

# TBF-1608-245-R1N THIN FILM BAND PASS FILTER

## 1. Feature

- 1-1 Thin Film Band Pass Filter
- 1-2 WLAN Band Application.
- 1-3 Ultra Low Profile
- 1-4 Lead Free, RoHS compliance

## 2. Part Number

TBF — 1608 — 245 — R1N  
 (1) (2) (3) (4)

- Where
- (1) TBF : Thin Film Band Pass Filter
  - (2) Size :  
4 digits of number —1608 = 1.6×0.8 mm
  - (3) Center Frequency :  
245 = 2.45 GHz
  - (4) Type  
Refer to Table 3-1

## 3. Ratings

### 3-1 Specifications

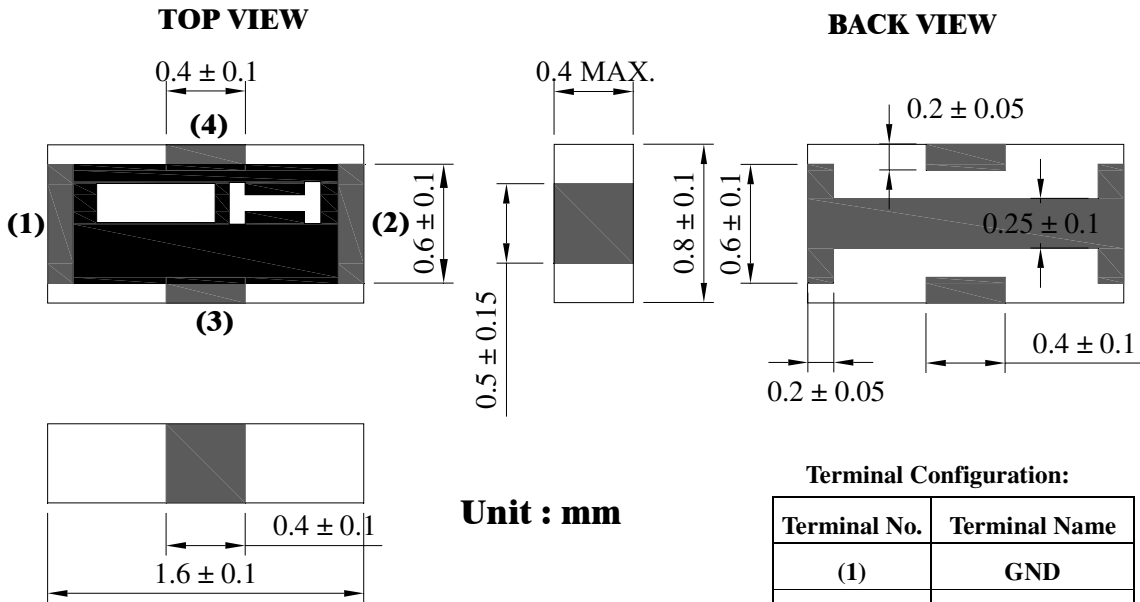
Part Number	TBF-1608-245-R1N
Nominal Characteristics Impedance	50 Ω
Nominal Center Frequency	2450MHz
Bandwidth	2400~2500MHz
Insertion Loss	1.7dB Max. at +25°C 1.9dB max. at -40 ~ +85°C
Ripple in BW	0.5dB max.
Attenuation	20.0dB min. at 1710 ~ 1910MHz 30.0dB min. at 4800 ~ 5000MHz 30.0dB min. at 7200 ~ 7500MHz
VSWR in BW	2.0 Max.
Power Capacity	500mW Max.

3-2 Operation Temperature: -40°C to +85°C

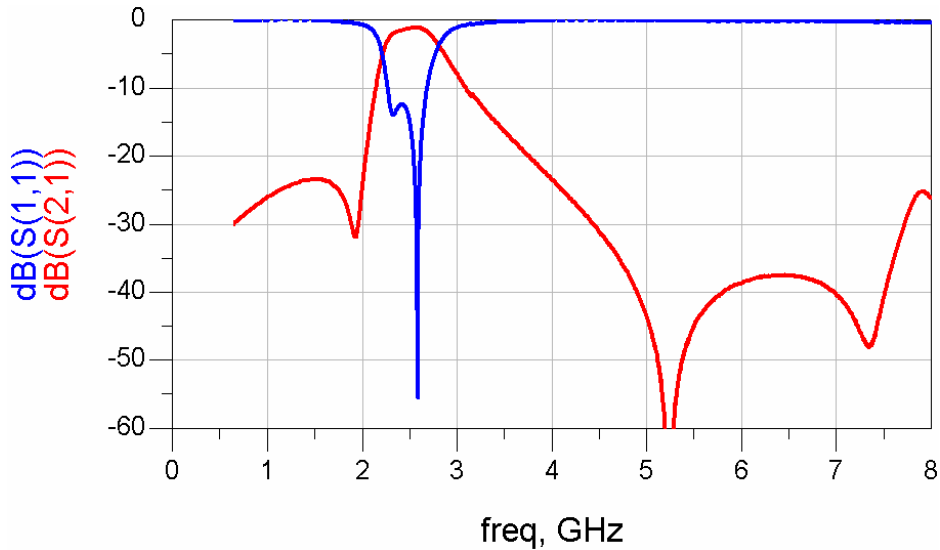
3-3 Storage Temperature: +15°C to +35°C

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#### 4. Outline Dimension



#### 5. Electrical Performance



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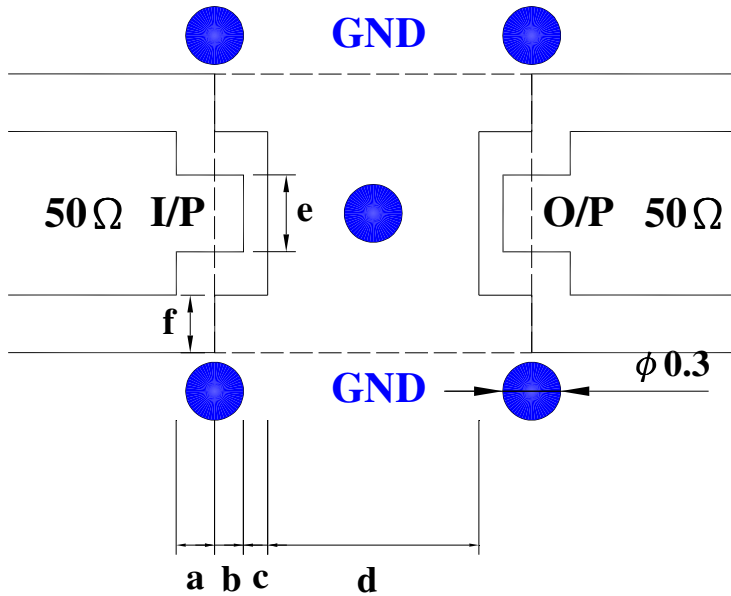
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6. Recommended Land Pattern



a	0.20
b	0.13
c	0.12
d	0.30
e	0.40

Unit : mm

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7. Reliability Test

7-1 Electrical

ITEM	Specification and Requirement	Test Method
Temperature Characteristics	Satisfy electrical characteristics	Solder the sample on PCB. Exposure at each temperature, -40°C, -20°C, 0°C, +25°C, +50°C, +85°C for 30minutes

7-2 Mechanical

ITEM	Specification and Requirement	Test Method
Solderability	The Surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder bath : After immersing in flux, dip in 245 ± 5°C molten solder bath for 2 ± 0.5 seconds
Resistance to solder Heat	Satisfy electrical characteristics without distinct deformation in appearance	(1) Pre-heat : 100 ~ 110°C for 30 seconds (2) Immersed at solder bath of 270 ± 5 °C for 20 ± 1 seconds
Vibration	Satisfy electrical characteristics without Mechanical damage such as break	Vibrate as apply 20 to 2,000Hz, 186m/s <sup>2</sup> (19G) acceleration 1.5mm amplitude for 2 hours in each of three (X, Y, Z) axis (total 6 hours).
Shock	Satisfy electrical characteristics without mechanical damaged such as break	(1) Break value : 490 N (2) Duration of pulse : 11ms (3) 3 times in each positive and negative direction of 3 mutual perpendicular directions.
Bending Test	Satisfy electrical characteristics without mechanical damage such as break	Bending value : 3mm for 30 ± 1 seconds
Solvent Resistant	Marking should be legible without mechanical and distinct damage in appearance	(1) Solvent : Trichloroethane or Isopropyl alcohol. (2) Immersed in solvent at room temperature for 90 seconds
Drop Test	Satisfy electrical characteristics without mechanical damage	Drop the sample from a height of 1m to concrete ground for 10 times

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7-3 Load Life

ITEM	Specification and Requirement	Test Method
Rapid change of temperature	Satisfy Electrical Characteristics. Without distinct damage.	Perform 5 cycles as follows : -55°C for 30minutes → room temperature for 3 minutes→ +125°C for 30minutes → room temperature for 3 minutes. (Dwell time : 5 to 8 minutes)
Humidity Resistance Test	Satisfy Electrical Characteristics. Without distinct damage.	Precondition at +25°C for 1 hour. Let stand at temperature +40 ± 3°C, 90~95% relative humidity for 1,000 hours before taking final measurements.
Low Temperature Store	Satisfy Electrical Characteristics. Without distinct damage.	Solder the sample on PCB. Exposure at -55 ± 3°C for 1,000 hours. 1~2 hours exposure at room temperature and humidity, prior to measurement.
High Temperature Store	Satisfy Electrical Characteristics. Without distinct damage.	Solder the sample on PCB. Exposure at +85 ± 3°C for 1,000 hours. 1~2 hours exposure at room temperature and humidity, prior to measurement.

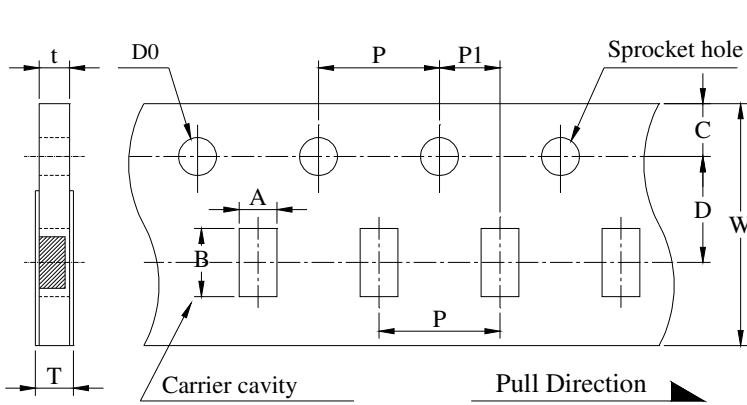
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8. Packaging

8-1 Material : Paper Carrier Tape

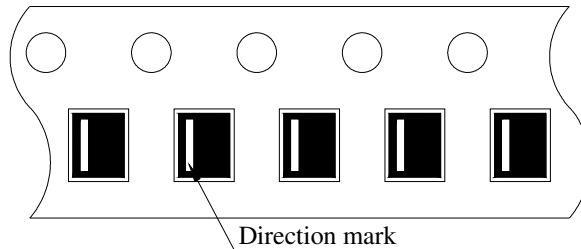
8-2 Dimensions

8-2-1 Tape packaging dimensions



Code	Dimensions (mm)
A	1.10 ±0.10
B	1.90 ±0.10
C	1.75 ±0.1
D	3.5 ±0.05
W	8.0 ±0.3
P	4.0 ±0.1
P1	2.0 ±0.05
T	0.65 ±0.10
t	0.6 ±0.10
D0	φ 1.5 <sup>+0.1</sup> <sub>-0.0</sub>

8-2-2 Setting Direction



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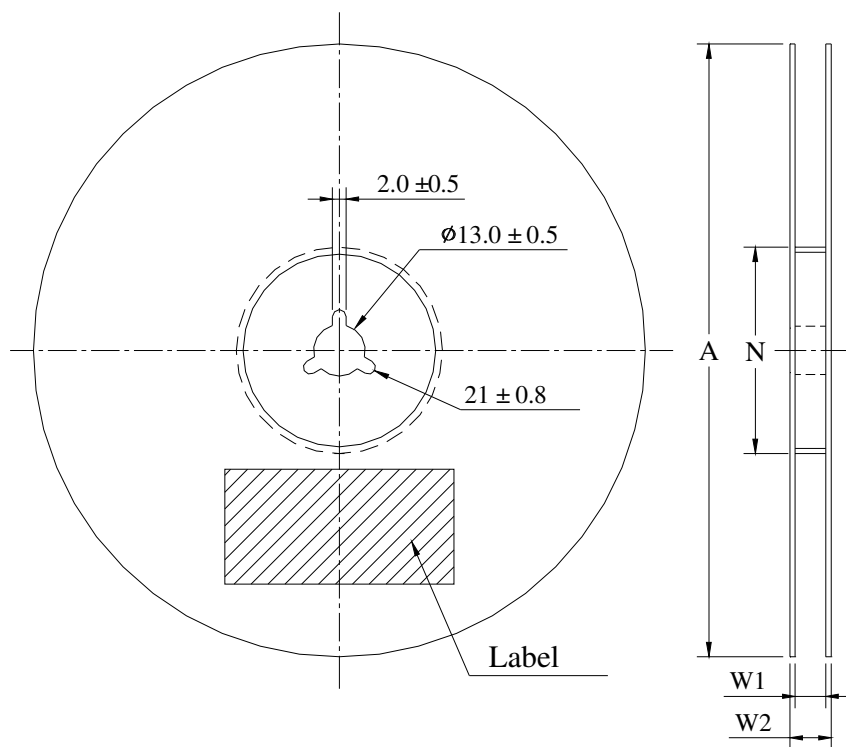
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8-2-3 Reel dimensions( Material : Polystyrene )



A	$\phi 178 \pm 2$
N	$\phi 60 \pm 2$
W1	$9.0 \pm 0.3$
W2	$11.4 \pm 1.0$

Unit : mm

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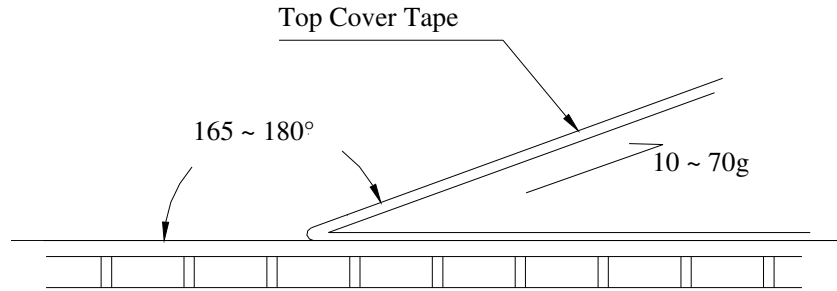
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8-3 Peel force of top cover tape

The peel speed shall be about 300 mm/minute

The peel force of top cover tape shall be between 10 to 70g



8-4 Numbers of taping

4,000 pieces/reel

8-5 Label marking

The following items shall be marked on the production and shipping Label on the reel.

8-5-1 Production Label

- (1) Part No.
- (2) Description
- (3) Quantity
- (4) Taping No.

8-5-2 Shipping Label

- (1) \*Customer's name
- (2) \*Customer's part No.
- (3) Manufacturer's part No.
- (4) Manufacturer's name
- (5) Manufacturer's country

\*Note : Item (1) and (2) are listed by request

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