

# SPECIFICATION

## COMMERCIALLY AVAILABLE

CERAMIC MONOBLOCK  
PART NUMBER: CFM-47006003  
RoHS

| ISSUED /<br>REVISION    | ENGINEER<br>APPROVED | DOCUMENT<br>CHECKED | DRAFTSMAN     | DOCUMENT<br>CHECKED |
|-------------------------|----------------------|---------------------|---------------|---------------------|
| 10/7/11 kn              | 11/21/2011 TFG       |                     | 11/21/2011 GL |                     |
| 5/31/13 <sup>(KN)</sup> |                      |                     |               |                     |
|                         |                      |                     |               |                     |

***FILTRONETICS Inc***

# 1. APPLICATION

THIS SPECIFICATION APPLIES TO A BAND PASS FILTER, USING DIELECTRIC RESONATORS.

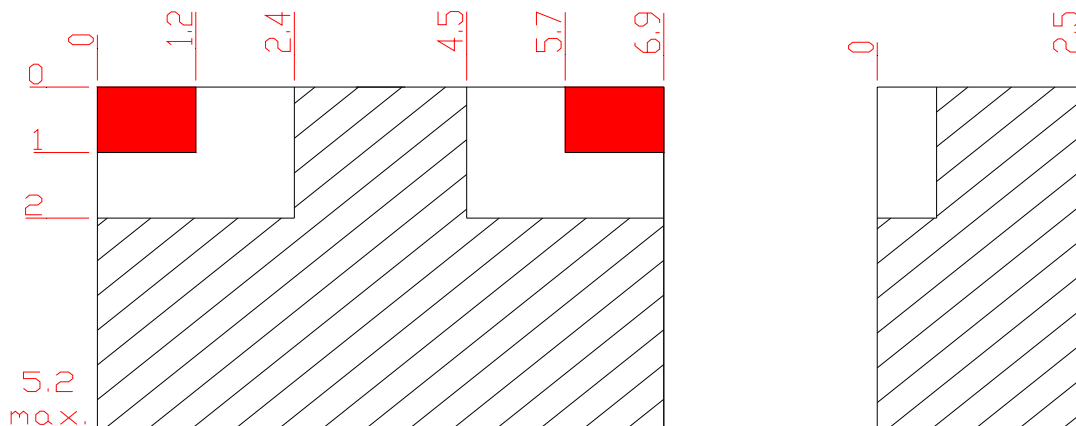
# 2. PART NUMBER: CFM-47006003

# 3. SPECIFICATIONS:

| No. | Parameter             | Unit               | Specification       |
|-----|-----------------------|--------------------|---------------------|
| 1   | Center Frequency      | MHz                | 4700                |
| 2   | Bandwidth             | MHz                | 4400 ~ 5000         |
| 3   | Insertion Loss in BW  | dB                 | 2.0 max.            |
| 4   | Ripple in BW          | dB                 | 1.0 max.            |
| 5   | VSWR in BW            | dB                 | 1.8 : 1 max. .      |
| 6   | Attenuation           | dB                 | 60 min. @ 1,000 MHz |
|     |                       |                    | 55 min. @ 2,000 MHz |
|     |                       |                    | 30 min. @ 3,000 MHz |
|     |                       |                    | 10 min. @ 4,000 MHz |
|     |                       |                    | 10 min. @ 6,000 MHz |
|     |                       |                    | 18 min. @ 7,000 MHz |
| 7   | Input Power           | W                  | 1 W max. (+30 dBm)  |
| 8   | IN/OUT Impedance      | $\Omega$           | 50                  |
| 9   | Operating Temperature | $^{\circ}\text{C}$ | -40 ~ +85           |

Marking:  
CFM-47006003

# 4. DIMENSIONS: (Unit: mm)

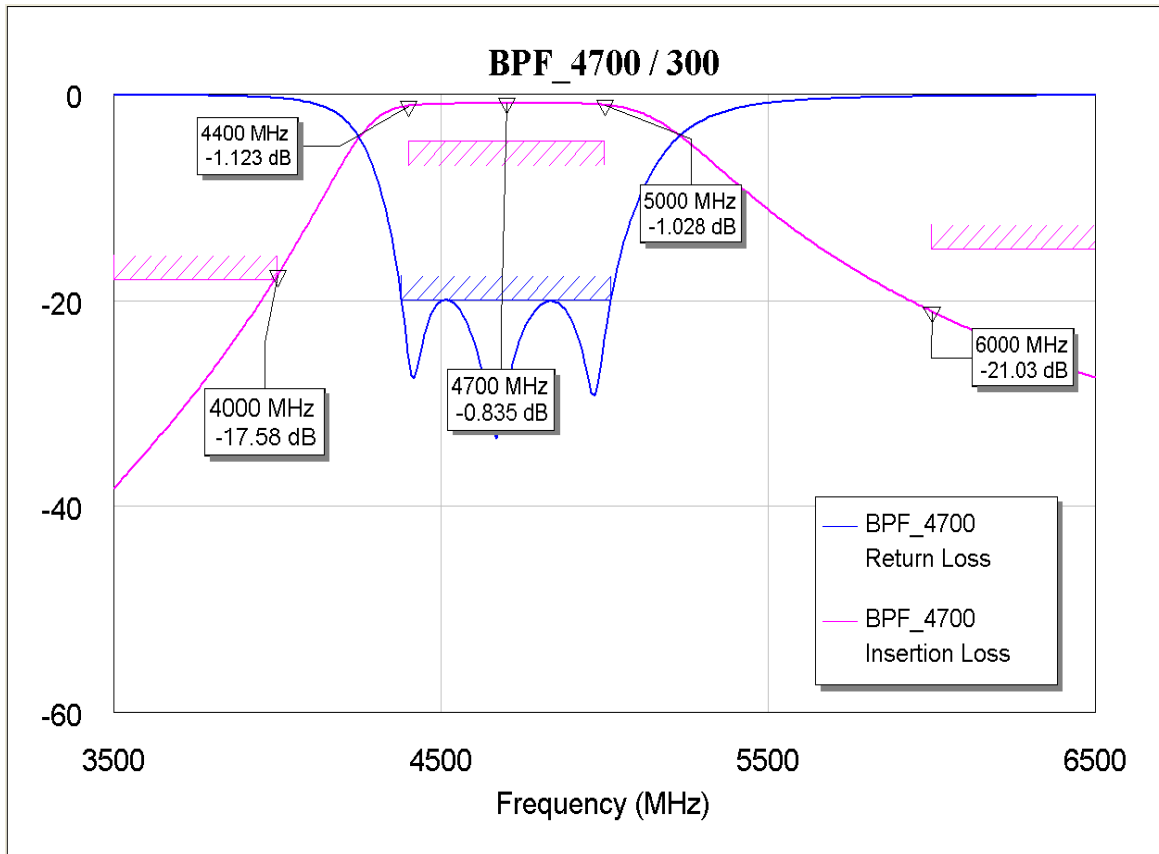


I/O Port  
 Ground

Unit : mm

Tolerance unless  
otherwise specified :  $\pm 0.2$

5. SIMULATION:



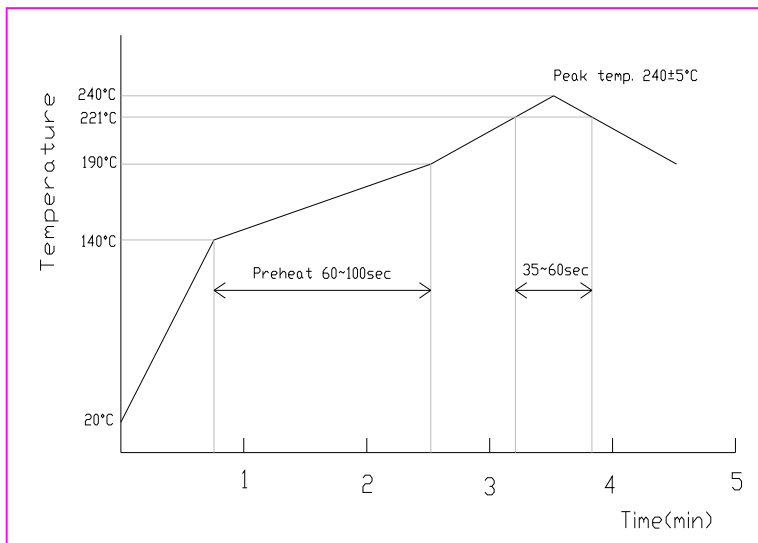
6. DEFINITIONS:

| TERMS                | DESCRIPTION                                                                                                                                                      | SPECIFICATION    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Center Frequency     | The midpoint of through band pass filter pass band, normally expressed as the arithmetic mean of the -3db point. Also called $f_0$ .                             | 3. SPECIFICATION |
| Pass Band Width      | The width of the pass band of a filter referenced to the minimum insertion loss point in the pass band. The pass band of a filter is stated as -1.0dB bandwidth. |                  |
| Insertion Loss       | The loss of the filter, in db, measured at center frequency relative to a through line (0 dB).                                                                   |                  |
| Attenuation          | Reduction of RF power through a filter measured in dB, at desired band and referenced to 0 dB. (Filter to be removed from circuit)                               |                  |
| Pass Band Ripple     | Variations in loss in the pass band of the filter, superimposed upon the fundamental shape of the pass band.                                                     |                  |
| V.S.W.R in Pass Band | The ratio of the maximum value of a standing wave to its minimum value, related to the return loss in pass band.                                                 |                  |

## 7. RELIABILITY TEST AND CONDITIONS:

| ITEM                                    | TEST CONDITIONS                                                                                                                                                                                  | REQUIREMENTS                                                                               |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Resistance to solder heat               | Preheat temperature : 120 to 150°C<br>Preheat time: 1 to 1.5 min<br>Solder temperature: 260 +/- 10°C<br>Dipping time: 10 +/- 0.5 sec                                                             | No damage such as cracks should be caused in chip element.                                 |
| Solderability                           | Preheat temperature: 120 to 150°C<br>Preheat time: 1 to 1.5 min<br>Solder temperature: 235 +/- 5°C<br>Dipping time: 5 +/- 1 sec                                                                  | More than 80% of the terminal electrode shall be covered with new solder                   |
| Heat resistance (High-temperature Load) | Temperature: 85 +/- 2°C<br>Applied voltage: Rated voltage<br>Applied current: Rated current<br>Recovery: 1 to 2hrs of recovery under the standard condition after the removal from test chamber. | No mechanical damage. After test, the device shall satisfy the specification in section 3. |
| Thermal shock (Temperature cycle)       | Conditions for 1 cycle<br>Step 1: + 85°C 15 min<br>Step 2 : - 30°C 15 min<br>Number of cycle: 10                                                                                                 | No mechanical damage. After test, the device shall satisfy the specification in section 3. |
| Humidity Resistance                     | Temperature: 40 +/- 2°C<br>Humidity: 90 to 95% RH<br>Duration: 96 +/- 5 hrs<br>Recovery: 1 to 2hrs of recovery under the standard condition after the removal from test chamber.                 | No mechanical damage. After test, the device shall satisfy the specification in section 3. |
| Vibration                               | Frequency: 10 ~ 50 Hz<br>Amplitude: 1.52mm ( 0.060 inches)<br>Direction: X, Y and Z<br>Time: each 30 min for all directions                                                                      | No mechanical damage. After test, the device shall satisfy the specification in section 3. |

## 8. REFLOW SOLDERING STANDARD CONDITIONS FOR RoHS



- Measuring point of temperature in-out terminals of the device.
- Reflow Soldering
- Both convection and infrared rays
- Hot air
- Hot plates
- Solder Cream: Sn96.5/Ag3.5