

TBF-2520-190-B SERIES THIN FILM BAND PASS FILTER

1. Feature:

1. 1.90GHz Thin Film Band Pass Filter
2. Lead Free

2. Part Number

TBF 2520 – 190 –B2 – XX
 (1) (2) (3) (4) (5)

- Where
- (1) TBF : Thin Film Band Pass Filter
 - (2) Size :
4 digits of number —2520 = 2.50×2.00 mm
 - (3) Center Frequency :
190 = 1.906 GHz
 - (4) Type
Refer to Table 3-1
 - (5) XX
Internal Code

3. Ratings

3-1 Specifications

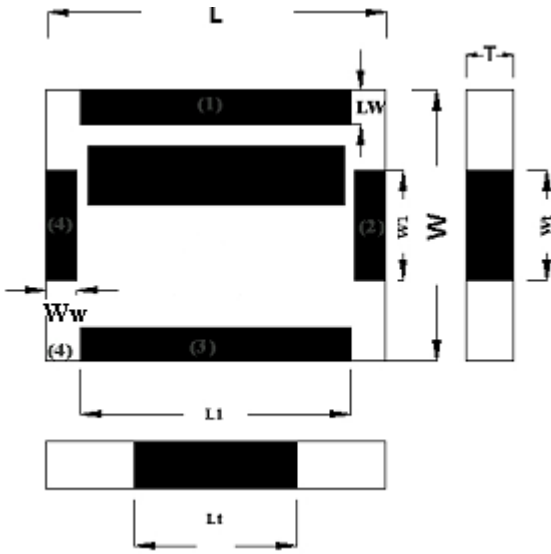
Part Number	TBF-2520-190-B2
Nominal Characteristics Impedance	50 Ω
Nominal Center Frequency	1906MHz
Bandwidth	1893 ~ 1920MHz
Insertion Loss	1.2 dB Max. at +25 deg. C 1.5 dB max. at -40 ~ +85 deg. C
Ripple in BW	0.5dB max.
Attenuation	35.0dB min. at 1420 MHz 15.0dB min. at 1660 MHz 3.0dB min. at 1798 MHz 6.0dB min. at 2126 MHz 25.0dB min. at 3814 MHz 25.0dB min. at 5721 MHz
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



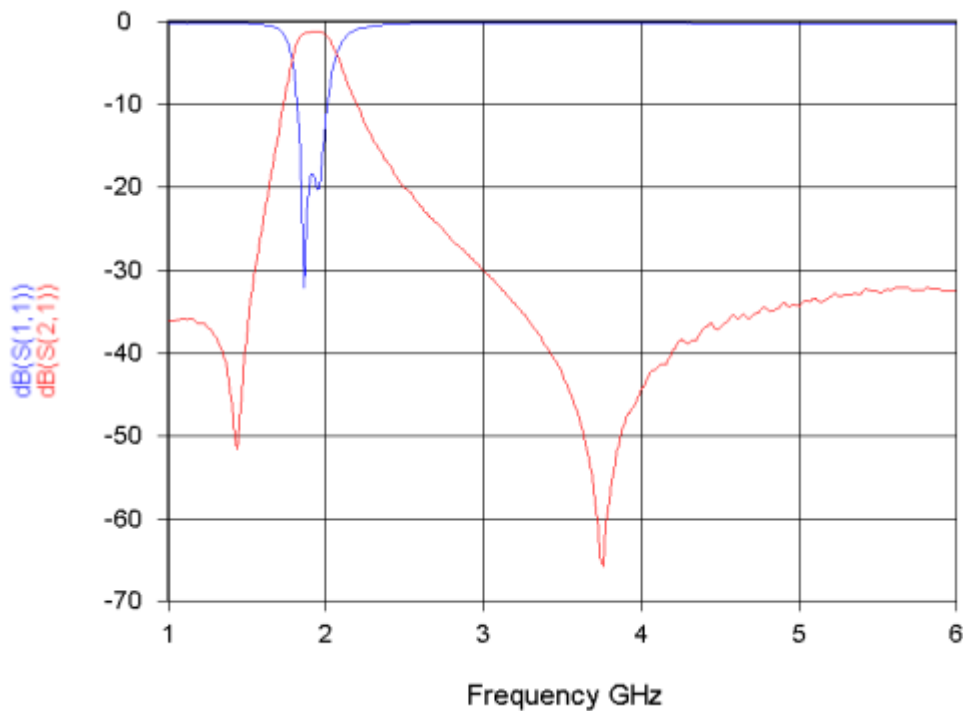
Code	Dimension	Code	Dimension
L	2.5 ± 0.2	L1	2.0 ± 0.1
W	2.0 ± 0.2	Lt	1.2 ± 0.1
T	0.5 ± 0.1	Lw	0.2 ± 0.1
		W1	0.8 ± 0.1
		Wt	0.4 ± 0.1
		Ww	0.2 ± 0.1

Unit : mm

Terminal Configuration:

Terminal No.	Terminal Name
(1)	GND
(2)	Output
(3)	GND
(4)	Input

5. Electrical Performance



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X.X = \pm
X.XX = \pm
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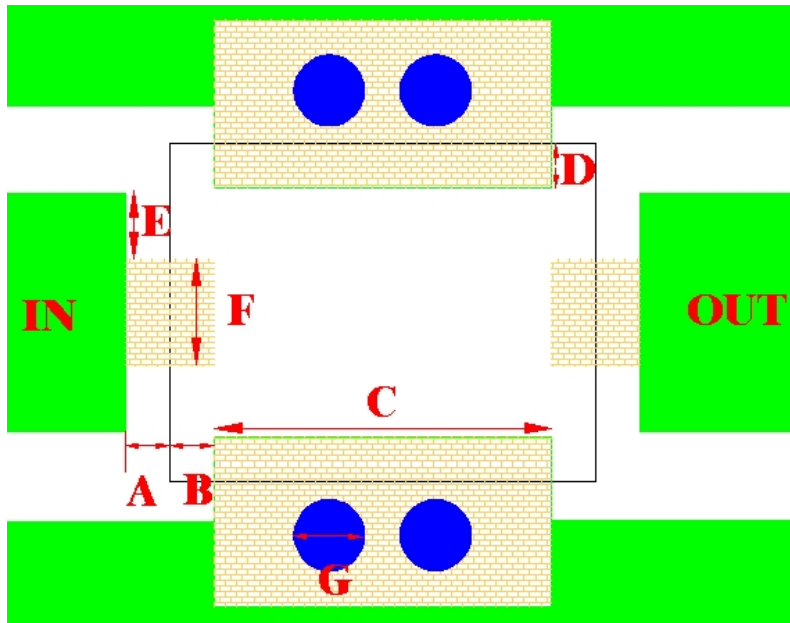
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6. Recommended Land Pattern



A	0.25
B	0.25
C	2
D	0.25
E	0.37
F	0.6
G	0.2
Unit : mm	

- Land Pattern
- Solder Resist
- Chip Area
- PCB VIA

- Line Width be designed to match 50ohm characteristic impedance, depending on PCB material and thickness
- Notes : All the technical data and information contained herein are subject to change without prior notice

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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	A. Pre-heat : 100 ~ 110 °C for 30 seconds B. 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^2 (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	Solder the sample on PCB. 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 1hour. 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.
Load Life	Satisfy Electrical Characteristics. Without distinct damage.	Apply 16 Volt voltage at 70±2°C ambient

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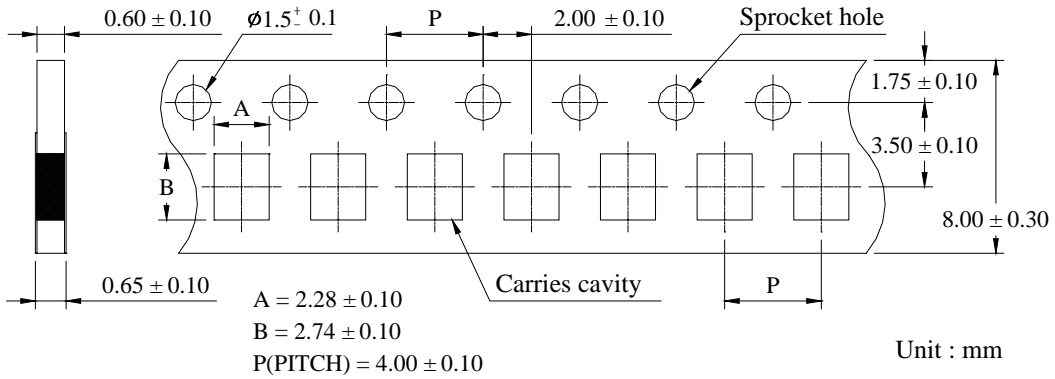
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8. Packaging

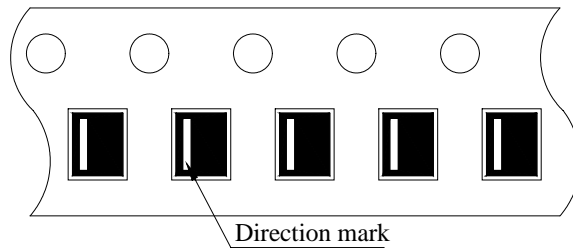
8-1 Material : Paper Carrier Tape

8-2 Dimensions

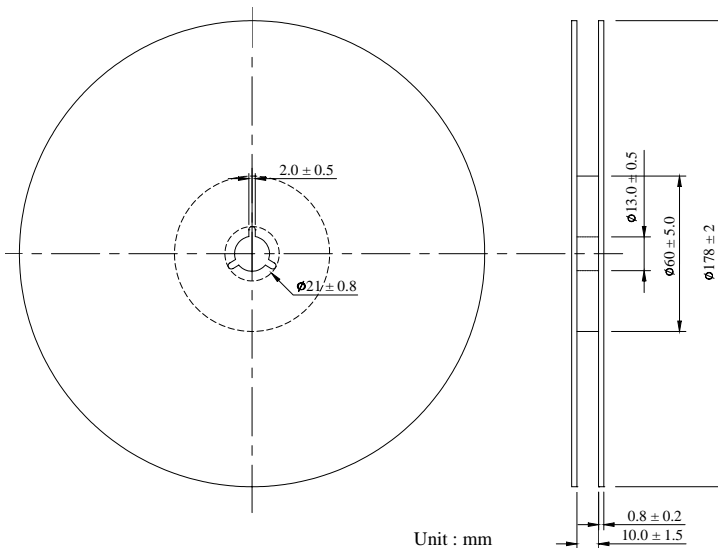
8-2-1 Tape packaging dimensions



8-2-2 Setting Direction



8-2-3 Reel dimensions



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X.XX = ±
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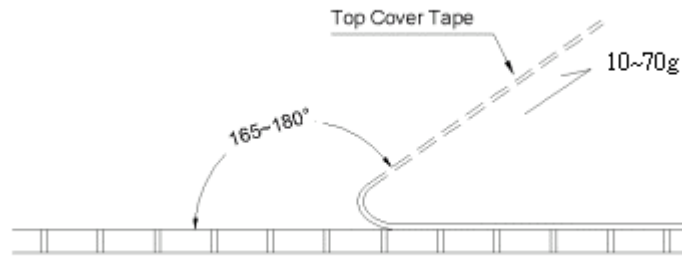
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8-3 Peel force of top cover tape

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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