SPECIFICATION

ITEM: DIELECTRIC CERAMIC FILTER
PART NUMBER: CF-19100328

4/14/06 Added recommended PCB layout and plots.
6/2/06 Added Tape and Reel Information
11/7/06 added ROHS
2/15/08 Revised document (laser marking and add Atten: @ 3.6660)

ISSUED	CHECKED	CHECKED	CHECKED	APPROVED

*FILTRO*NETICS Inc

1. APPLICATION

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

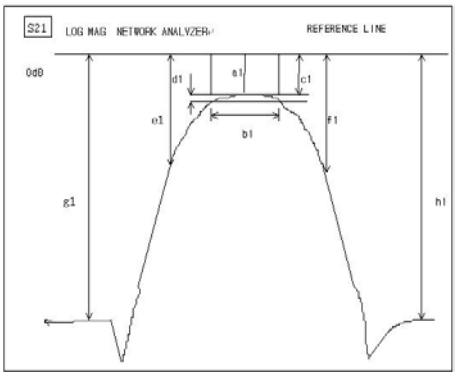
2. PART NUMBER

PART NO	CF-19100328
PACKAGING	PLASTIC TRAY OR (TAPE AND REEL OVER 400) PIECES

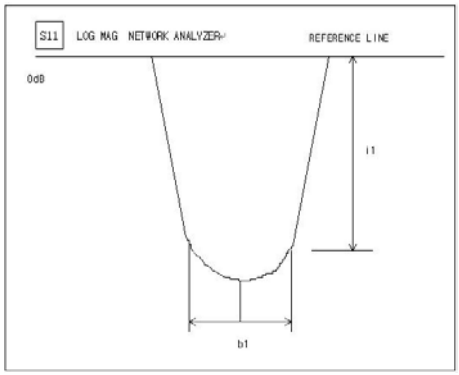
3. SPECIFICATIONS

No	ITEMS		SPECIFICATIONS
1	Center Frequency (Fo)		1910 MHz
2	Pass Bandwidth (BW)		Fo ± 16 MHz (1894 ~ 1926 MHz)
3	Insertion Loss in BW		4.0 dB Max
4	Ripple in BW		0.5 dB Typ. (0.7 dB Max)
5	Return Loss in BW		15.0 dB Min
6	Attenuation	At Fo – 70 MHz	70 dBc Min
		At Fo + 70 MHz	
		At Fo 3.660 GHz	
7	Impedance		50 Ohm
8	Maximum Input Power		1 W
9	Operating Temperature Range		0□ to +50□
10	RoHS Compliant		YES

S21 LOG MAG NETWORK ANALYZER

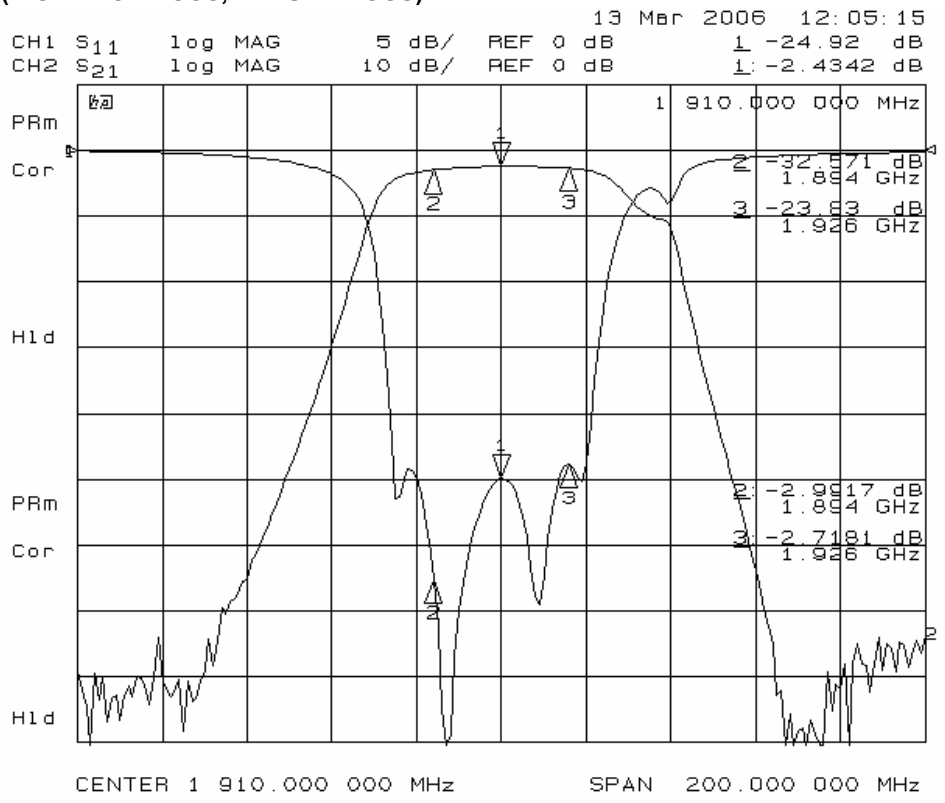


S11 LOG MAG NETWORK ANALYZER

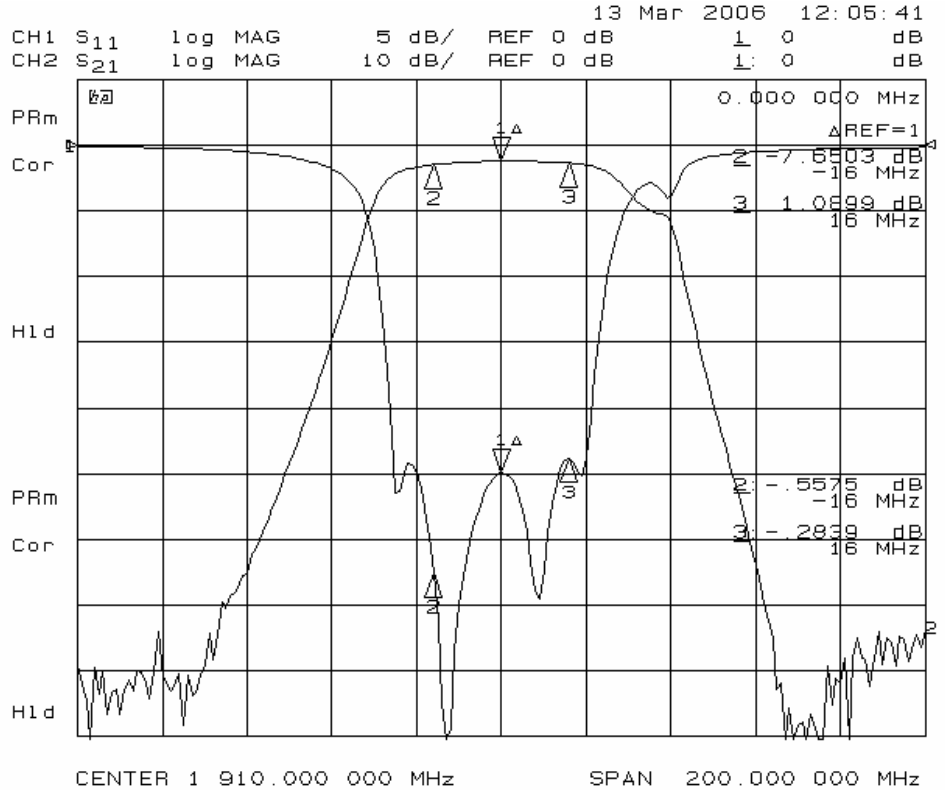


4. GRAPHS

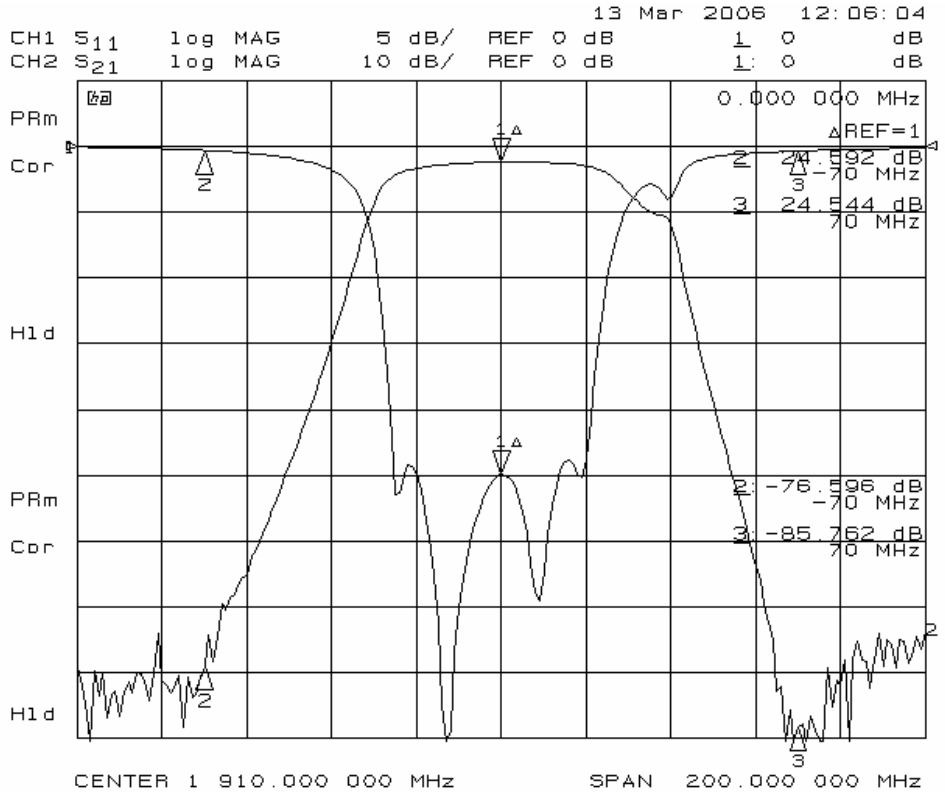
S21 & S11 (INSERTION LOSS, RETURN LOSS)



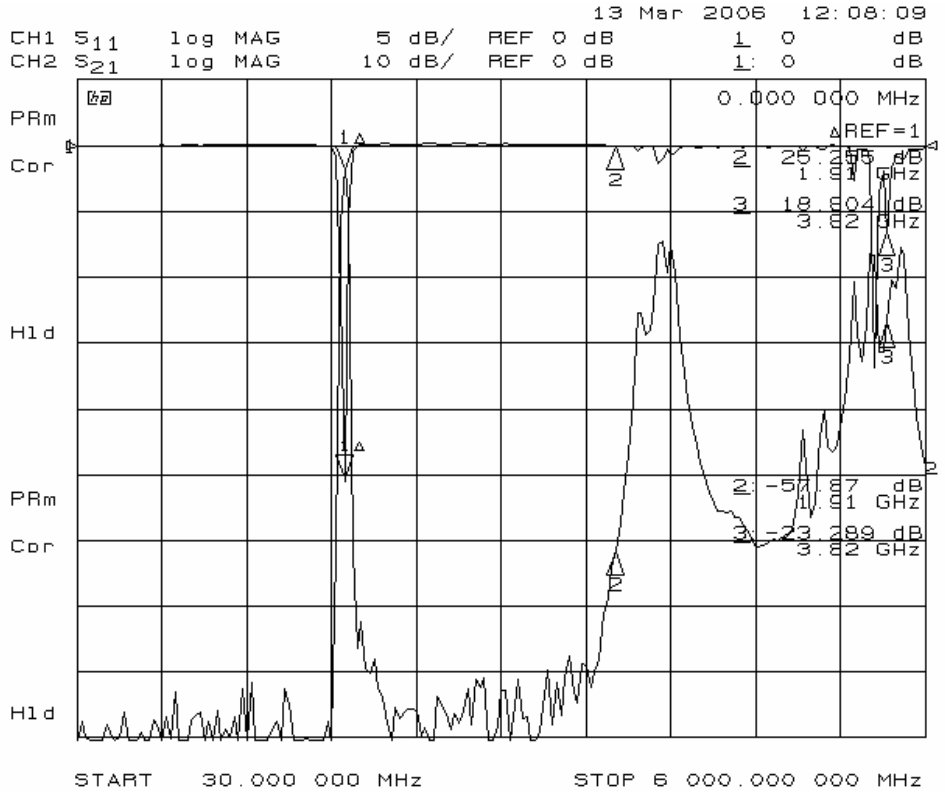
S21 & S11 (RIPPLE)



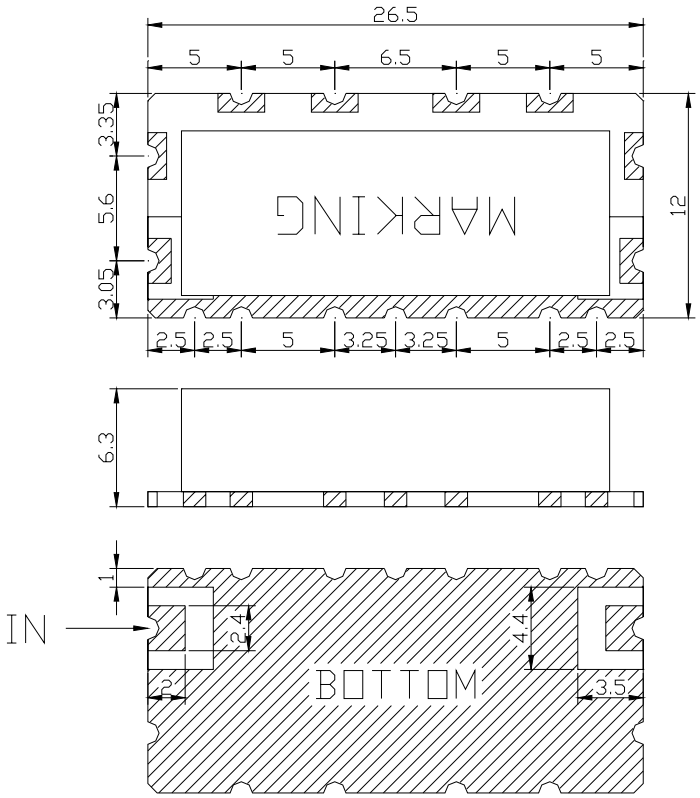
S21 & S11 (ATTENUATION AT Fo +/- 70 MHz)



S21 & S11 (SPURIOUS)



5. DIMENSIONS



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

MARKING- Laser only

CF-19100328xxxx (x = date code)
Filtronetics, Inc
Date Code

UNIT: MM
TOLERANCE: +/-0.5MM
IN/OUT LAND :+/-0.3MM

- 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 solder-ability 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.

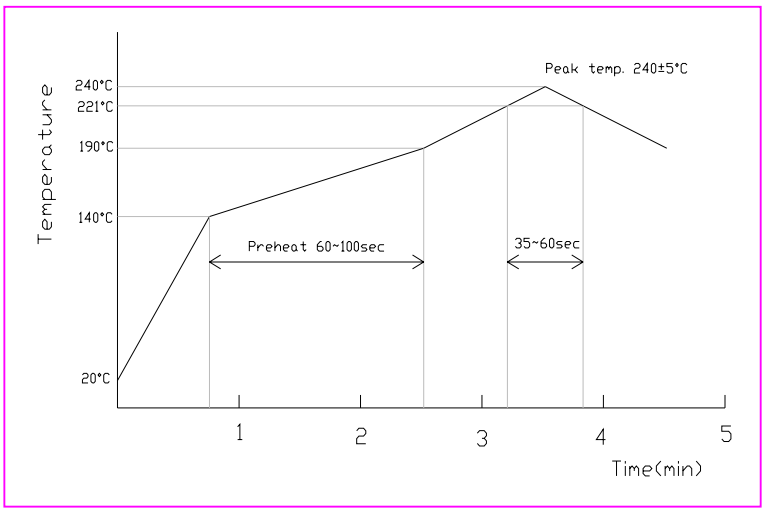
6. DEFINITIONS

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 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.	

7. RELIABILITY TEST AND CONDITIONS

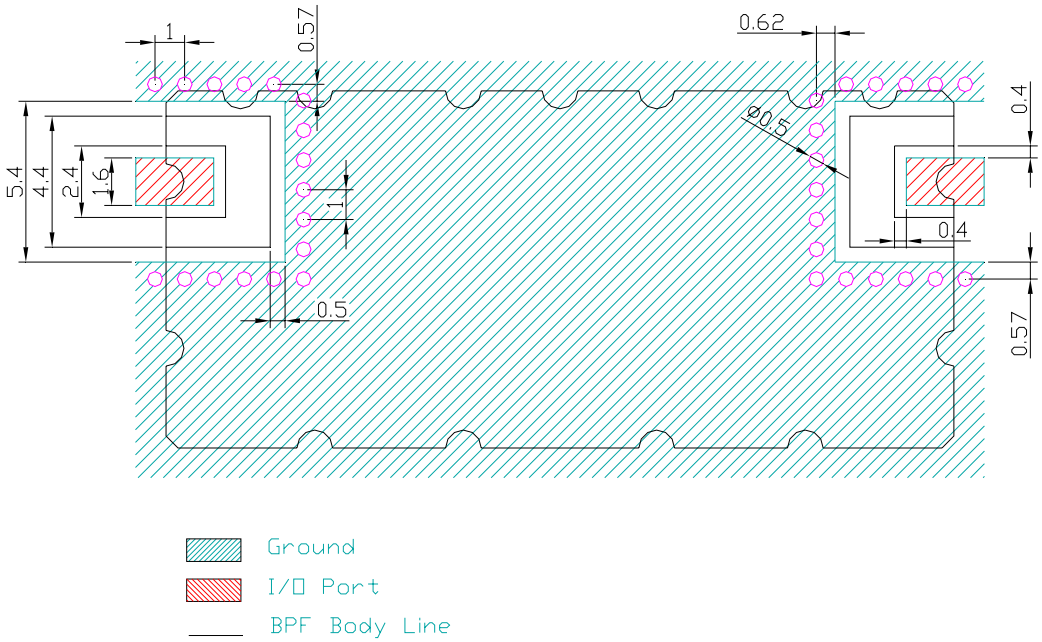
ITEM	TEST CONDITIONS	REQUIREMENTS
Resistance to solder heat	Preheat temperature : 120 to 150□ Preheat time: 1 to 1.5 min Solder temperature: 260 +/- 10□ Dipping time: 10 +/- 0.5 sec	No damage such as cracks should be caused in chip element.
Solderability	Preheat temperature: 120 to 150□ Preheat time: 1 to 1.5 min Solder temperature: 235 +/- 5□ 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□ 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□ 15 min Step 2 : - 30□ 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□ 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 □ (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
- Solder Cream: Sn96.5/Ag3.5

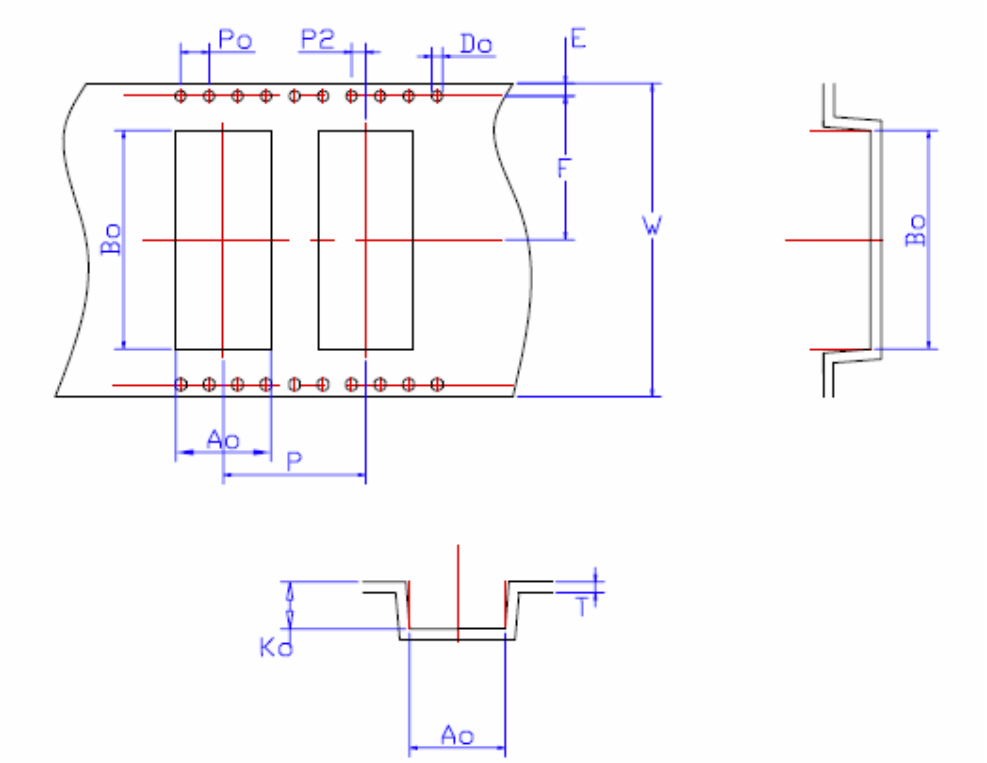
9. RECOMMENDED PCB LAYOUT



Note: Ground condition is based on whole ground condition. Add as many via holes as possible. Results may vary based on board characteristics and may have to be adjusted.

10.0 Tape and Reel Specifications for orders over 400 pieces

TAPE AND REEL (400 PER REEL)



NAME	W	E	F	Do	P	Po	P2	Ao	Bo	Ko	T
SPEC	44.0	1.75	20.2	1.5	20.0	4.0	2.0	13.4	30.7	6.6	0.4
TOLERANCE (+/-)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05

- All dimensions are in MM
- 10 sprocket hole pitch cumulative tolerance ±0.2.
- Camber not to exceed 1mm in 100mm.
- Ao and Bo measured on a plane 0.1mm above the bottom of the pocket.
- Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.