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| Approved by: |
| Checked by: |
| Issued by: |

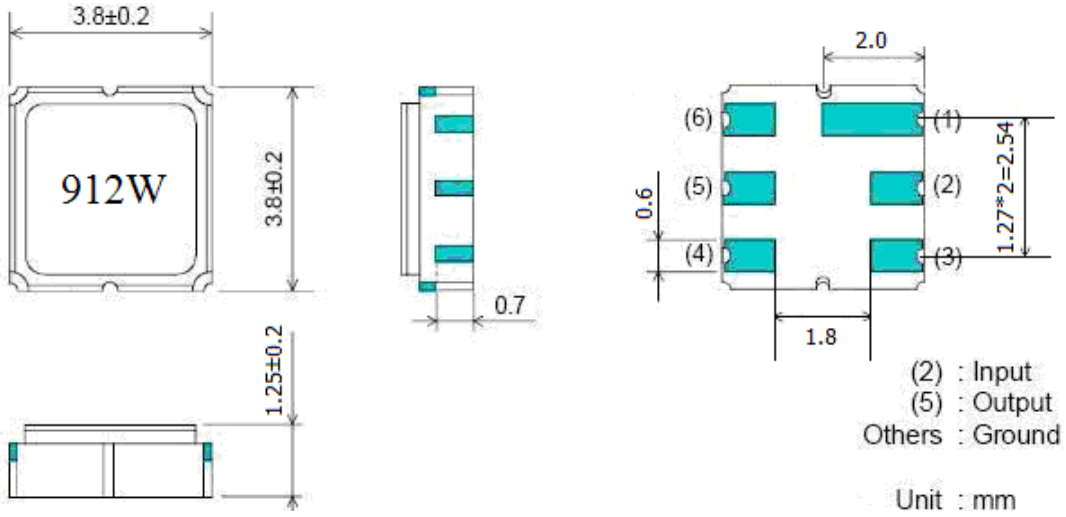
# *SPECIFICATION*

**PRODUCT: SAW RESONATOR**

**MODEL: HDF912A S4**

**SHOULDER ELECTRONICS LIMITED**

## 1. Package Dimension




## 2. Marking

**912W**

1.Color: Black or Blue

2.912: Center Frequency(MHz)

## 3. Performance

3.1 Application

Low-Loss SAW Filter of cordless system.

Center Frequency: 912 MHz

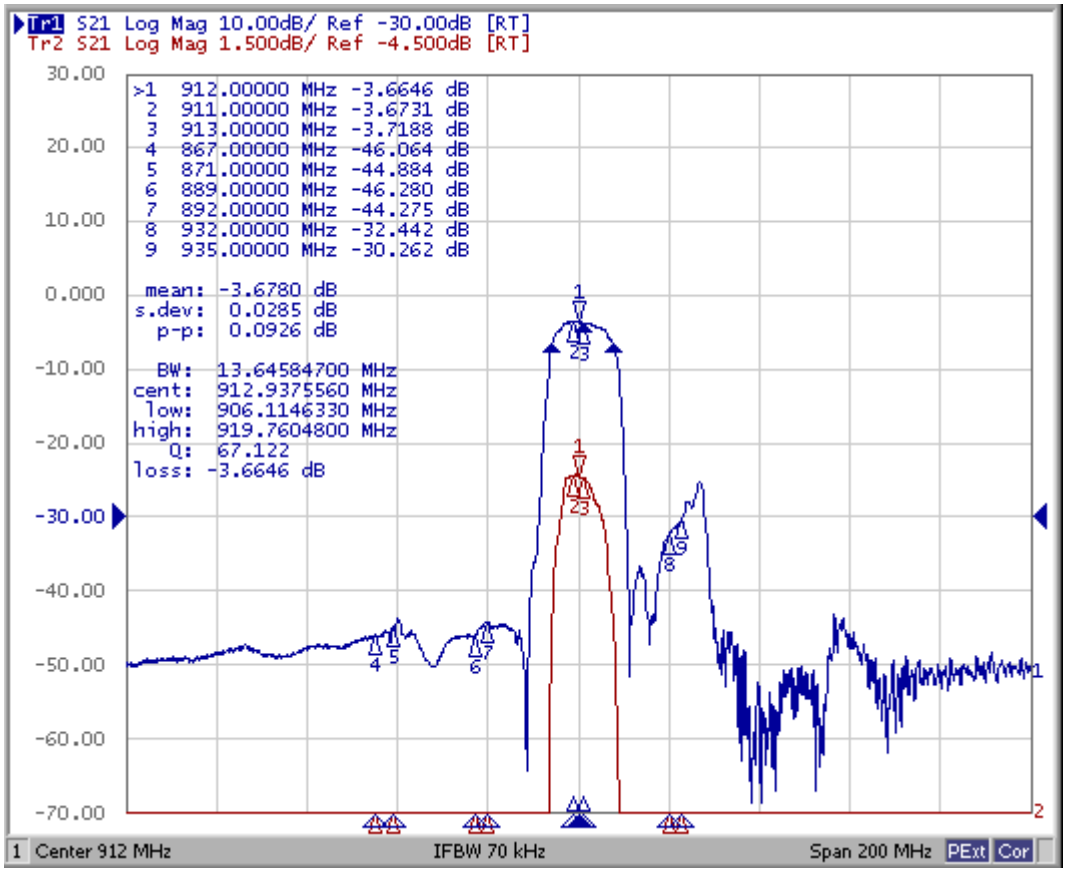
3.2 Maximum Rating

| | |
|---|---|
| Operation Temperature Range | -20℃ to +60℃ |
| Storage Temperature Range | -40℃to +85℃ |
| DC. Voltage | 10 V max. |
| Maximum Input Power | 10 dBm |

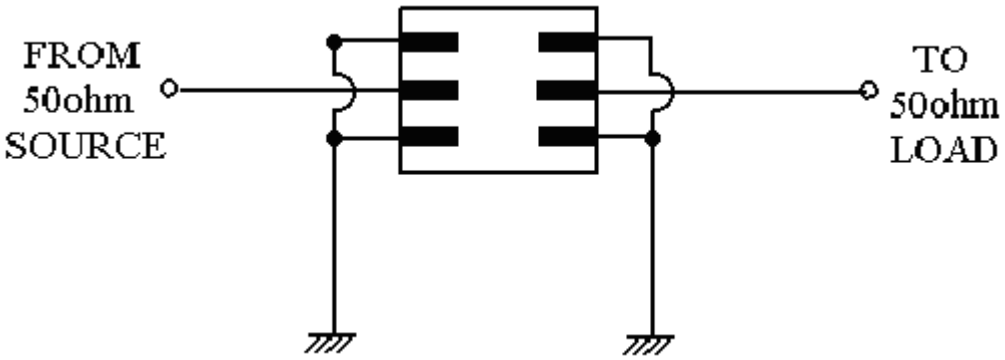
3.3 Electronic Characteristics

| Item | Specification |
|---|---|
| Center Frequency(fo) | 912 MHz |
| Insertion Loss(dB)<br><br>1.)911-913 MHz<br>2.)867-871 MHz<br>3.)889-892MHz<br>4.)932-935MHz<br>5.)953-958 MHz | <br><br>4.5max<br>40 min<br>30 min<br>30 min<br>40 min |
| Ripple deviation (911-913MHz)(dB) | 1.5max |
| Input/output Impedance(Nominal) | 50Ω |

3.4 Frequency Characteristics




3.5 Test Circuit




# 4. ENVIRONMENTAL CHARACTERISTICS

4-1 Temperature cycling

Subject the device to a low temperature of -40℃ for 30 minutes. Following by a high temperature of +25℃ for 5 Minutes and a higher temperature of +85℃ for 30 Minutes. Then release the device into the room conditions for 1 to 2 hours prior to the measurement. It shall meet the specifications in table 1.

4-2 Resistance to solder heat

Submerge the device terminals into the solder bath at 260℃ ±5℃ for 10±1 sec. Then release the device into the room conditions for 4 hours. It

shall meet the specifications in table 1.

4-3 Solderability

Submerge the device terminals into the solder bath at 245℃ ±5℃ for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in table 1.

4-4 Mechanical shock

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

4-5 Vibration

Subject the device to the vibration for 2 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 hz. The filter shall fulfill the specifications in table 1.

# 5. REMARK

5.1 Static voltage

Static voltage between signal load & ground may cause deterioration &destruction of the component. Please avoid static voltage.

5.2 Ultrasonic cleaning

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

5.3 Soldering

Only leads of component may be soldered. Please avoid soldering another part of component.

# 6. Packing

6.1 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.

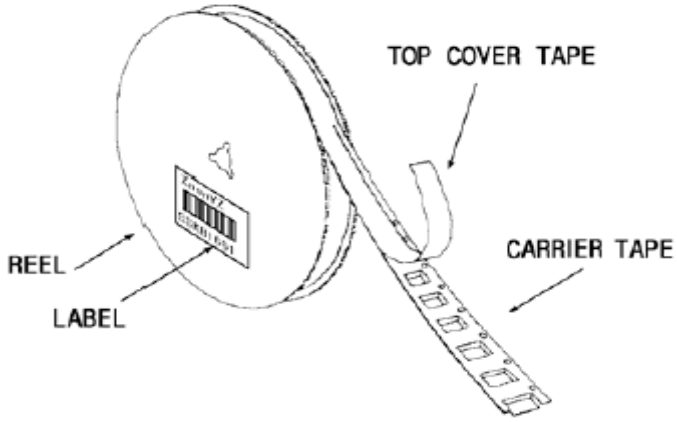
6.2 Reeling Quantity

1000 pcs/reel 7’’

3000 pcs/reel 13’’

6.3 Taping Structure

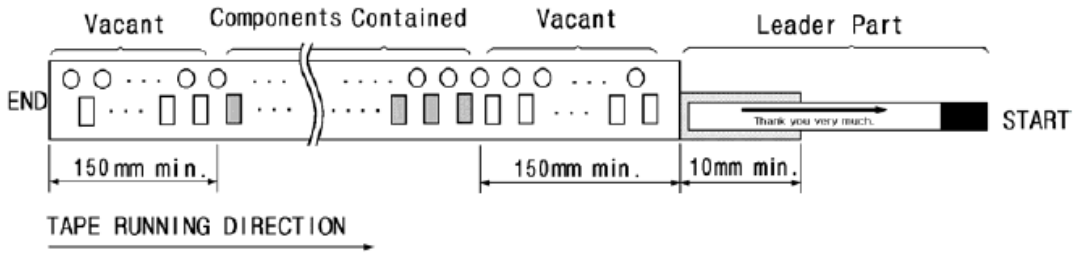
(1) The tape shall be wound around the reel in the direction shown below.




(2) Label

| | |
|---|---|
| Device Name | |
| User Product Name | |
| Quantity | |
| Lot No. | |

(3) Leader part and vacant position specifications.

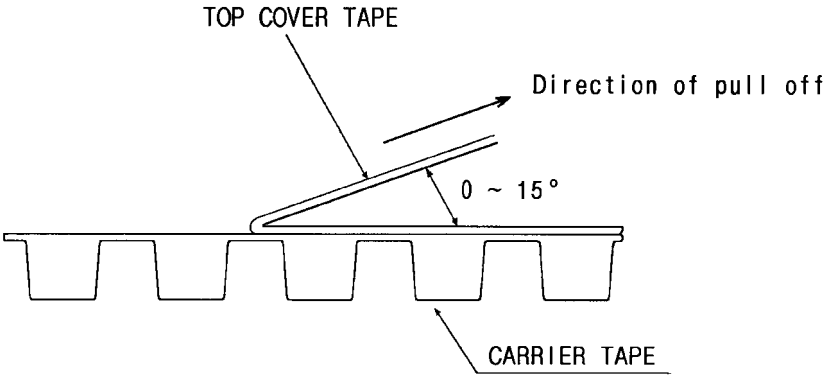



# 7. TAPE SPECIFICATIONS

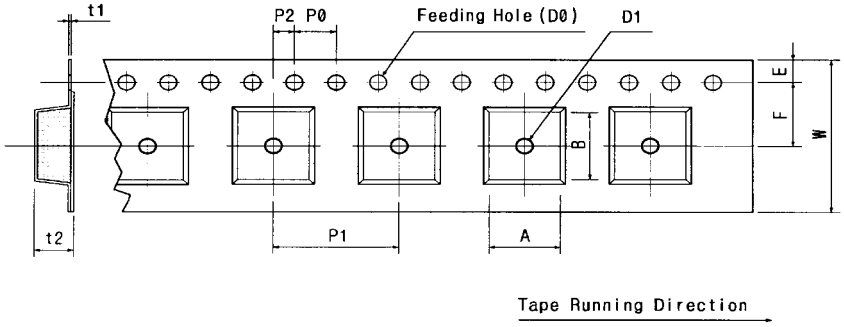
7.1 Tensile Strength of Carrier Tape: 4.4N/mm width

7.2 Top Cover Tape Adhesion (See the below figure)

(1) pull off angle: 0~15$^{o}$
(2) speed: 300mm/min.
(3) force: 20~70g




[Figure 1] Carrier Tape Dimensions

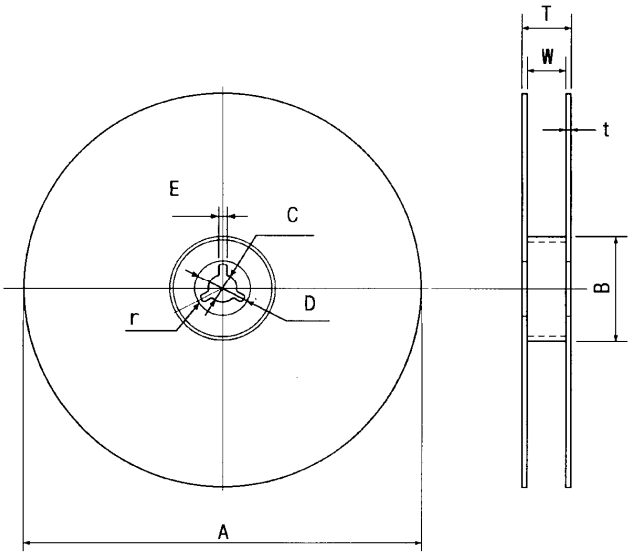



[Unit:mm]

| W | F | E | P0 | P1 | P2 | D0 | D1 | t1 | t2 | A | B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12.00 ±0.30 | 5.50 ±0.10 | 1.75 ±0.10 | 4.00 ±0.10 | 4.00 ±0.10 | 2.00 ±0.10 | Ø1.50 | Ø1.5 ±0.25 | 0.31 ±0.05 | 1.30 ±0.10 | 3.4 MAX. | 3.4 MAX |

[Figure 2]

[Unit:mm]




| A | B | C | D | E | W | t | r |
|---|---|---|---|---|---|---|---|
| Ø330 ±1.0 | Ø100 ±0.5 | Ø13 ±0.5 | Ø21 ±0.8 | 2 ±0.5 | 13 ±0.3 | 3 max. | 1.0 max. |