

SPECIFICATION FOR APPROVAL

COMMERCIALLY AVAILABLE

**ITEM: DIELECTRIC CERAMIC FILTER
PART NUMBER: CF-14000705**

| ISSUED | CHECKED | CHECKED | CHECKED | APPROVED |
|--------|---------|---------|---------|----------|
| | | | | |

FILTRONETICS Inc

1. APPLICATION

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

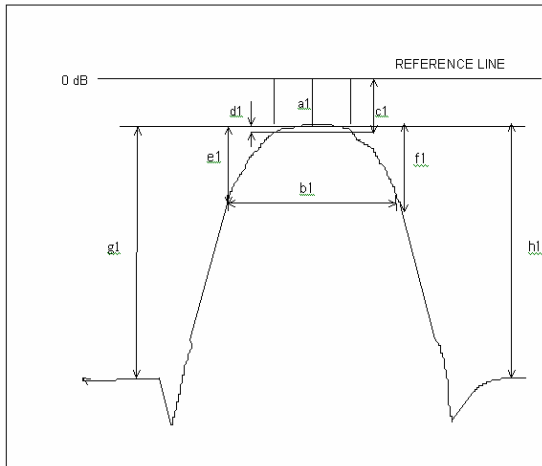
2. PART NUMBER

| | |
|---------|-------------|
| PART NO | CF-14000705 |
|---------|-------------|

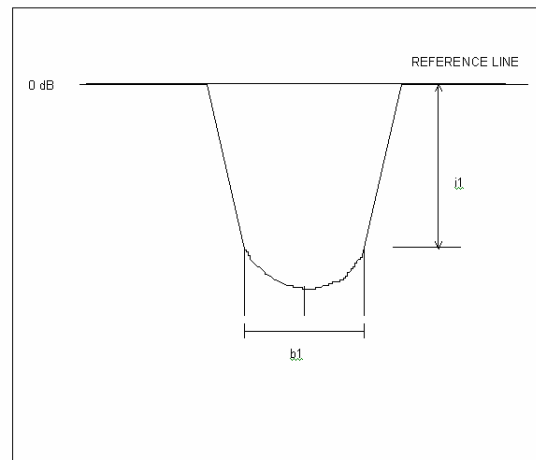
3. SPECIFICATIONS

| NO | ITEMS | Ref. | SPECIFICATION |
|----|----------------------------------|--------------------|-------------------|
| 1 | Center Frequency (Fo) | a1 | 1400 MHz |
| 2 | 3dB Band Width | b1 | Fo +/- 35 MHz MIN |
| 3 | Insertion Loss AT Fo+/-35MHz | c1 | 2.5 dB Max |
| 4 | Ripple(p-p) AT Fo+/-35MHz | | 0.5dB Max |
| 5 | Attenuation | AT 1300 & 1500 MHz | 25dB Min |
| | | AT 1200 & 1600 MHz | 45dB Min |
| | | AT 1000 & 1800 MHz | 60dB Min |
| 7 | Group Delay Time Variation IN PB | | 10 nsec Max |
| 8 | Impedance | | 50Ω |
| 9 | Maximum Input Power | | 1 W (+30dBm) |
| | Operating Temperature Range | | -35 - +75°C |

S21 LOG MAG NETWORK ANALYZER

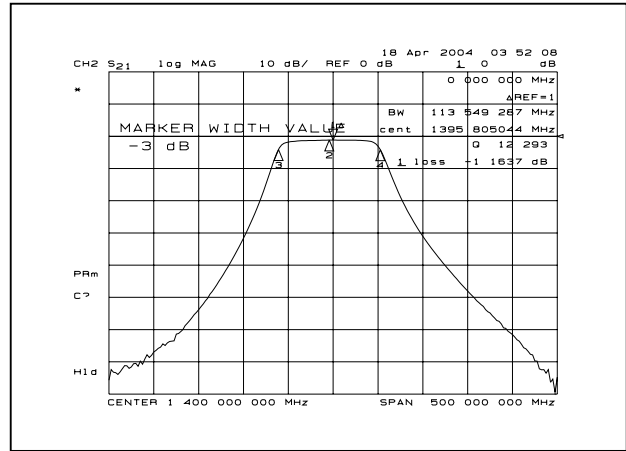
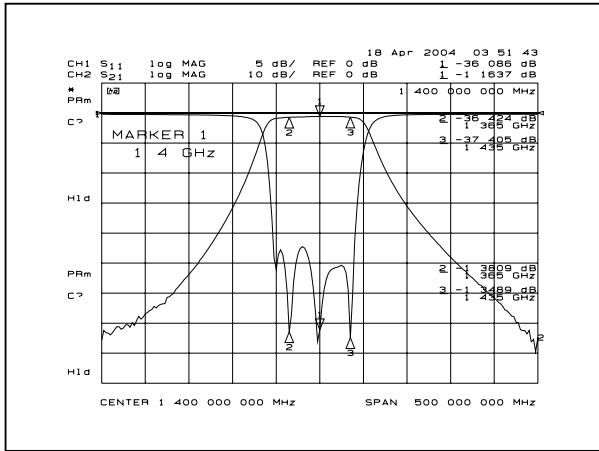


S11 SWR NETWORK ANALYZER

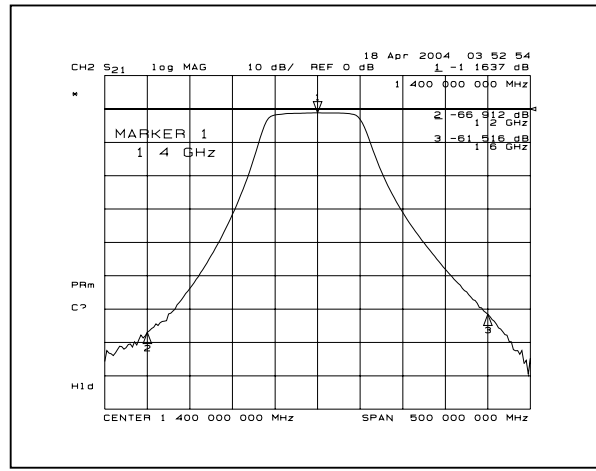
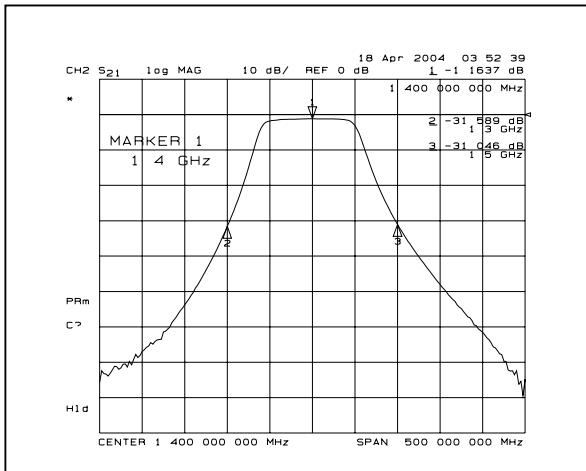


4. GRAPHS:

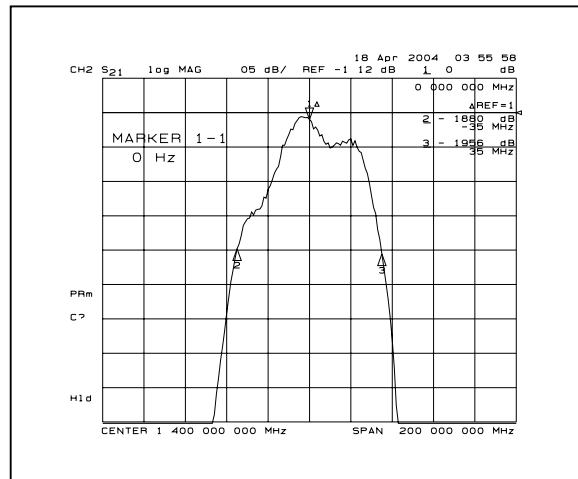
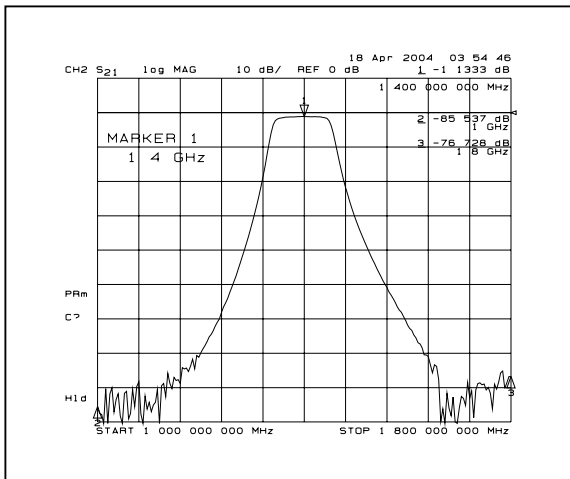
S21 & S11 (INSERTION LOSS, RETURN LOSS, 3DB BAND WIDTH)



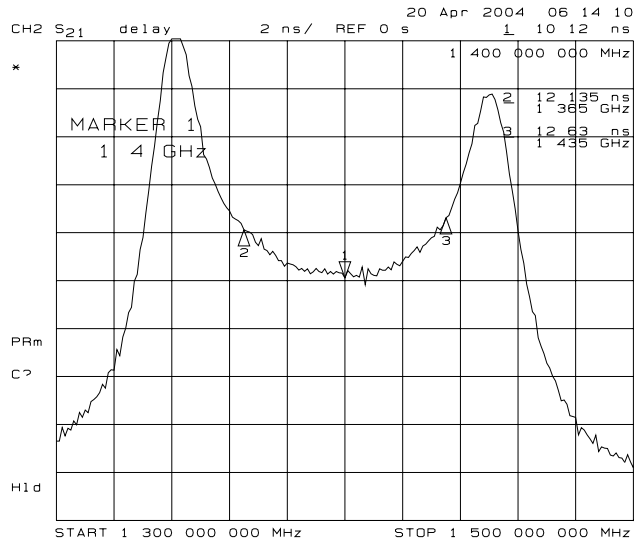
S21 (ATTENUATION)



S21 (ATTENUATION, RIPPLE)



S21 (Pass Band Group Delay)

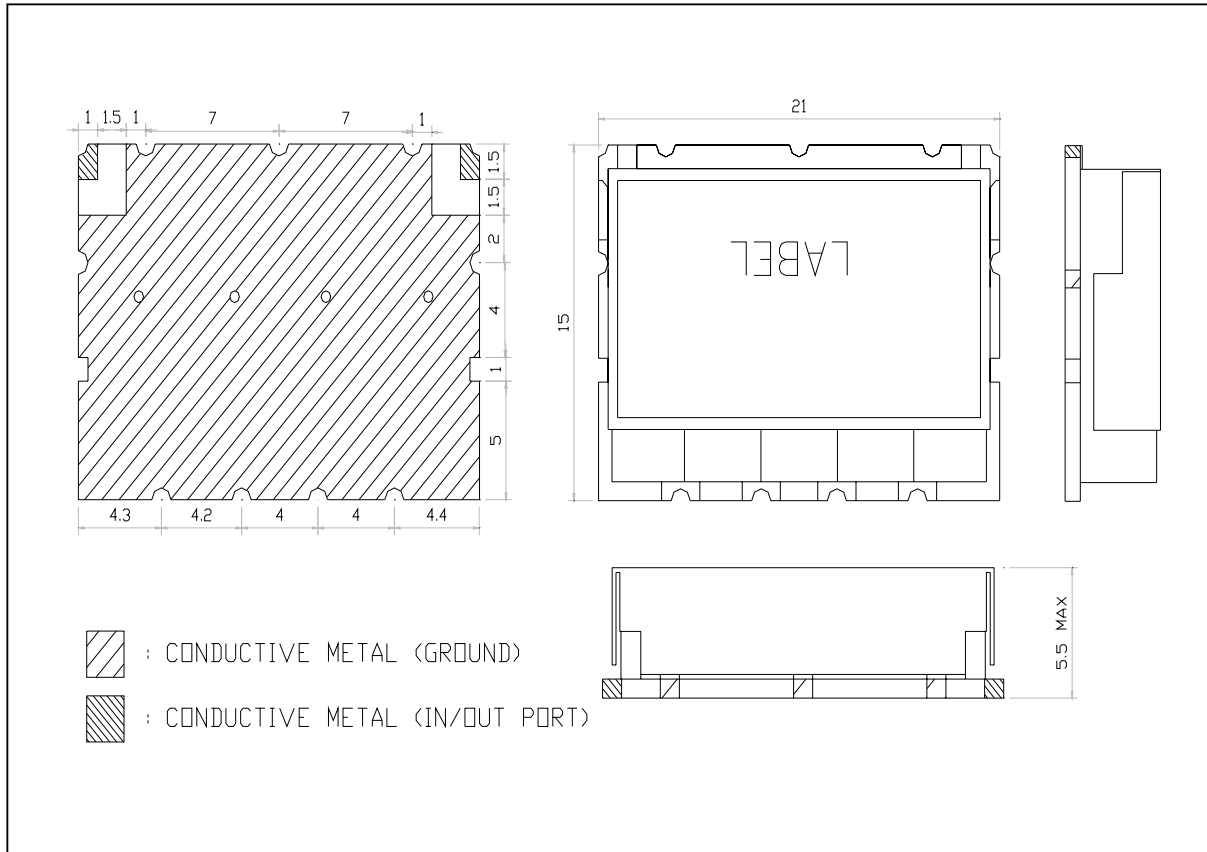


5. DEFINITIONS

| 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 fo. | 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 powder 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. | |

6. DIMENSIONS

IN/OUT LAND
TOLERANCE: +/-0.3MM



- ※ MATERIAL SPECIFICATION
1. PCB
 - 1) MATERIAL: FR4
 - 2) TERMINALS: Au PLATED
 2. METAL CASE
 - 1) MATERIAL: Sn OR Ni PLATED
 3. RESONATOR
 - 1) COATING MATERIAL: Ag
 - 2) DIMENSION: 4MM x 4MM

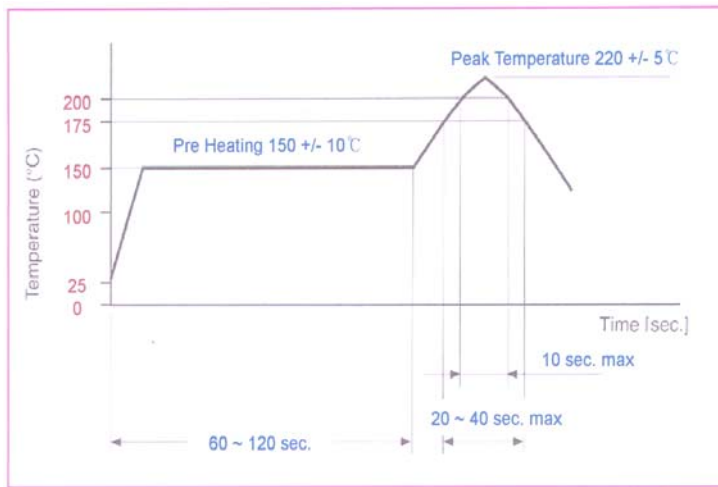
※ MARKING
Part Number: **CF-14000705**
Filtronetics

- CAUTIONS:
1. When handling products, be careful not to damage the outer-electrode.
 2. When handling products be careful not to touch the outer-electrode with bare hands or solderability is reduced.
 3. Do not apply excessive pressure or shock to product in handling or in transportation or damage to the ceramic filters may result.

7. RELIABILITY TEST AND CONDITIONS

| ITEM | TEST CONDITIONS | REQUIREMENTS |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Operating Temp. Range | - 45°C ~ + 85°C | - 40°C ~ + 70°C |
| Resistance to solder heat | Preheat temperature : 120 to 150°C Preheat time: 1 to 1.5 min Solder temperature: 260 +/- 10°C Dipping time: 10 +/- 0.5 sec | No damage such as cracks should be caused in chip element. |
| Solderability | Preheat temperature: 120 to 150°C Preheat time: 1 to 1.5 min Solder temperature: 235 +/- 5°C 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 Applied voltage: Rated voltage Applied current: Rated current 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 Step 1: + 85°C 15 min Step 2 : - 30°C 15 min Number of cycle: 10 | No mechanical damage. After test, the device shall satisfy the specification in section 3. |
| Humidity Resistance | Temperature: 40 +/- 2°C Humidity: 90 to 95% RH Duration: 96 +/- 5 hrs 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 Amplitude: 1.52 mm (0.060 inches) Direction: X, Y and Z 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



- Measuring point of temperature in-out terminals of the device.
- Reflow Soldering
- Both convection and infrared rays
- Hot air
- Hot plates
- Solder Cream: Sn64/Pb36