



SAW BANDPASS FILTER

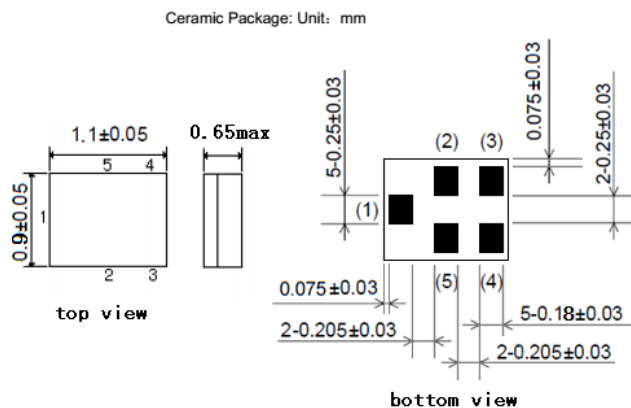
PART NO.: ACTFH009-2590SA-1109

Product Type:	Customer:
TD-LTE band 41 Post PA Tx filter	
	Customer Part NO.:
	Issued Date:

Features

- 1 TD-LTE band 41(2535-2655MHz)Post PA Tx filter.
- 2 Low – loss RF filter for mobile telephone.
- 3 Narrow Band 41systems.
- 4 Usable pass band 120MHz(110MHz included).
- 5 $50\ \Omega/50\ \Omega$ unbalanced to unbalanced operation for all filters.
- 6 Low insertion attenuation.
- 7 Package size 1.1mm*0.9mm
- 8 RoHS compatible.

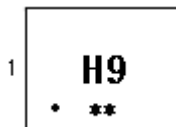
Package Dimensions



Pin Configuration

1	Input
4	Output
2,3,5	Ground

Marking



Top View, Laser Marking

"H9" 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	□th	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

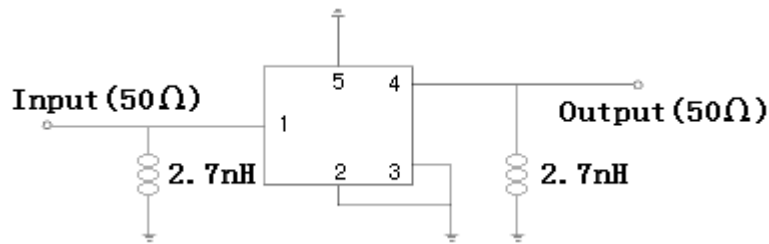
Maximum Ratings

DC Voltage (between any Terminals)	V_{DC}	5	V
Input power at 2545-2655MHz	P	29dBm/5000hrs/55 °C	
Input power for other frequency ranges	P	10dBm/5000hrs/55 °C	
Operating Temperature Range	T_A	-40 ~ +85	°C
Storage Temperature Range	T_{stg}	-40 ~ +85	°C
ESD voltage(Machine Model)	V_{ESD}	50	V
ESD voltage(Human Body Model)	V_{ESD}	125	V
ESD voltage(Changed Device Model)	V_{ESD}	600	V

Electrical Characteristics:

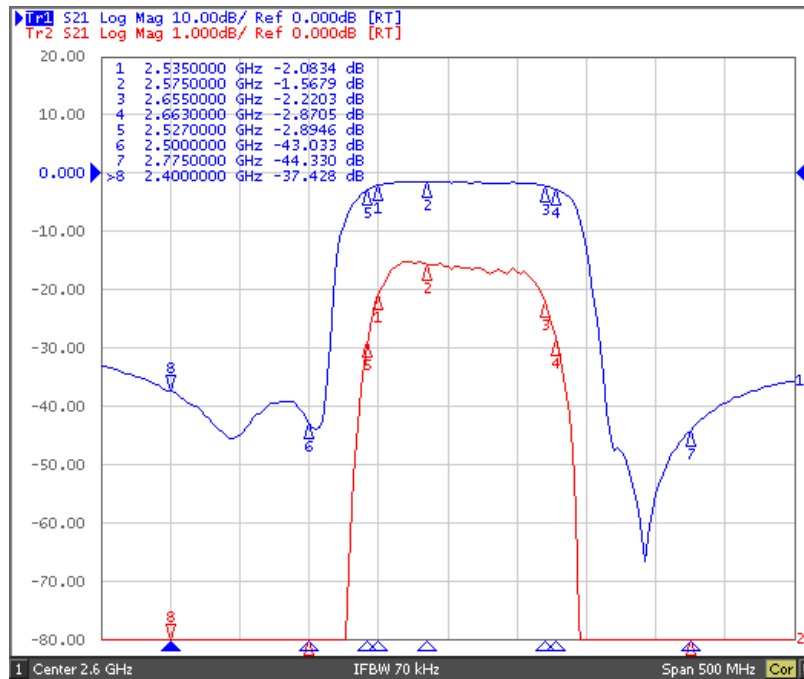
Center Frequency	F_o		2590		MHz
Insertion Loss	IL				
2535 ... 2545 MHz			2.1	3.3	dB
2545 ... 2575 MHz			1.4	2.2	dB
2555 ... 2655 MHz			2.1	2.7	dB
2575 ... 2635 MHz			1.4	2.2	dB
2635 ... 2655 MHz			2.1	3.3	dB
Passband Ripple	Pr				
2535 ... 2655 MHz			1.2	2.4	dB
VSWR	V_{swr}				
2535 ... 2655 MHz			1.4	2.0	
Absolute Attenuation	α				
50 699 MHz		45	50		dB
699 916 MHz		38	42		dB
916 925 MHz		38	42		dB
925 960 MHz		37	41		dB
960 1440 MHz		28	32		dB
1440 1565MHz		28	31		dB
1565 1615 MHz		28	31		dB
1615 1805 MHz		28	31		dB
1805 1830 MHz		28	31		dB
1830 2120 MHz		28	31		dB
2120 2400 MHz		30	34		dB
2400 2500 MHz		35	38		dB
2775 4990 MHz		27	33		dB
49905900 MHz		25	30		dB
6000 6900 MHz		23	29		dB
70007990 MHz		15	25		dB

Test Circuit

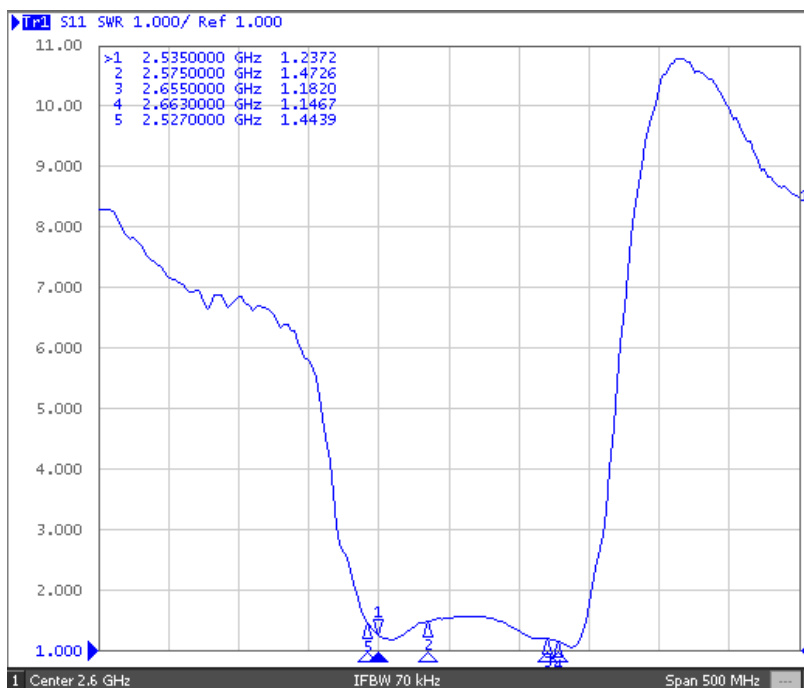


Typical Frequency Response

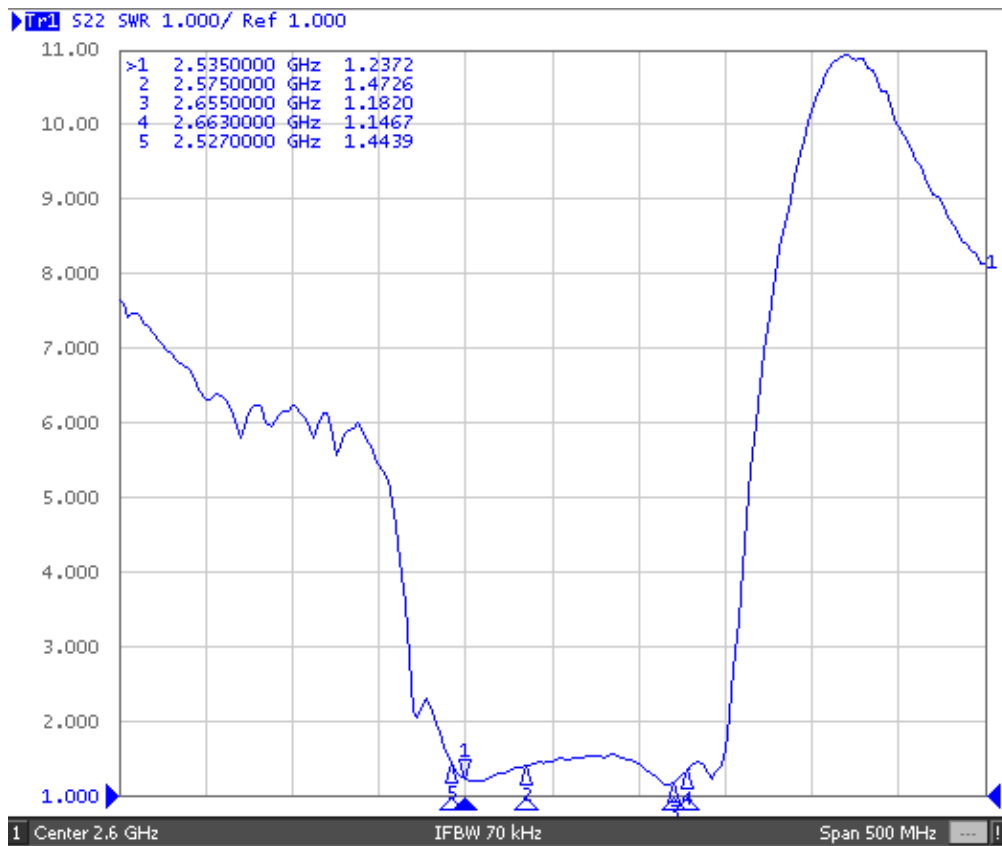
S21



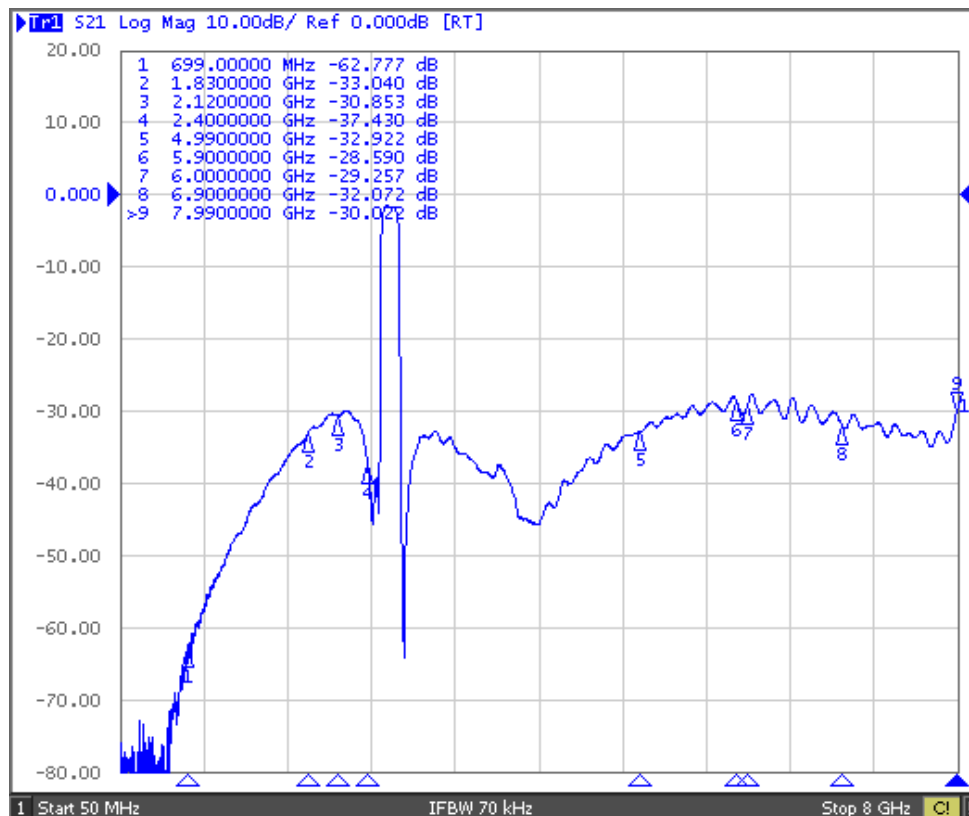
S11



S22



Far side





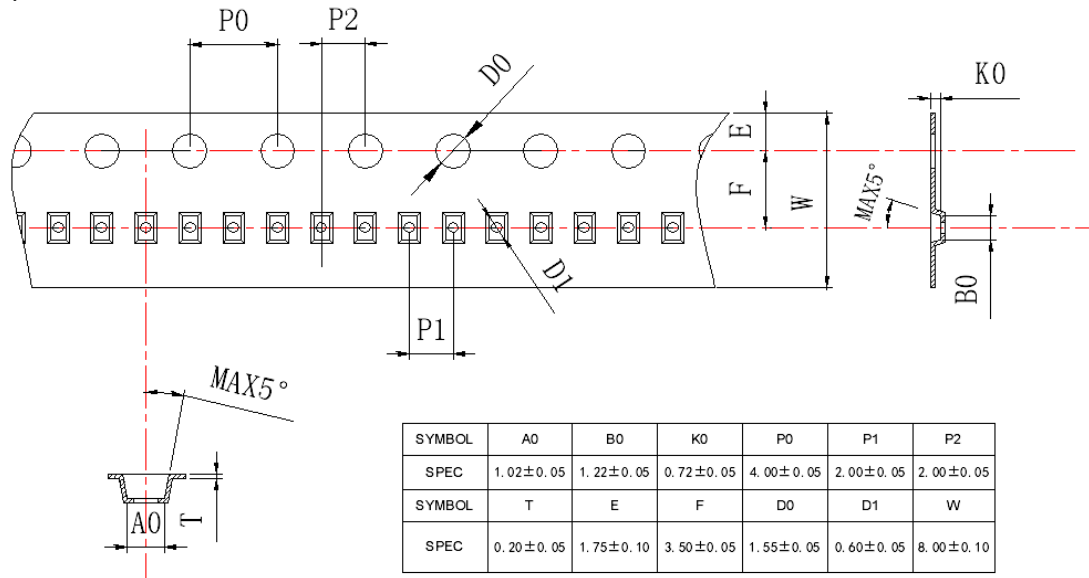
Stability Characteristics

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

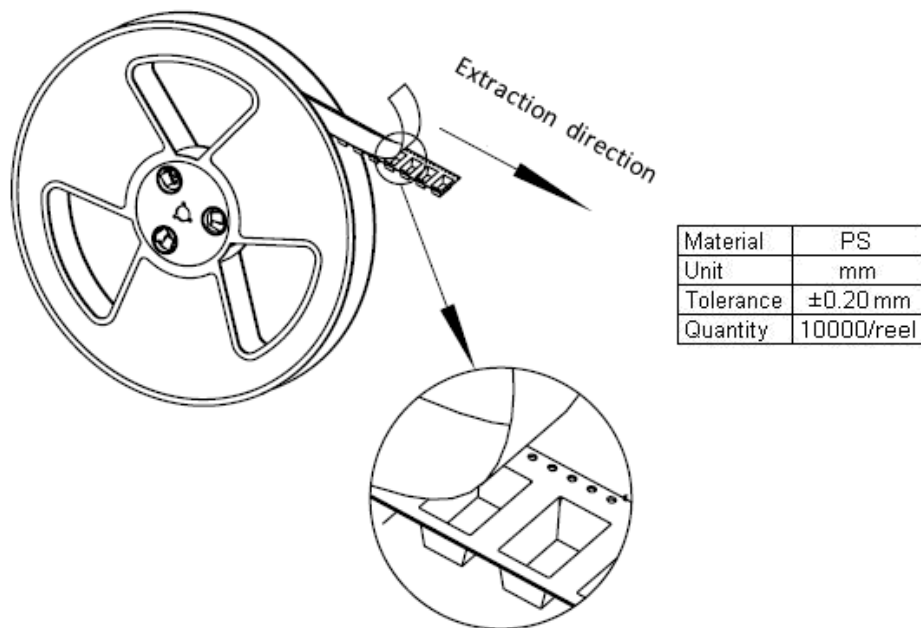
Requirements: The SAW filer shall remain within the electrical specifications after tests.

Packing Information

Carrier Tape



Reel Dimensions



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

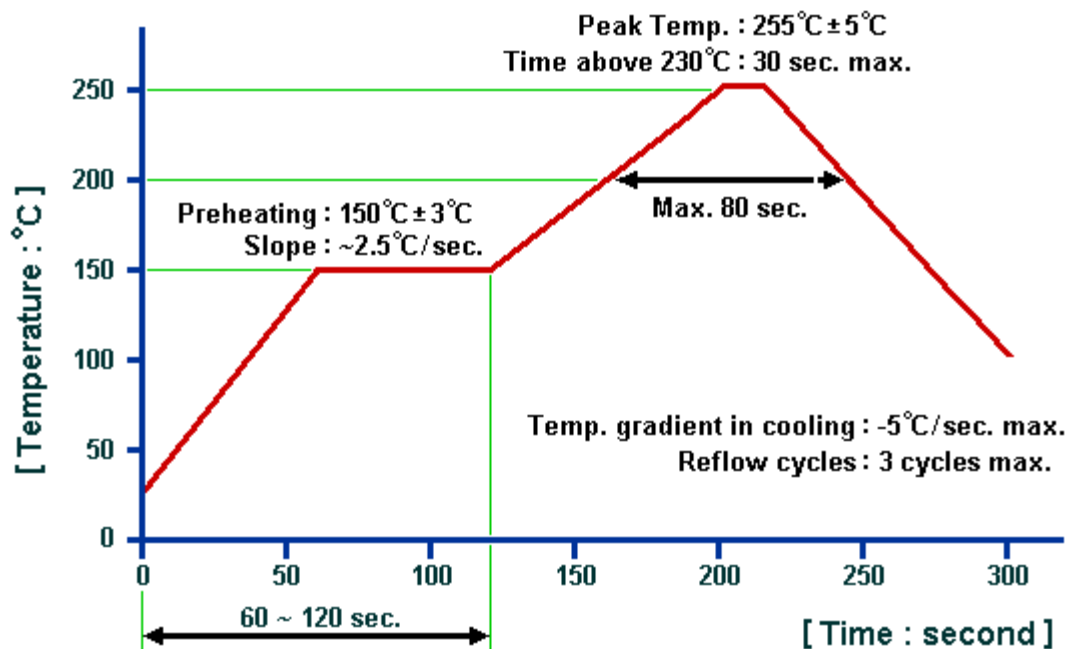
Unit: mm

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.