

Approved by:

Checked by:

Issued by:

# ***SPECIFICATION***

**MODEL: HD F953AS6**

---

**MARKING HD 6930**

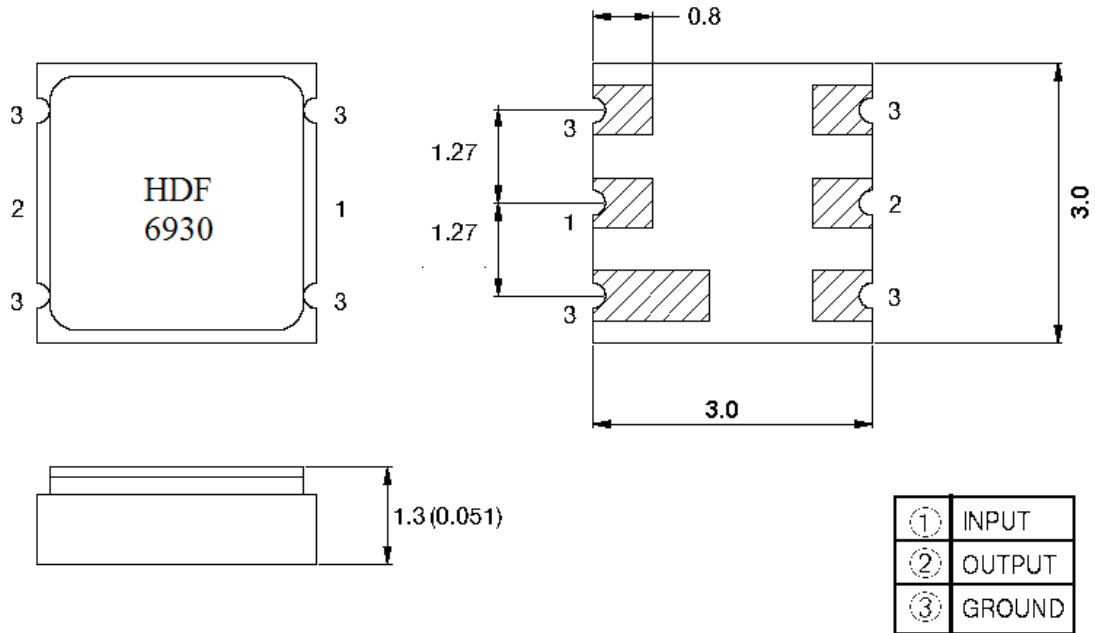
---



**SHOULDER ELECTRONICS LIMITED**

---

## 1. Package Dimension



Unit:mm

## 2. Marking

### HDF 6930

1.Color: Black or Blue

2.953: Center Frequency(MHz)

## 3. Performance

### 3.1 Application

Low-Loss SAW Filter of cordless system.

Center Frequency:953 MHz

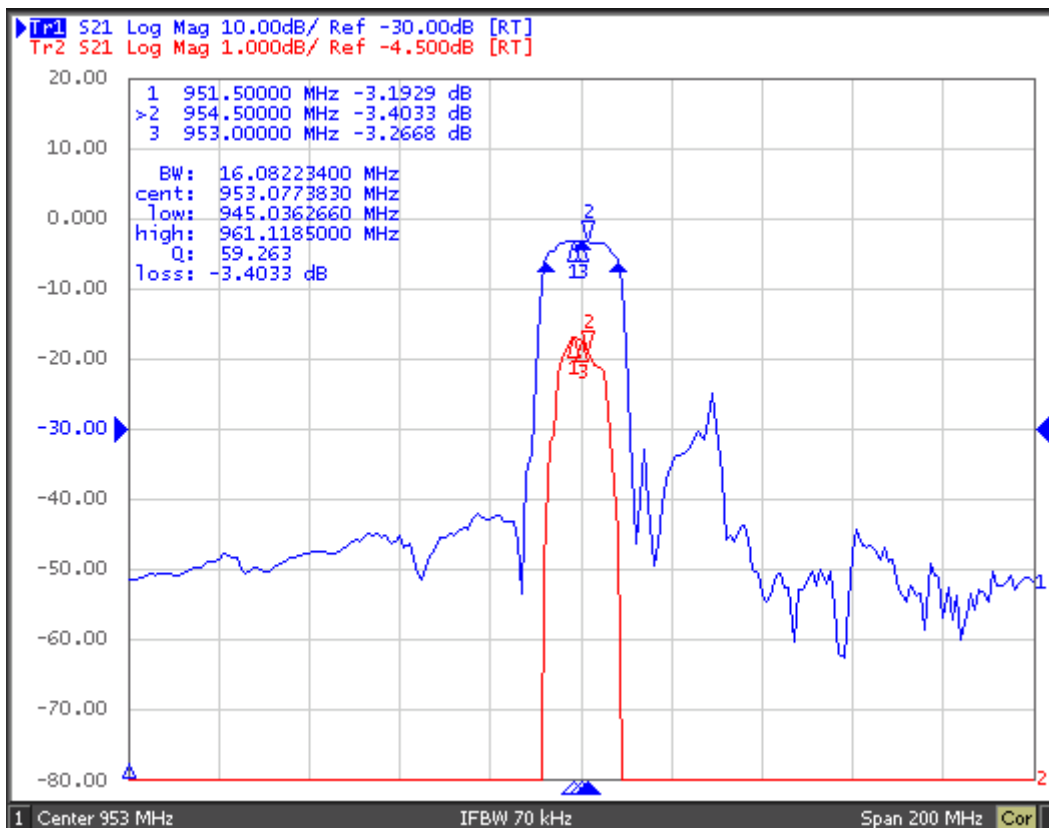
### 3.2 Maximum Rating

Operation Temperature Range	-10°C to +70°C
Storage Temperature Range	-40°C to +85°C
DC Voltage	10 V max.
Maximum Input Power	10dBm

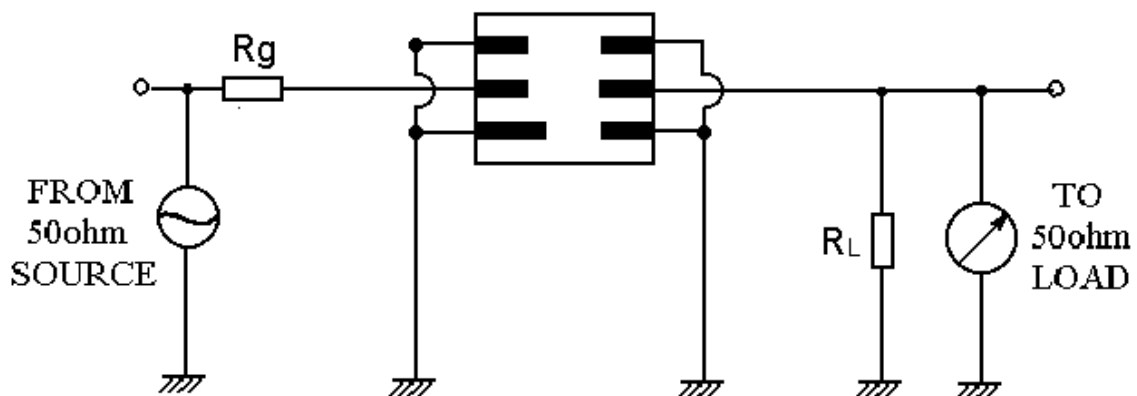
### 3.3 Electronic Characteristics

Item	Frequency	Specification
Center Frequency( $f_0$ )	953MHz	
Pass Band Width	$F_0 \pm 3.5\text{MHz}$	
Insertion Loss	Passband	4.5dB max.
Stop Band Rejection	$F_0-100\sim-40.8\text{MHz}$ $F_0+50\sim+100\text{MHz}$	40dB min. 40dB min.
Terminating Impedance		$50\ \Omega // <10\text{nH}$
Operating Temperature Range		$-10^\circ\text{C}$ To $+70^\circ\text{C}$

### 3.4 Frequency Characteristics



### 3.5 Test Circuit



## **4. ENVIRONMENTAL CHARACTERISTICS**

### 4-1 Temperature cycling

Subject the device to a low temperature of  $-40^{\circ}\text{C}$  for 30 minutes. Following by a high temperature of  $+25^{\circ}\text{C}$  for 5 Minutes and a higher temperature of  $+85^{\circ}\text{C}$  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  $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for  $10 \pm 1$  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  $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$  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

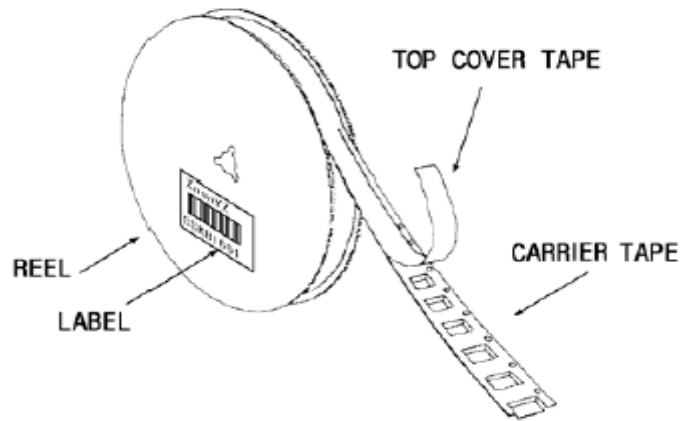
(3) The product shall be packed properly not to be damaged during transportation and storage.

## 6.2 Reeling Quantity

1000 pcs/reel 7”  
 3000 pcs/reel 13”

## 6.3 Taping Structure

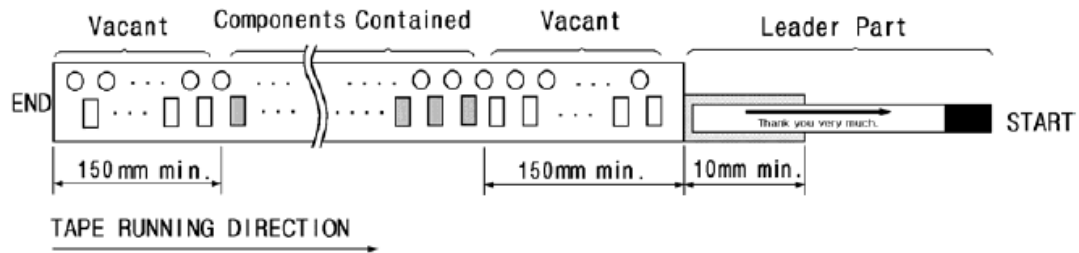
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.

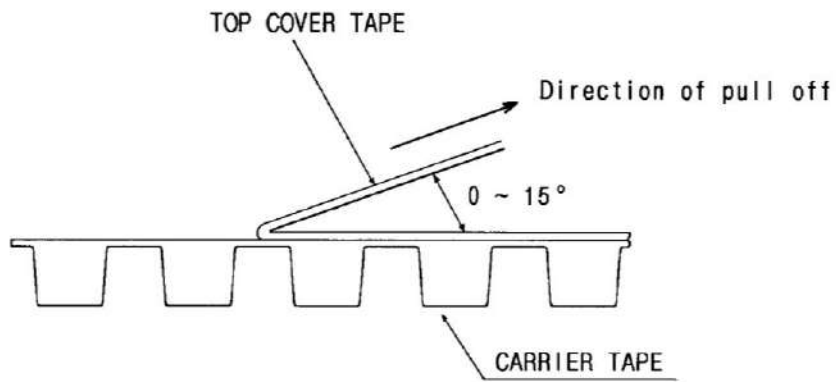


## 7. TAPE SPECIFICATIONS

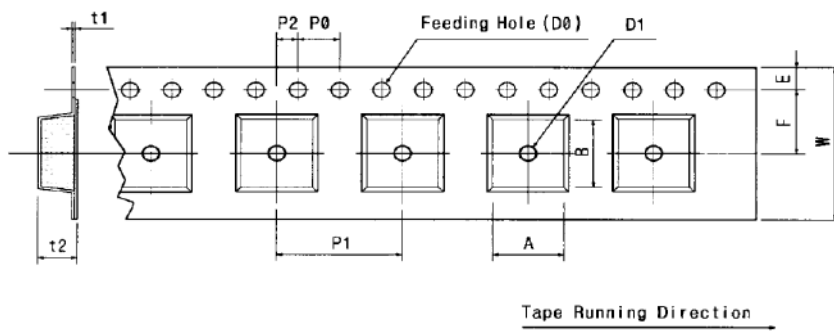
7.1 Tensile Strength of Carrier Tape: 4.4N/mm width

7.2 Top Cover Tape Adhesion (See the below figure)

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



[Figure 1] Carrier Tape Dimensions

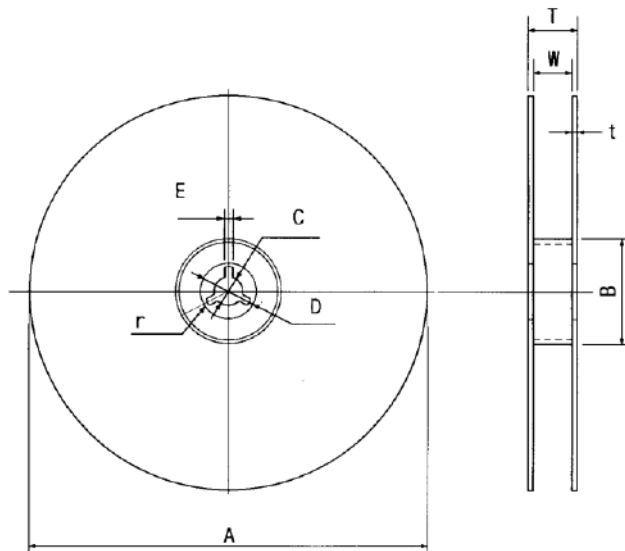


[Unit:mm]

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

[Figure 2]

[Unit:mm]



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