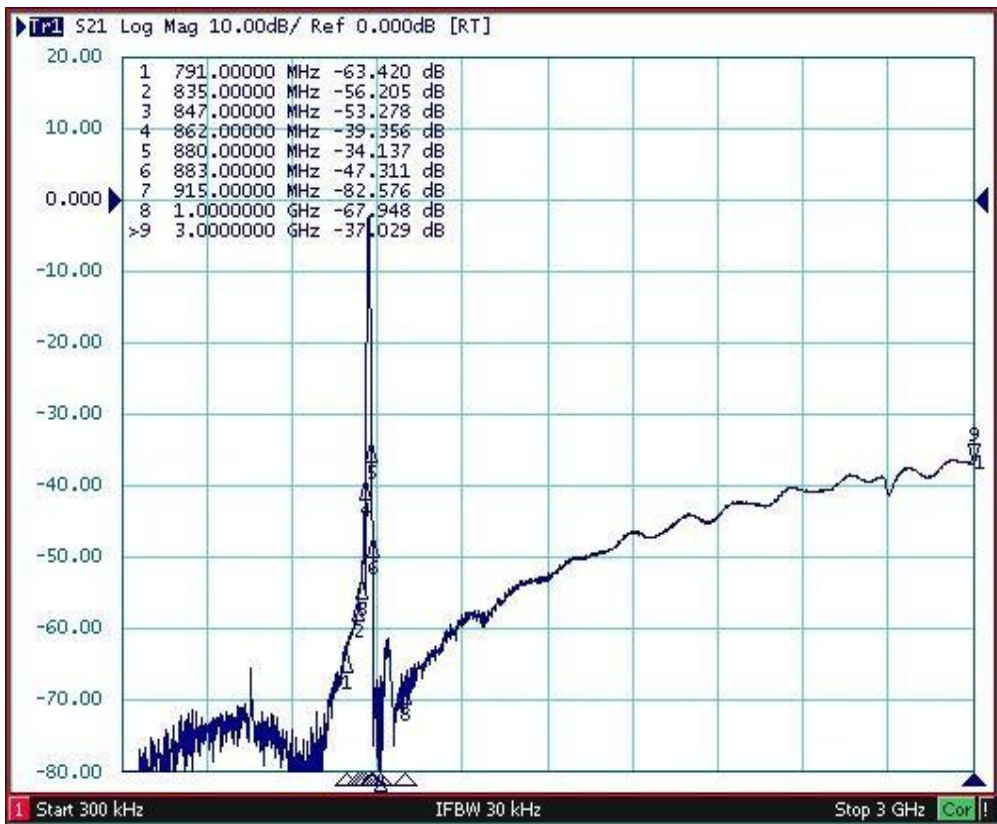
Month	1	2	3	4	5	6	7	8	9	10	11	12
2016/2020	n	p	q	r	s	t	u	v	w	x	y	z
2017/2021	A	B	C	D	E	F	G	H	J	K	L	M
2018/2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019/2023	a	b	c	d	e	f	g	h	i	j	k	m

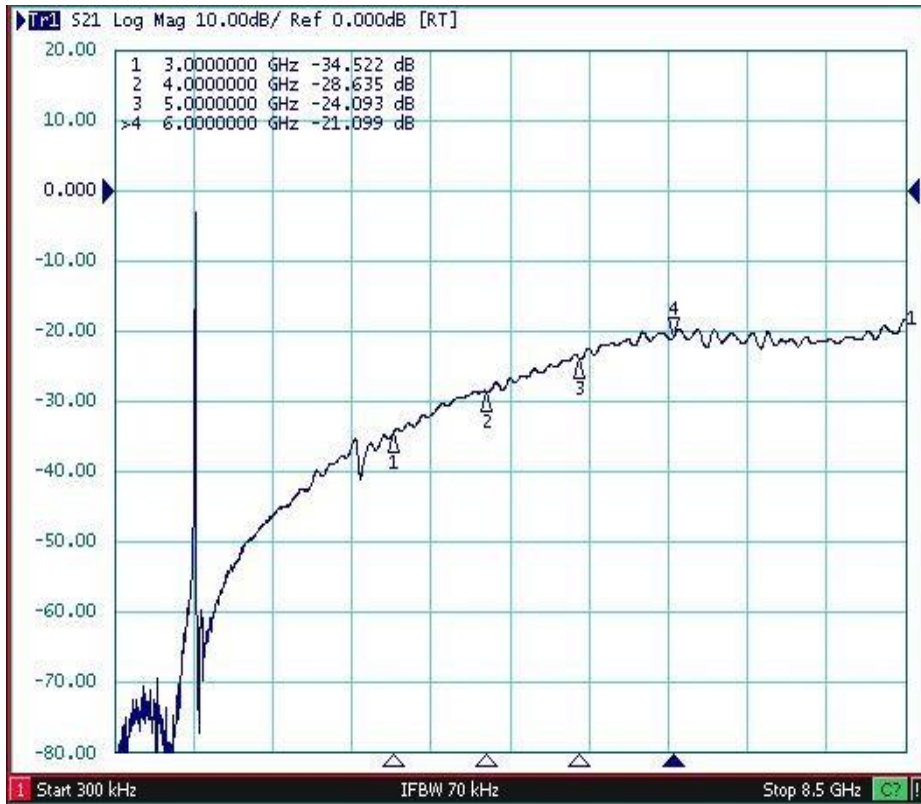
The second “*”: Date Code

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

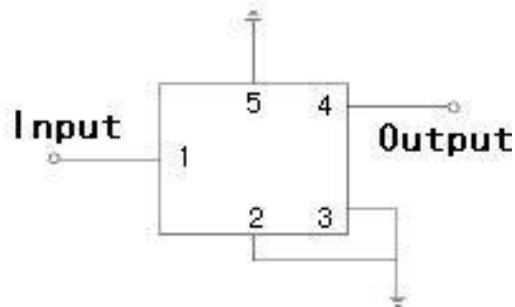
Typical Frequency Response



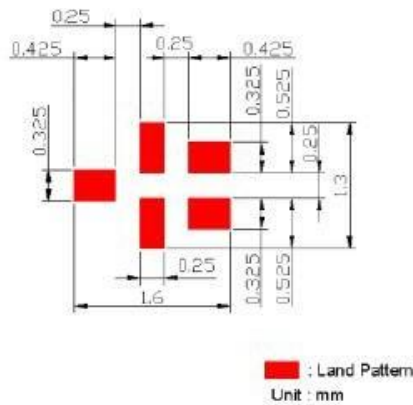




Test Circuit



PCB Footprint



Stability Characteristics

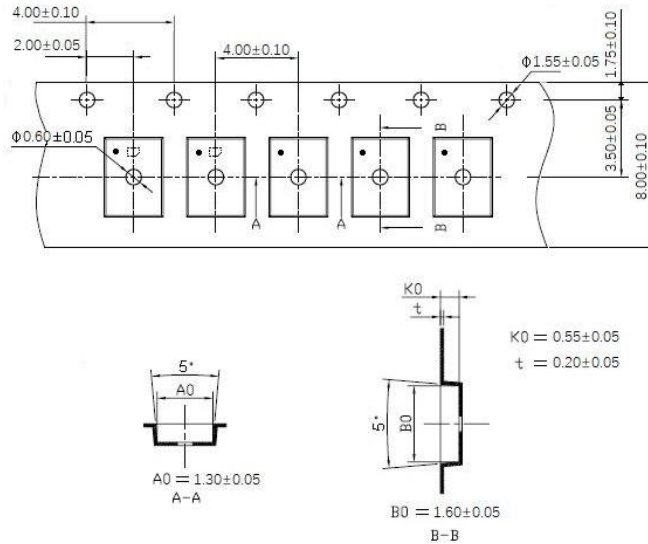
ITEM	Test Item	STD Reference	Test Conditions	per lot
	Preconditioning	JESD22-A113	1) Temperature Cycling, 5 cycles -40°C to 85°C; 2) Bake, 24 hrs @85±5°C; Moisture Soak, Soak time and conditions per IPC/JEDEC J-STD-020 based on device MSL level; Reflow, 3 reflow cycles; Drying, Room ambient temperature.	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

Remarks

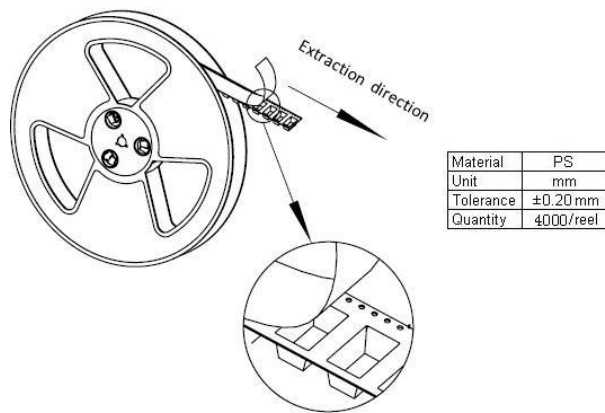
- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
- Be certain not to apply voltage exceeding the rated voltage of components.
- Do not operate outside the recommended operating temperature range of components.
- Sudden change of temperature shall be avoided,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

Packing Information

Carrier Tape



Reel Dimensions

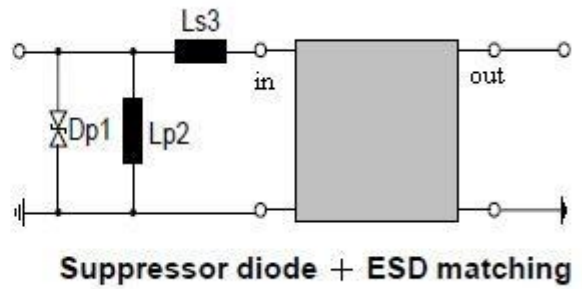
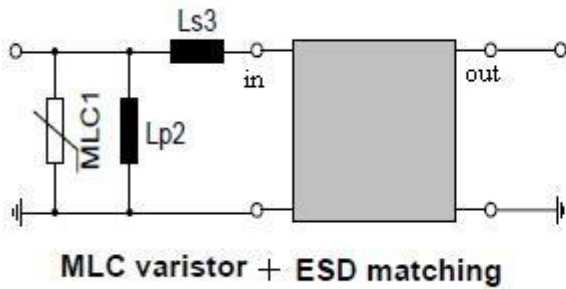


Outer Packing

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

ESD protection

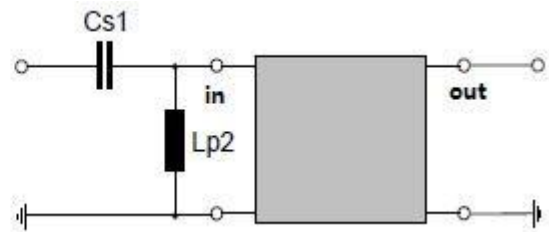
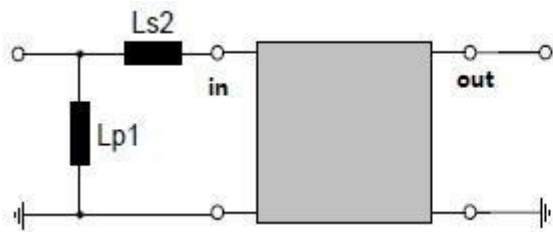
This product is electrostatic sensitive device. When you install or measure it, you should be careful not to add antistatic electricity or high voltage. Please be advised that you had better check anti surge voltage. To reduce the probability of damages caused by ESD, the following matching topologies should be applied.



“ESD matching” should be added to the filter port, where electrostatic discharge is expected. It predominantly appears at the antenna input of RF receivers. Therefore “ESD matching” should be designed to short circuit or block the ESD pulse.

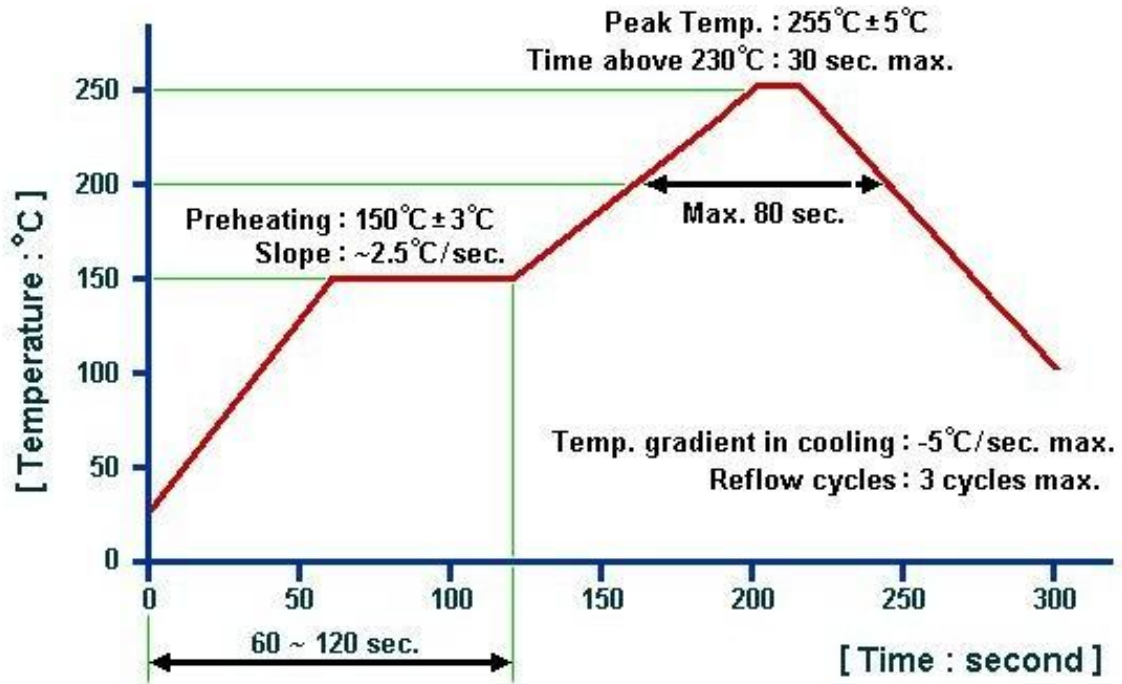
Depending on the input impedance of the SAW filter and the source impedance, the needed component values have to be determined from case to case.

In cases where ESD is minor, the following simplified “ESD matching” topologies can be used.



Effectiveness of the applied ESD protection has to be checked according to relevant industry standards or customer specific requirements.

Recommended Soldering Profile



Remarks:

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.
4. For questions on technology, prices and delivery, please contact our sales offices or e-mail sales@sainty-tech.com.