

规格书编号

SPEC NO :

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_  
PRODUCT 产品: \_\_\_\_\_ SAW FILTER \_\_\_\_\_  
MODEL NO 型号: \_\_\_\_\_ HDF415E SMD-5 \_\_\_\_\_  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ D A T E 日期: \_\_\_\_\_ 2006-5-11 \_\_\_\_\_

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

无锡市好达电子有限公司  
Shoulder Electronics Limited

更改历史记录  
History Record

| 更改日期<br>Date | 规格书编号<br>Spec. No. | 产品型号<br>Part No. | 客户产品型号<br>Customer No. | 更改内容描述<br>Modify Content | 备注<br>Remark |
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**1. SCOPE**

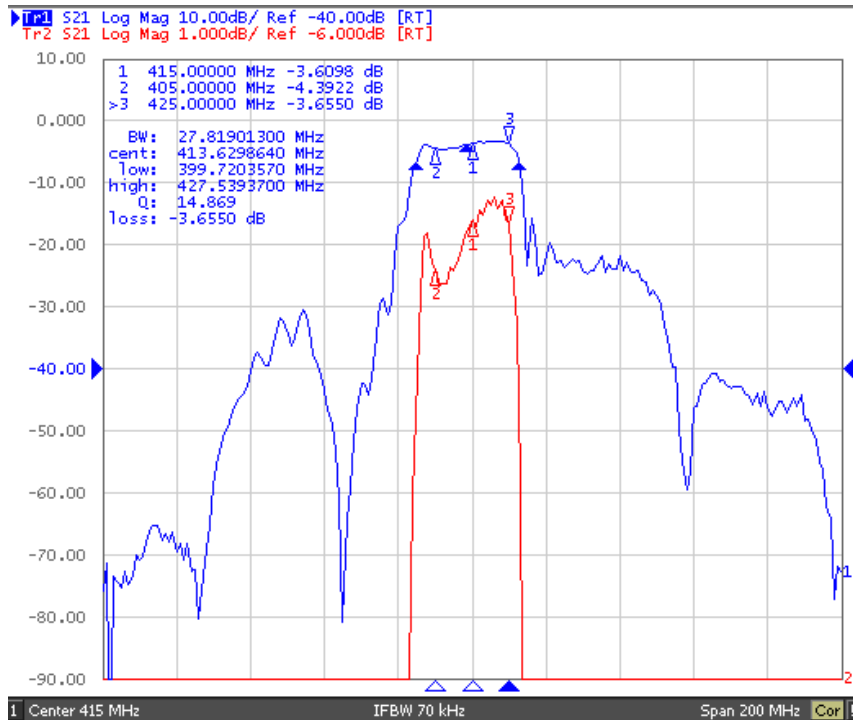
This specification shall cover the characteristics of SAW filter With F415E used for the page system.

**2. ELECTRICAL SPECIFICATION**

|                       |                |
|-----------------------|----------------|
| DC Voltage VDC        | 10V            |
| AC Voltage Vpp        | 10V50Hz/60Hz   |
| Operation temperature | -40°C to +85°C |
| Storage temperature   | -45°C to +85°C |
| RF Power Dissipation  | 0dBm           |

Electronic Characteristics

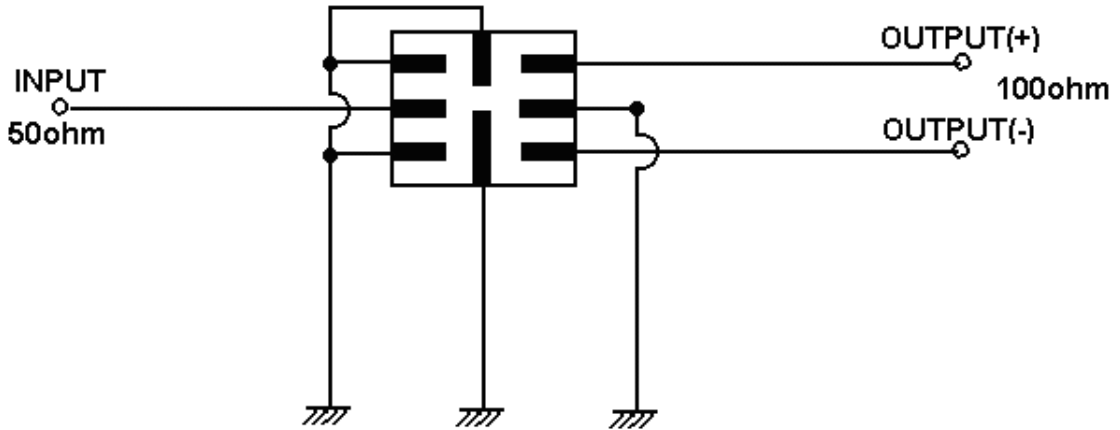
2-1. Typical frequency response



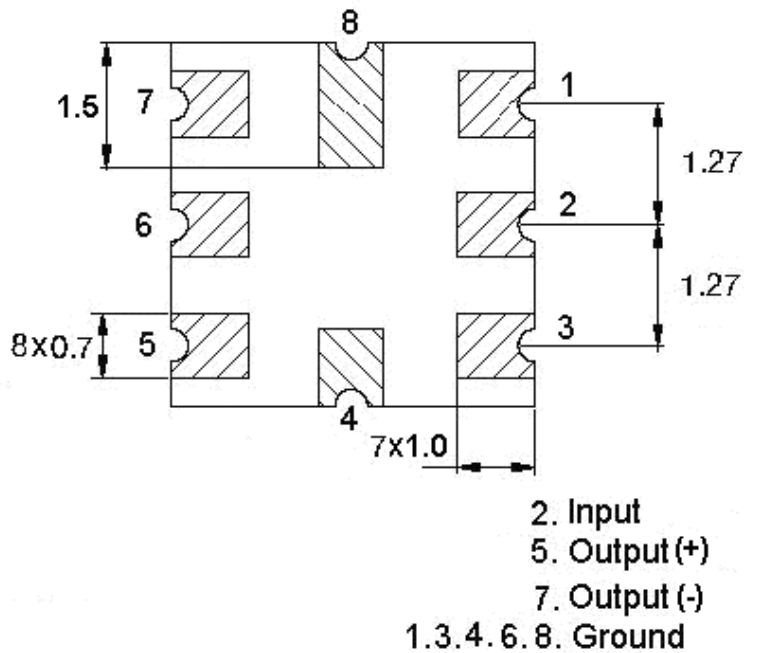
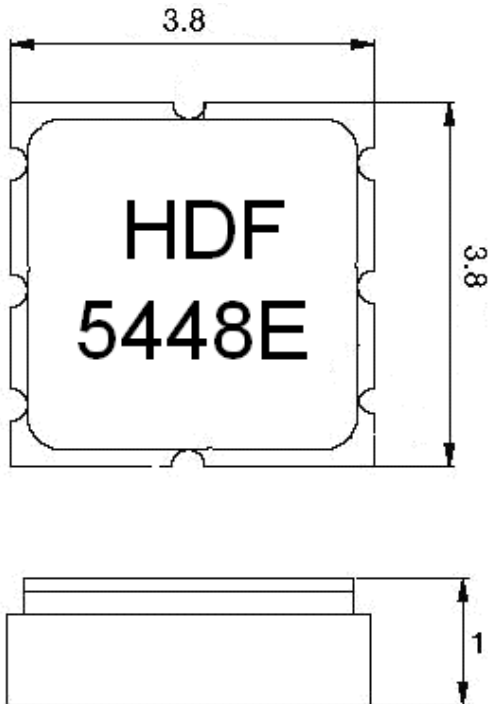
2-2. Electrical characteristics

| Part number                     | F415E           | Unit  |
|---------------------------------|-----------------|-------|
| Nominal center frequency (Fo)   | 415.0           | MHz   |
| Insertion Loss                  |                 |       |
| 1. fo-60~fo-100 MHz             | 45min           | dB    |
| 2. fo                           | 4.5max.         |       |
| 3. .fo +70~ fo +100MHz          | 45min           |       |
| Ripple (with Fo ± 12.0MHz)      | 2.0max          | dB    |
| -3dB pass band width            | 30min.          | MHz   |
| Input/Output Impedance(Nominal) | 50//100 balance | Ω /pF |

**3. TEST CIRCUIT**



**4. DIMENSION**



**5. ENVIRONMENTAL CHARACTERISTICS**

5-1 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 2-2.

5-2 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 2-2.

### 5-3 Temperature cycling

Subject the device to a low temperature of  $-40^{\circ}\text{C}$  for 30 minutes. Following by a high temperature of  $+85^{\circ}\text{C}$  for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 2-2.

### 5-4 Resistance to solder heat

Dip the device terminals no closer than 1.5mm into the solder bath at  $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for  $10 \pm 1$  sec. Then release the device into the room conditions for 4 hours. The device shall meet the specifications in 2-2.

### 5-5 Solderability

Subject 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 terminals must be covered with new solder. It shall meet the specifications in 2-2.

### 5-6 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 2-2.

### 5-7 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 2-2.

## 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.

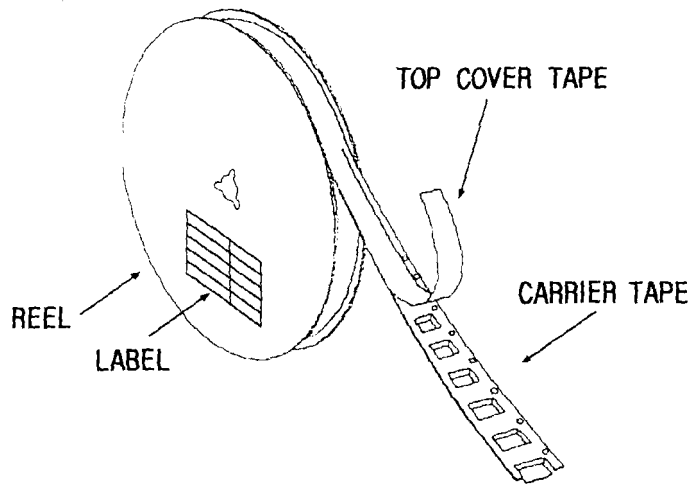
### 7.2 Reeling Quantity

1000 pcs/reel 7"

3000 pcs/reel 13"

### 7.3 Taping Structure

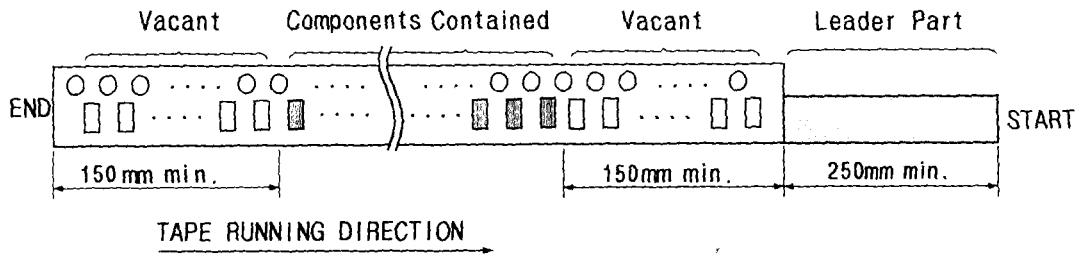
(1) The tape shall be wound around the reel in the direction shown below.



(2) Label

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

(3) Leader part and vacant position specifications.



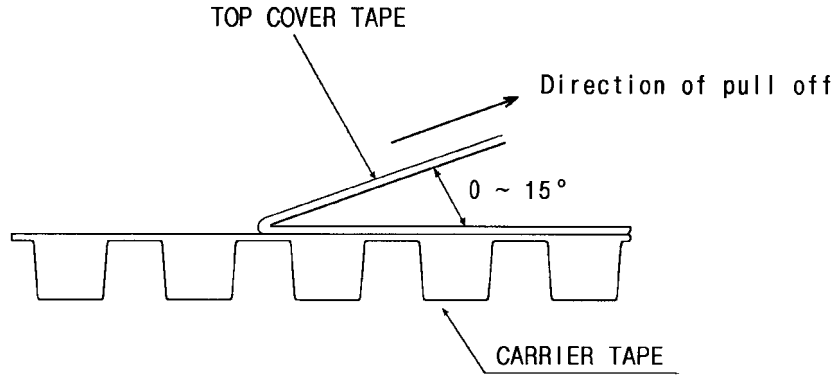
## 8. TAPE SPECIFICATIONS

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

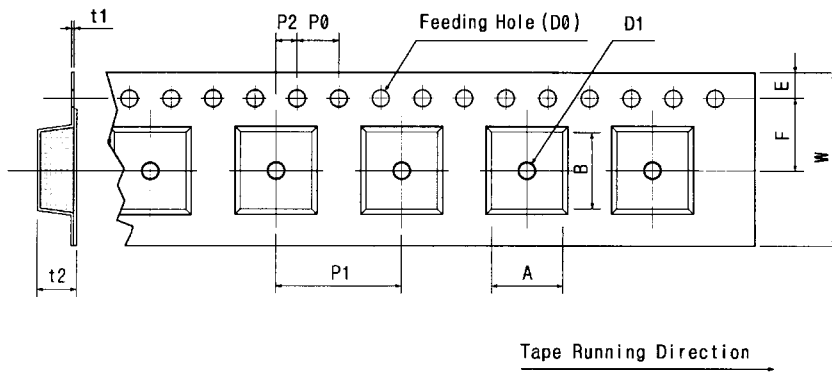
8.2 Top Cover Tape Adhesion (See the below figure)

- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.

(3) force: 20~70g



[Figure 1] Carrier Tape Dimensions

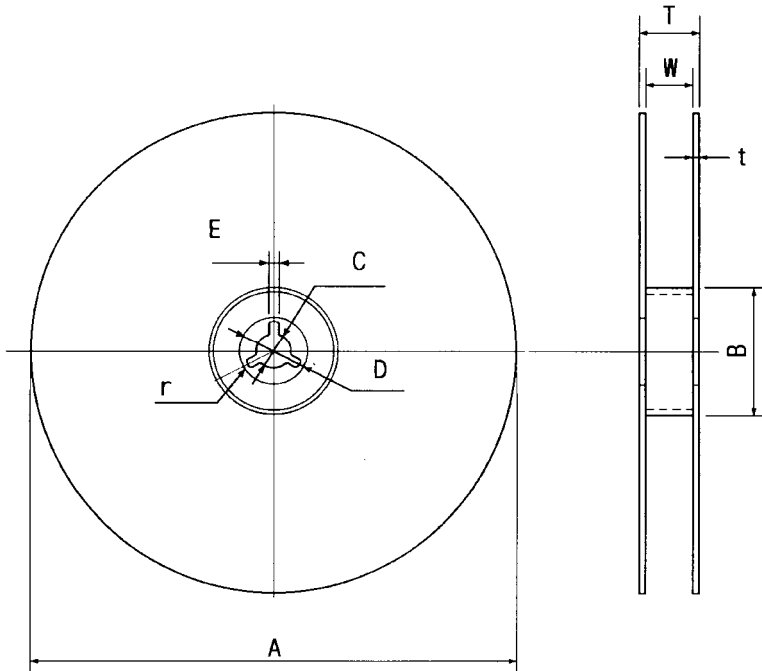


[Unit:mm]

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

[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. |