

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_

PRODUCT 产品: \_\_\_\_\_ SAW FILTER \_\_\_\_\_

MODEL NO 型号: \_\_\_\_\_ KH-SAWF235A \_\_\_\_\_

MARKING 印字: \_\_\_\_\_ ● V 0 \_\_\_\_\_

PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_

APPROVED 批准: \_\_\_\_\_ D A T E 日期: \_\_\_\_\_ 2017-8-28 \_\_\_\_\_

客户确认 CUSTOMER RECEIVED:		
审核 CHECKED	批准 APPROVED	日期 DATE

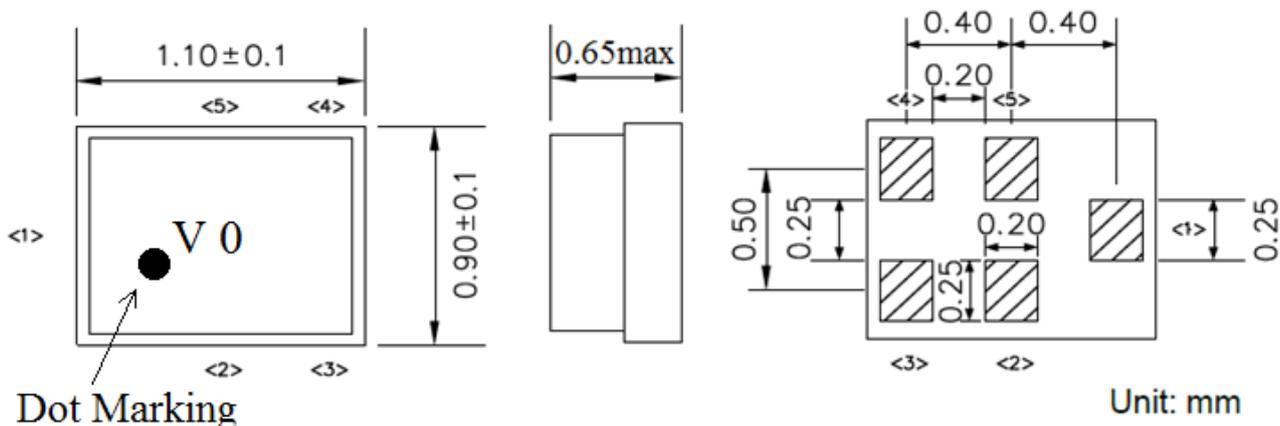
深圳市金航标电子有限公司  
SHENZHEN KINGHELM ELECTRON CO., LTD.



### 1. Application

- Low-loss RF filter for mobile telephone TDSCDMA and TD-LTE Band 40 system.
- Unbalanced to unbalanced operation.
- Useable passband 100MHz.
- RoHS compatible.

### 2. DIMENSION (PKG SIZE 1.1 x 0.9mm)



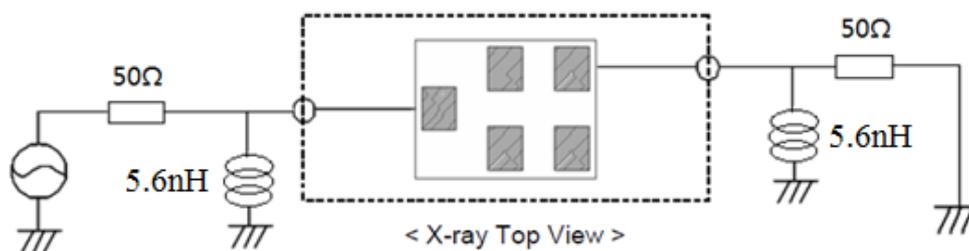
Pin configuration

- 1. Input
- 4. Output
- 2,3,5 To be grounded

### 3. Maximum Rating

Items	Conditions
Operation temperature rang	-30°C ~ +85°C
Storage temperature rang	-40°C ~ +85°C
ESD voltage	ESD(MM) : 50VDC
Sensitive discharge device	ESD(HBM) : 175VDC
DC Voltage VDC	5V
Max Input Power	+29.0dBm 2000h
Moisture Sensitivity Level	MSL 2

### 4. Test Circuit

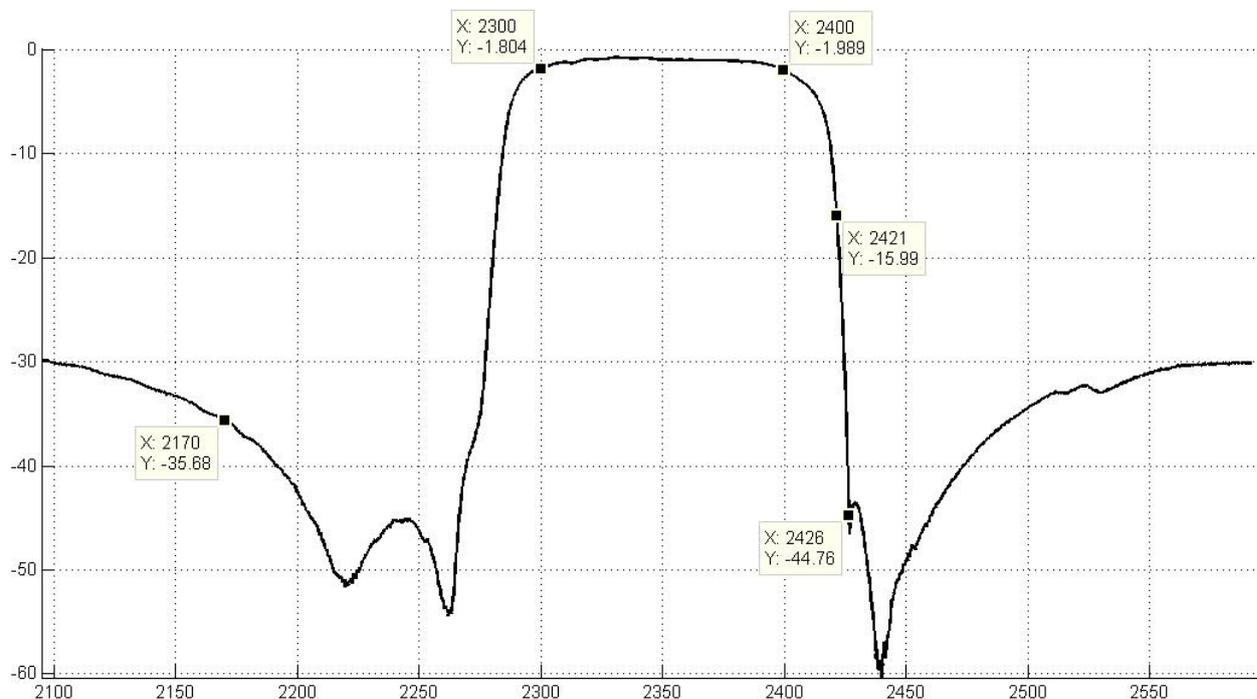


### 5. ELECTRICAL SPECIFICATION

Ta = -30 ~ +85°C

Items	Test Condition	Min	Typ	Max	Unit
Center Frequency	-	-	2350	-	MHz
Insertion Loss	2300~2400 MHz	-	1.9	2.2	dB
Amplitude Ripple	2300~2400 MHz	-	0.6	1.0	dB
Input VSWR	2300~2400 MHz	-	1.6	2.0	
Output VSWR	2300~2400 MHz	-	1.6	2.0	
Absolute Attenuation	10~1574 MHz	22	27	-	dB
	1574~1577 MHz	22	27	-	dB
	1577~1680 MHz	22	27	-	dB
	1845~1880 MHz	23	28	-	dB
	2110~2170 MHz	28	33	-	dB
	2421~2443 MHz	13	16	-	dB
	2426~2448 MHz	27	45	-	dB
	2431~2483 MHz	40	44	-	dB
	4600~4800 MHz	30	42	-	dB
6900~7200 MHz	23	31	-	dB	
Termination Impedance	Input: 50 ohm // 5.6nH Output: 50 ohm // 5.6nH				

### 6. Typical frequency response



## 7. ENVIRONMENTAL CHARACTERISTICS

### 7.1 High temperature exposure

Subject the device to +85°C for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

### 7.2 Low temperature exposure

Subject the device to -40°C for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 5.

### 7.3 Temperature cycling

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +85°C for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 5.

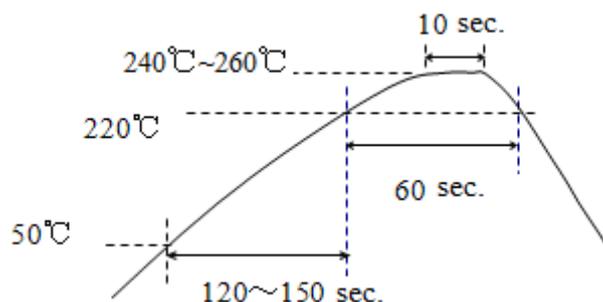
### 7.4 Resistance to solder heat

- 1、immerge the solder bath at 260°C for 10 sec.
- 2、the iron at 370°C for 3 sec

### 7.5 Solderability

Submerge the device terminals into the solder bath at 245°C ±5°C for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in 5.

### 7.6 Reflow soldering



The specimen shall be passed through the reflow furnace with the condition shown in the above profile for 1 time.

The specimen shall be stored at standard atmospheric conditions for 1h, after which the measurement shall be made. Test board shall be 1.6 mm thick. Base material shall be glass fabric base epoxy resin.

### 7.7 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 5.

### 7.8 Vibration

Subject the device to the vibration for 1 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The device shall fulfill the specifications in 5.

## 8. REMARK

### 8.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of

**SAW FILTER** **KH-SAWF235A**

the component. Please avoid static voltage.

8.2 Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

8.3 Soldering

Only pad component may be solded. Please avoid soldering another part of component.

**9. Packing**

9.1 Dimensions

(1) Carrier Tape: Figure 1

(2) Reel: Figure 2

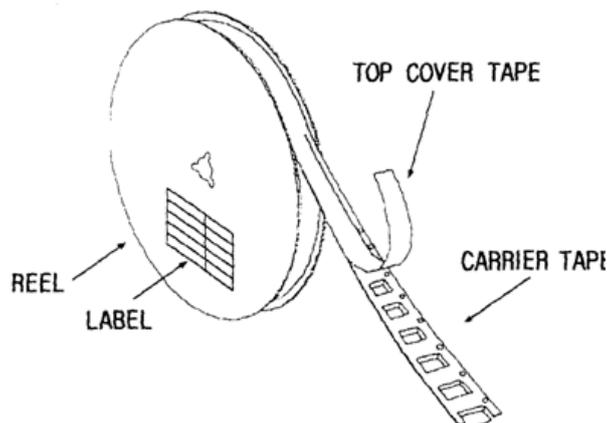
(3) The product shall be packed properly not to be damaged during transportation and storage.

9.2 Reeling Quantity

10000 pcs/reel  $\phi$  178mm

9.3 Taping Structure

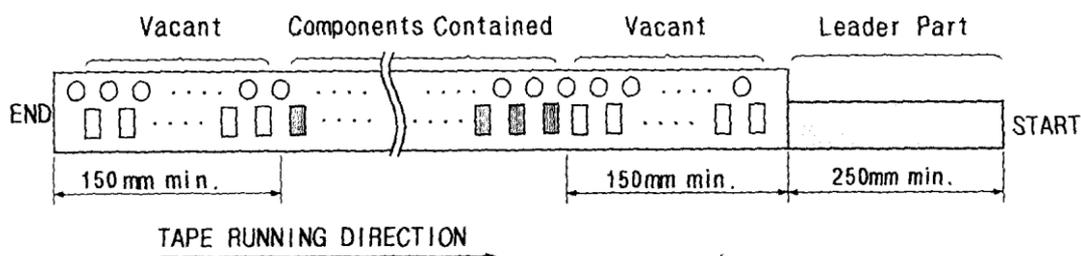
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
Marking	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.

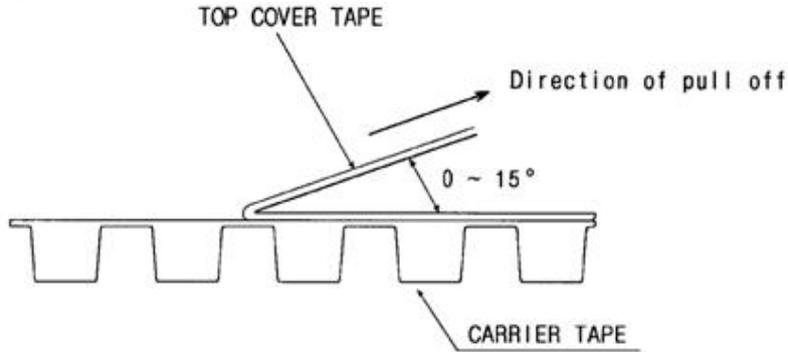


**10. TAPE SPECIFICATIONS**

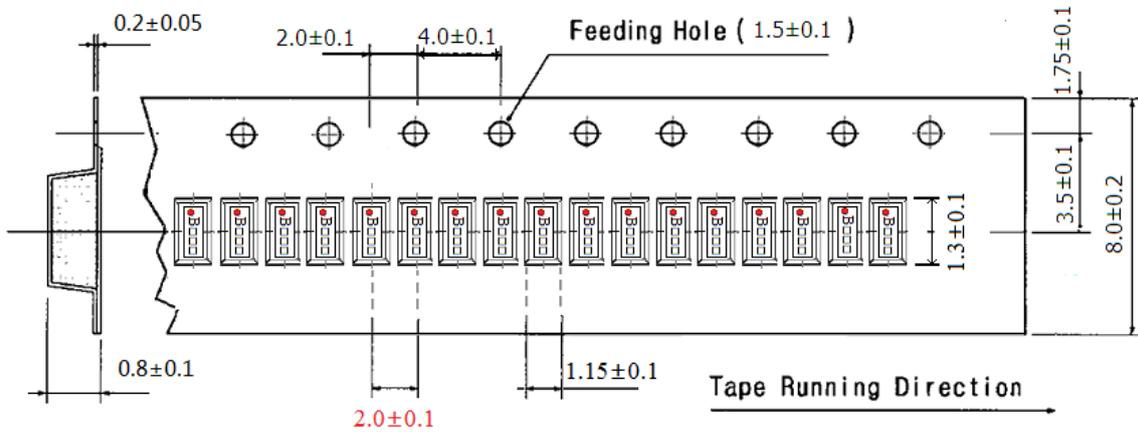
10.1 Tensile Strength of Carrier Tape: 4.4N/mm width

10.2 Top Cover Tape Adhesion (See the below figure)

- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.
- (3) force: 20~70g



[Figure 1] Carrier Tape Dimensions



Prior to the size of 4.0±0.1, after encryption,  
modified to 2.0±0.1.

[Figure 2] 10000 pcs/reel φ 178mm

