

规格书编号

SPEC NO: HDF1588EB5SP05

产品规格书

SPECIFICATION

CUSTOMER 客户: _____
PRODUCT 产品: _____ SAW FILTER
MODEL NO 型号: _____ HDF1588E-B5
MARKING 印字: _____ B049
PREPARED 编制: _____ CHECKED 审核: _____
APPROVED 批准: _____ D A T E 日期: _____ 2016-11-25

| | | |
|-------------------------|-------------|---------|
| 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

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Country of origin: China

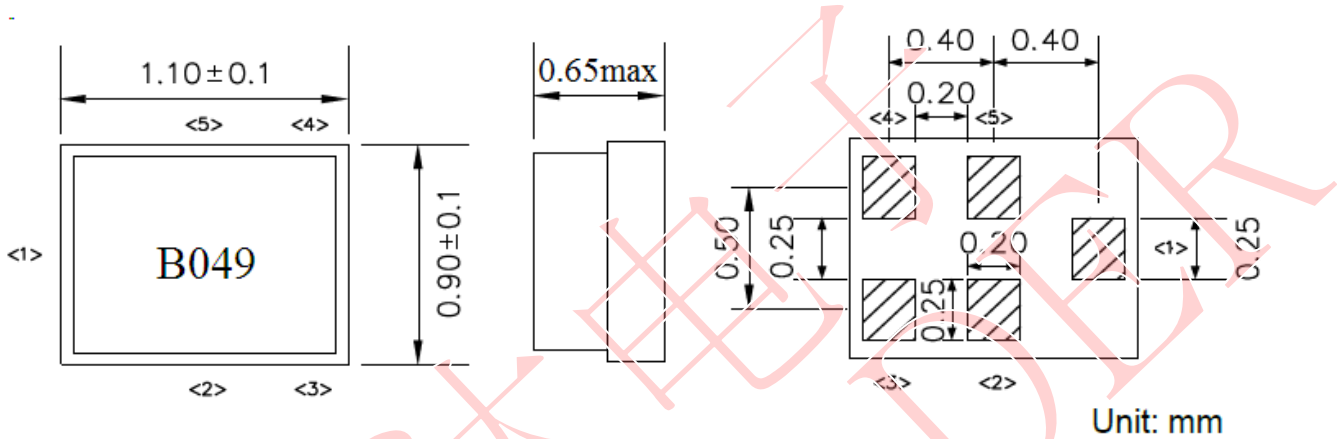
更改历史记录 History Record

| 更改日期 Date | 规格书编号 Spec. No. | 产品型号 Part No. | 客户产品型号 Customer No. | 更改内容描述 Modify Content | 备注 Remark |
|--------------|--------------------|------------------|------------------------|--|---|
| 2015-7-1 | SP00 | HDF1588E-B5 | | NEW SPEC. | |
| 2016-02-16 | SP01 | HDF1588E-B5 | | Add attenuation 2010 - 2025 MHz 2300 - 2400 MHz | |
| 2016-4-11 | SP02 | HDF1588E-B5 | | Complete specifications. Add product application, reliability and other information. | |
| 2016-8-23 | SP03 | HDF1588E-B5 | | Change carrier tape size. Carrier tape encryption. | 10. TAPE SPECIFICATIONS [Figure 1] Carrier Tape Dimensions |
| 2016-8-31 | SP04 | HDF1588E-B5 | | Insertion Loss in 1574.42~1576.42 MHz, from 1.5max to 1.2max. | 5. Electrical specifications |
| 2016-11-25 | SP05 | HDF1588E-B5 | | Correction device size. Thickness changed from 0.5max. to 0.65max | 2. Package Dimension |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

1. Application

- Low-loss RF GPS + COMPASS + GLONASS filter
- Usable passband: 2.0 MHz for GPS, 4.092 MHz for COMPASS and 8.34 MHz for GLONASS
- Impedance 50 ohm input and output
- Unbalanced to unbalanced operation
- RoHS compatible

2. Package Dimension (PKG SIZE 1.1 x 0.9mm)



Unit: mm

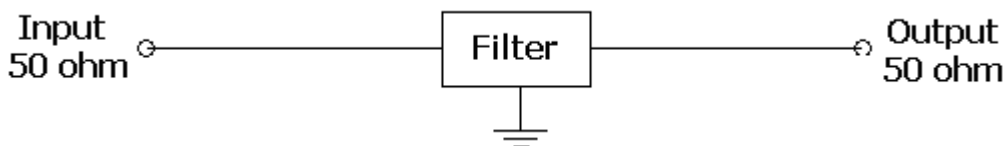
Pin configuration

- 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 | 15dBm 2000h |
| Moisture Sensitivity Level | MSL 2 |

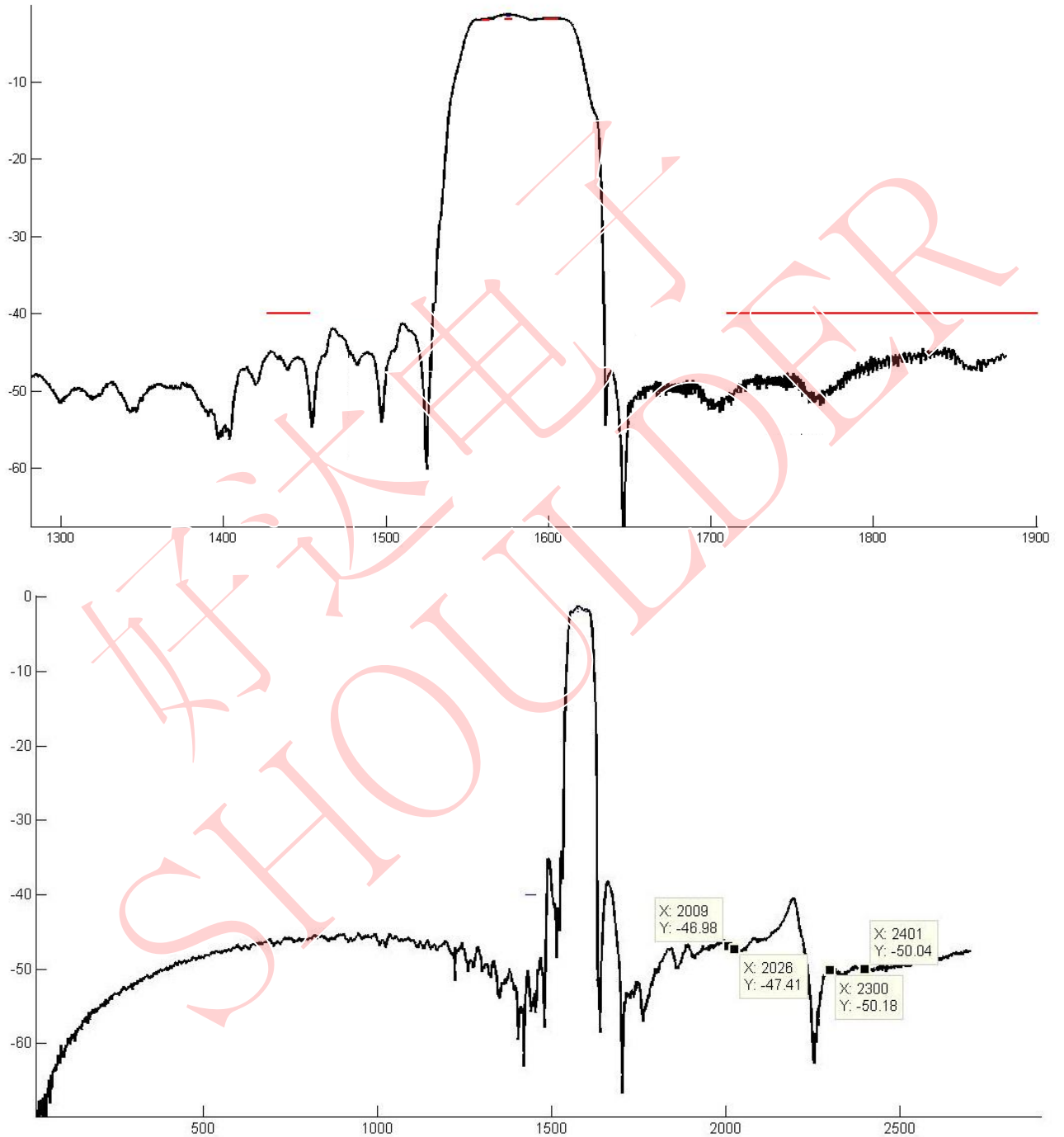
4. Test Circuit



5. ELECTRICAL SPECIFICATION

| | Unit | Minimum | Typical | Maximum |
|------------------------|------|---------|------------|------------|
| Center Frequency | MHz | - | 1582.4 | - |
| Insertion Loss | | | | |
| 1574.42~1576.42 MHz | | | 1.0 | 1.2 |
| 1559.05~1563.15 MHz | dB | | 1.8 | 2.0 |
| 1573.37~1577.47 MHz | | | 1.5 | 2.0 |
| 1597.78~1605.66 MHz | | | 1.8 | 2.0 |
| Pass band ripple | | | | |
| 1574.42~1576.42 MHz | | | 0.2 | 1.0 |
| 1559.05~1563.15 MHz | dB | | 0.3 | 1.0 |
| 1573.37~1577.47 MHz | | | 0.2 | 1.0 |
| 1597.78~1605.66 MHz | | | 0.4 | 1.0 |
| VSWR | | | | |
| 1574.42~1576.42 MHz | | | 1.2 | 2.0 |
| 1559.05~1563.15 MHz | dB | | 1.6 | 2.0 |
| 1573.37~1577.47 MHz | | | 1.4 | 2.0 |
| 1597.78~1605.66 MHz | | | 1.6 | 2.0 |
| Group delay ripple | | | | |
| 1597.78~1605.66 MHz | ns | | 4 | 12 |
| Attenuation | | | | |
| 10~824 MHz | | 47 | 51 | |
| 824~925 MHz | | 47 | 51 | |
| 1427~1453 MHz | | 40 | 45 | |
| 1710~1785 MHz | | 40 | 45 | |
| 1850~1910 MHz | | 40 | 44 | |
| 1920~1980 MHz | dB | 39 | 44 | - |
| 2010~2025 MHz | | 43 | 47 | |
| 2300~2400 MHz | | 46 | 50 | |
| 2400~2500 MHz | | 43 | 45 | |
| 2500~2570 MHz | | 37 | 42 | |
| 2600~3000 MHz | | 30 | 38 | |
| 4900~5850 MHz | | 15 | 24 | |
| Input/Output Impedance | Ohms | | 50 | |

6. Frequency Characteristics



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.

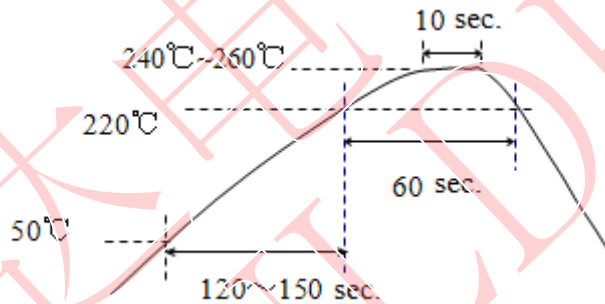
7.4 Resistance to solder heat

- 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 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

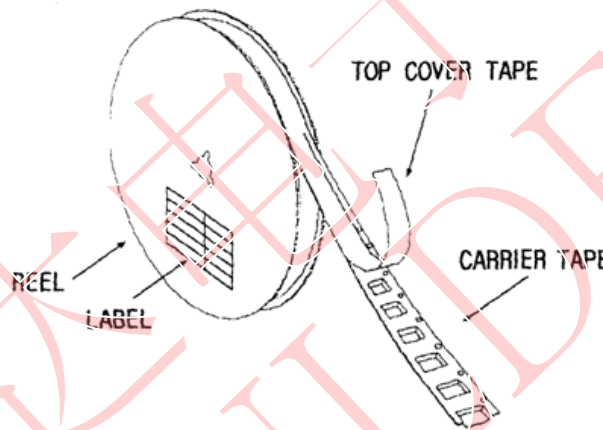
- (1) Carrier Tape: Figure 1
- (2) Reel: Figure 2
- (3) The product shall be packed properly not to be damaged during transportation and storage.

9.2 Reeling Quantity

10000 pcs/reel ϕ 178mm

9.3 Taping Structure

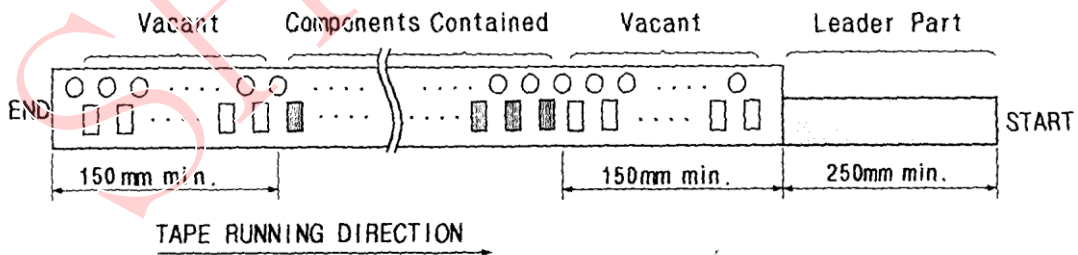
- (1) The tape shall be wound around the reel in the direction shown below.



(2) Label

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

(3) Leader part and vacant position specifications.

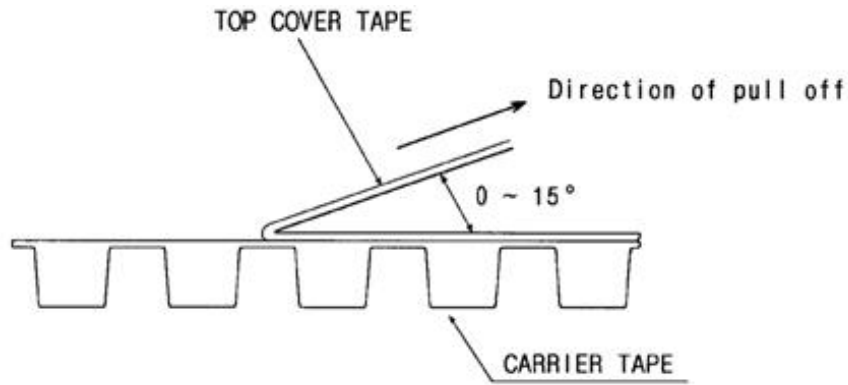


10. TAPE SPECIFICATIONS

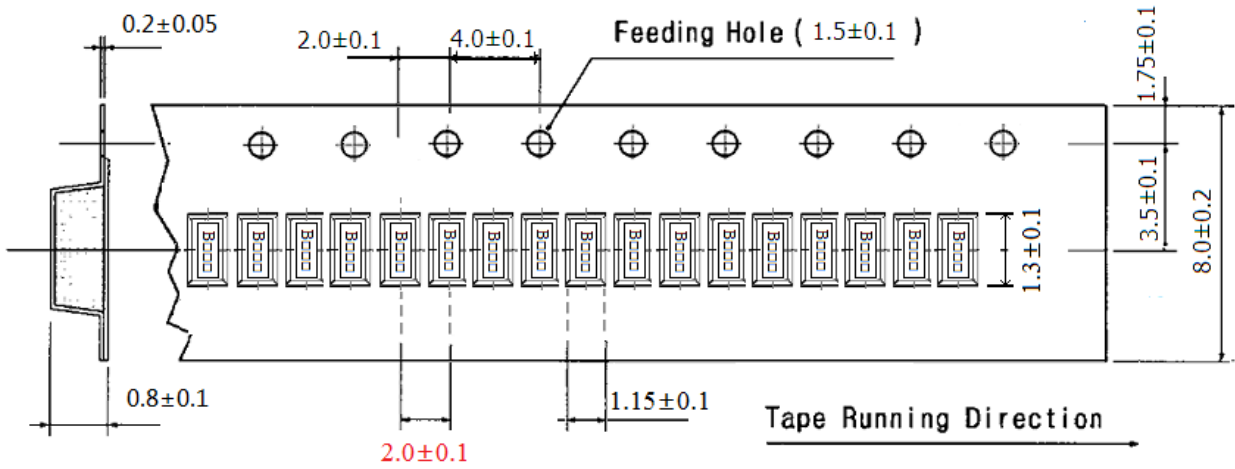
10.1 Tensile Strength of Carrier Tape: 4.4N/mm width

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

