



# SHOULDER

## SHOULDER ELECTRONICS LIMITED

### SPECIFICATION FOR APPROVAL

NO 编号: \_\_\_\_\_

CUSTOMER 客 户: \_\_\_\_\_

PRODUCT 产 品: \_\_\_\_\_ SAW FILTER \_\_\_\_\_

MODEL NO 型 号: \_\_\_\_\_ HDF1575A SMD-4 \_\_\_\_\_

PREPARED 编 制: \_\_\_\_\_ Fengyu \_\_\_\_\_ CHECKED 审 核: \_\_\_\_\_ York \_\_\_\_\_

APPROVED 批 准: \_\_\_\_\_ Lijiating \_\_\_\_\_ DATE 日 期: \_\_\_\_\_ 2006-5-11 \_\_\_\_\_

CUSTOMER 客户确认意见:

CHECKED 审 核:

APPROVED 批 准:

DATE 日 期:

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## 1.Features

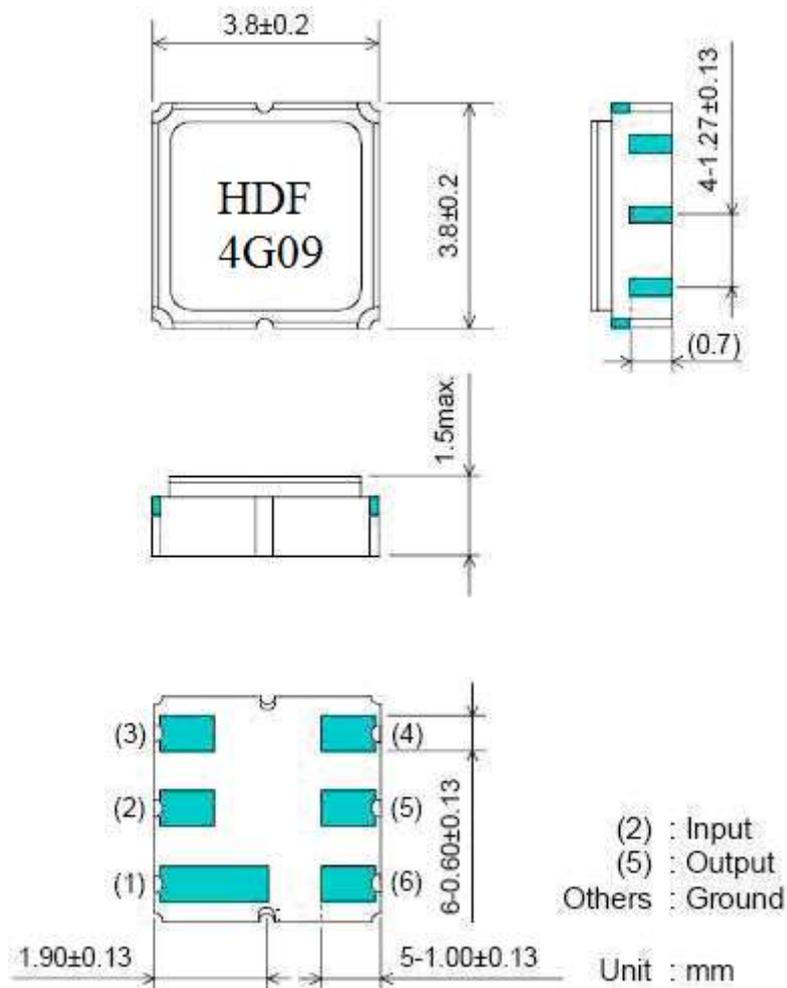
GPS applications

Usable bandwidth of 2 MHz

No impedance matching require for operation at 50 .

Single-ended Operation

## 2.Package Dimension



## 3. Marking

2.1 Color: Black or Blue

2.2 1575: Center Frequency(MHz)

## 4. Performance

4.1 Application

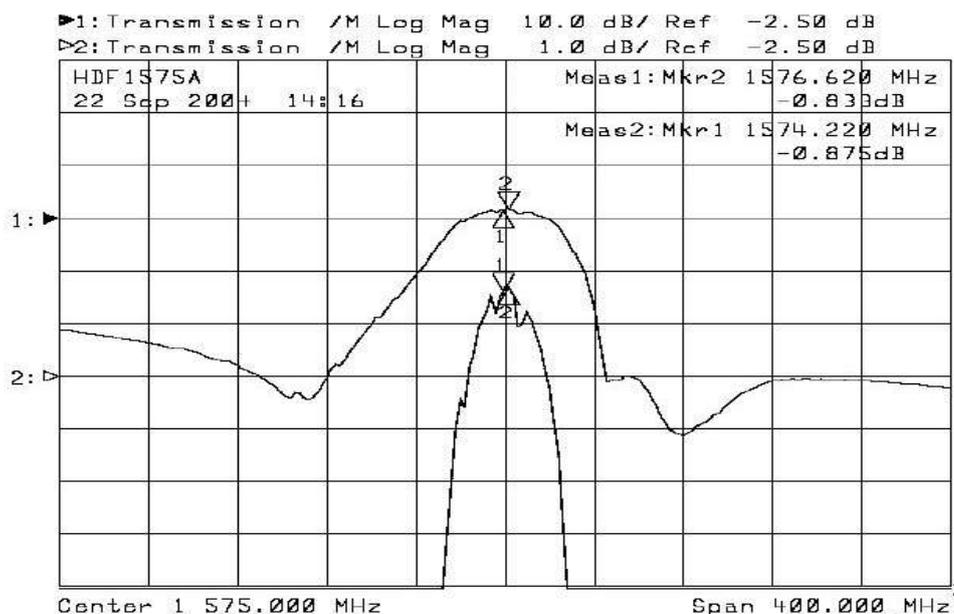
Low-Loss SAW Filter of cordless system.

Center Frequency: 1575.42 MHz

#### 4.2 Maximum Rating

Operation Temperature Range	-40°C to +85°C
Storage Temperature Range	-40°C to +85°C
Power Handling Capability	10dBm

#### 4.3 Electronic Characteristics

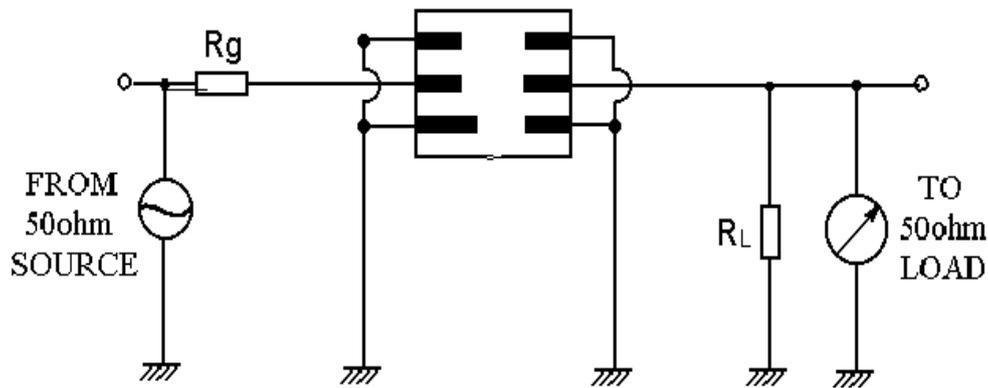


Parameter	Symbol	Conditions	Min	Typ.	Max.	Unit
Center frequency				1575.42		MHZ
Operational bandwidth	f op		1574.22		1576.62	MHZ
Insertion Loss	IL	In f op		1.5	2.5	dB
Amplitude Variation	AV	In f op		0.2	0.5	dB
VSWER	SWR	In f op		1.3	2	
Rejection wrt 0 dB	Rj1	0.3 ~ 700 MHz	40	45		dB
In Top	Rj2	700~1460MHz	37	40.5		dB
	Rj3	1460~1470MHz	45	50		dB
	Rj4	1470~1525MHz	37	43		dB
	Rj5	1525~1535.42MHz	20	25		dB
	Rj6	1615.42~1620MHz	25	35		dB
	Rj7	1620~1650 MHz	45	50		dB
	Rj8	1650~3000 MHz	40	45		dB
I/P & O/P impedance	Zin/Zout	Unmatched		50		Ohm

Notes :

- 1) All specifications are based on the matching schematic shown below, measured by Agilent Network analyzer and full 2 port calibration.
- 2) Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
- 3) All attenuation measurements are measured relative to insertion loss

#### 4.4 Test Circuit



## 5. ENVIRONMENTAL CHARACTERISTICS

### 5-1 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.

### 5-2 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.

### 5-3 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.

### 5-4 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.

### 5-5 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.

## 6. REMARK

### 6.1 Static voltage

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

### 6.2 Ultrasonic cleaning

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

### 6.3 Soldering

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

## 7. Packing

### 7.1 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.

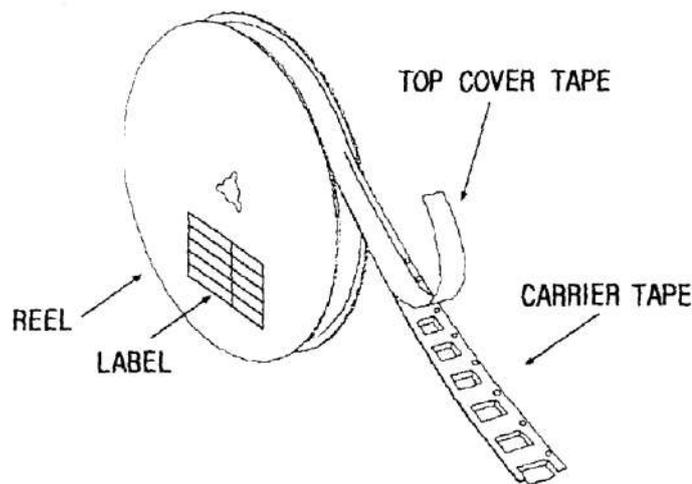
### 7.2 Reeling Quantity

1000 pcs/reel 7"

3000 pcs/reel 13"

### 7.3 Taping Structure

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

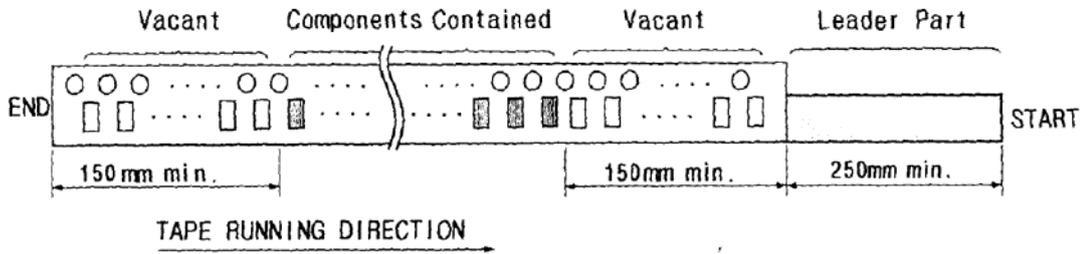


(2) Label

Device Name	
User Product Name	
Quantity	

Lot No.	
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(3) Leader part and vacant position specifications.

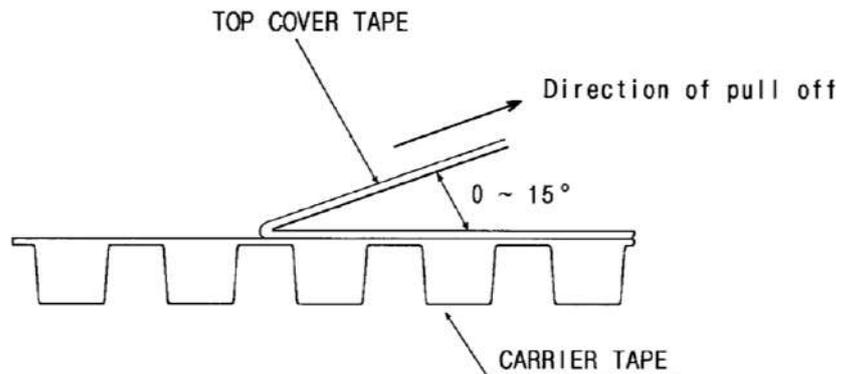


## 8. TAPE SPECIFICATIONS

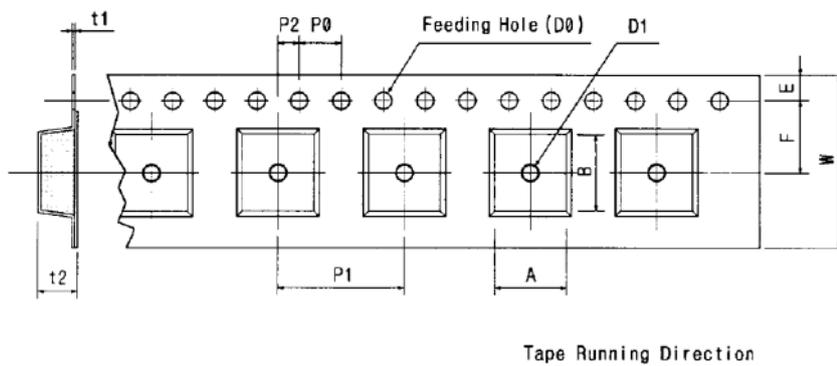
8.1 Tensile Strength of Carrier Tape: 4.4N/mm width

8.2 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

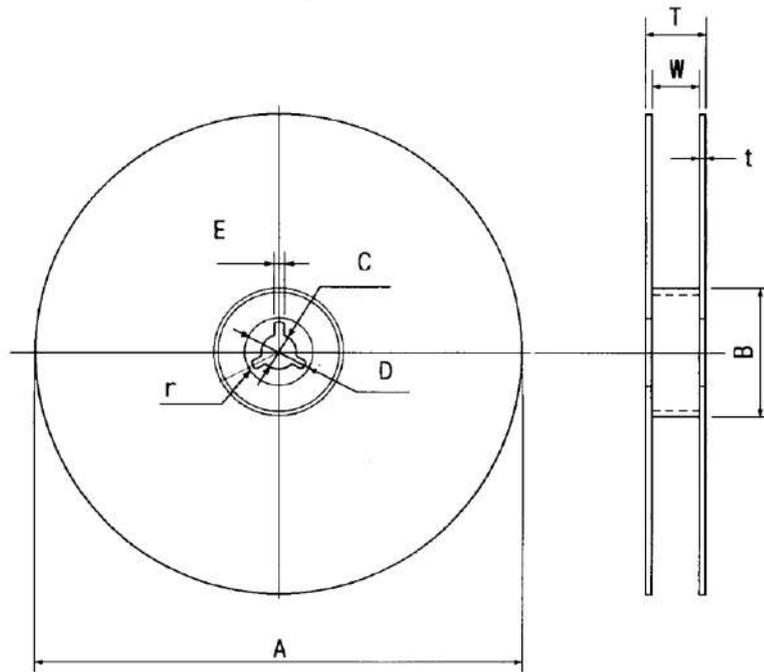


[Unit:mm]

W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12.00 ±0.30	5.50 ±0.10	1.75 ±0.10	4.00 ±0.10	8.00 ±0.10	2.00 ±0.10	Ø1.50	Ø1.0 ±0.25	0.25 ±0.05	1.65 ±0.10	4.04 ±0.10	4.10 ±0.10

[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.