

SPECIFICATION FOR APPROVAL

ITEM: DIELECTRIC CERAMIC FILTER
PART NUMBER: CF-195004051

ISSUED	CHECKED	CHECKED	CHECKED	APPROVED

FILTRONETICS Inc.

1. APPLICATION

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

2. PART NUMBER

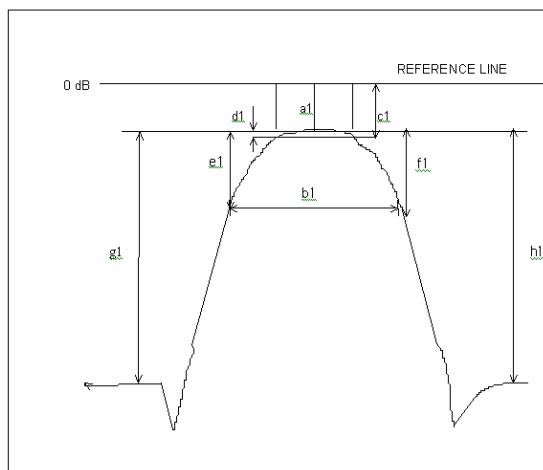
PART NO	CF-195004051

3. SPECIFICATIONS

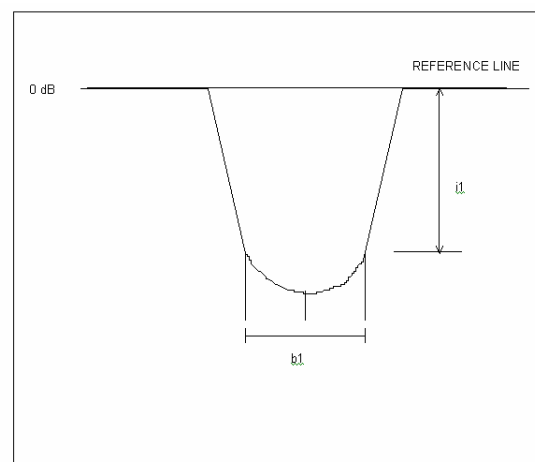
NO	ITEMS		Ref.	SPECIFICATION
1	Center Frequency (Fo)		a1	1950 MHz
2	3.0 dB Band Width		b1	40 MHz Min
3	Insertion Loss	AT Fo	a1	3.8 dB Max
4	ATTENUATION	AT 1850 MHz	g1	60 dB Min
		AT 2050 MHz	h1	60 dB Min
5	GROUP DELAY VARIATION AT Fo +/- 20MHz			17 ns max
6	V.S.W.R	AT Fo		1.5 :1 MAX
7	Impedance			50Ω
8	Maximum Input Power			1 W (+30dBm)
9	Operating Temperature Range			-35 - +75℃

3. GRAPHS

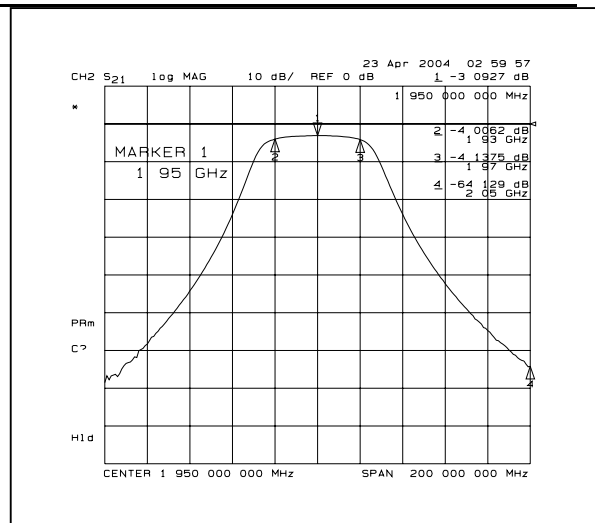
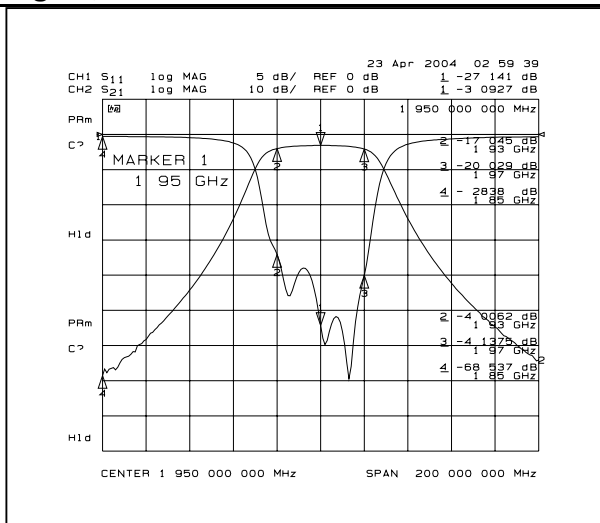
S21 LOG MAG NETWORK ANALYZER



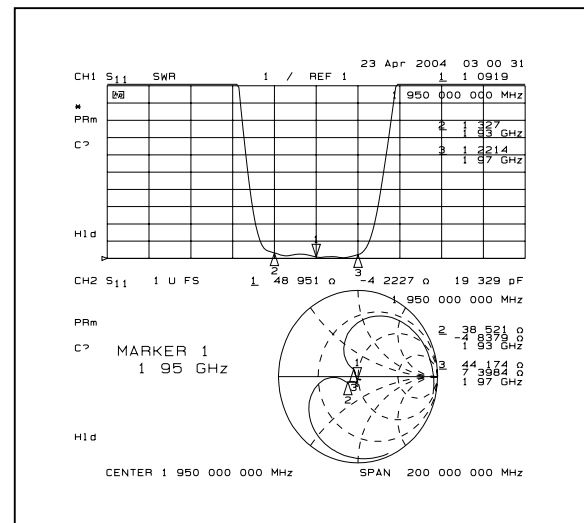
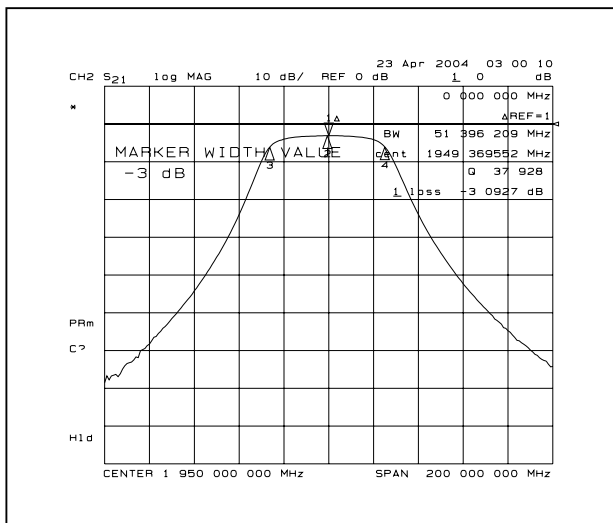
S11 SWR NETWORK ANALYZER



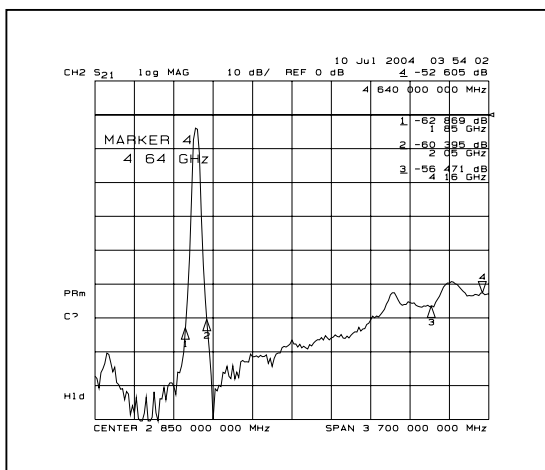
S21 & S11 (INSERTION LOSS, RETURN LOSS, ATTENUATION)



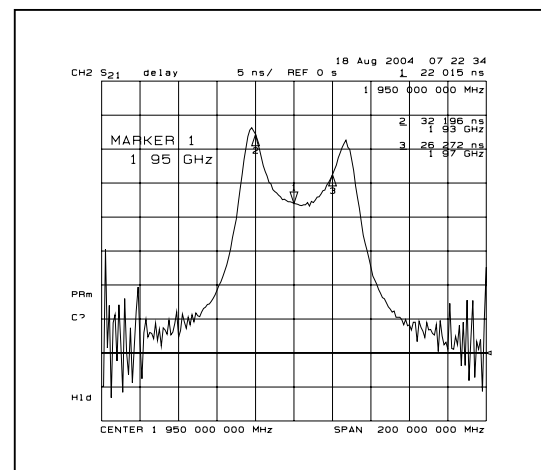
S21 vs S11(3.0 dB BAND WIDTH , V.S.W.R , SMITH CHART)



1950MHz OUTBAND ATTENUATION



S21 (Group Delay)



4. DEFINITIONS

6010 Parretta Dr. Kansas City, MO 64120

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FILTRONETICS, Inc

www.filtro.net

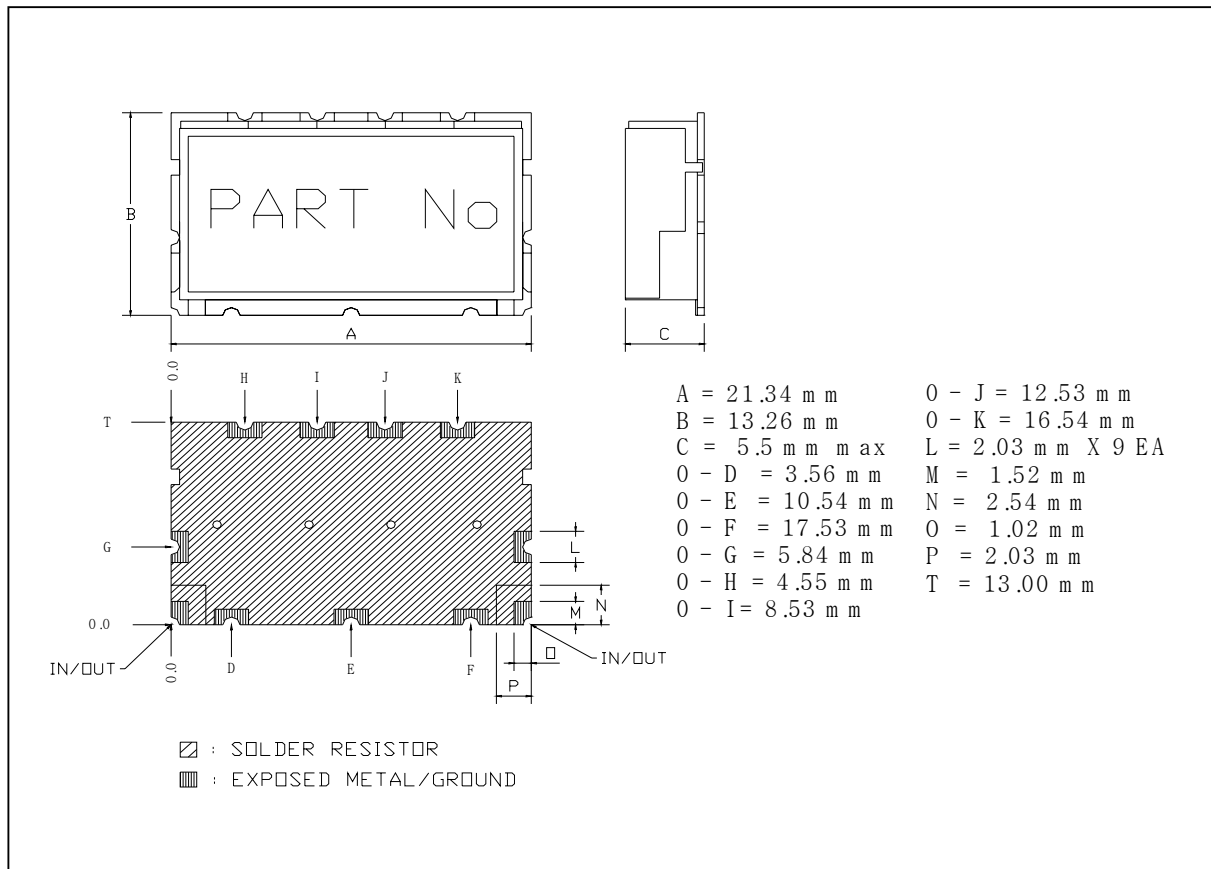
TERMS	DESCRIPTION	SPECIFICATION
Center Frequency	The midpoint of through band pass filter pass band, normally expressed as the arithmetic mean of the -3db point. Also called f_0 .	3. SPECIFICATION
Pass Band Width	The width of the pass band of a filter referenced to the minimum insertion loss point in 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.	

5. DIMENSIONS

UNIT: MM

TOLERANCE: +/-0.5MM

IN/OUT LAND :+/-0.3MM



※ MATERIAL SPECIFICATION

1. PCB
 - 1) MATERIAL: FR4
 - 2) TERMINALS: SN-PB PLATED
2. METAL CASE
 - 1) MATERIAL: Sn OR Ni PLATED
3. RESONATOR
 - 1) COATING MATERIAL: Ag
 - 2) DIMENSION: 4.0MM x 4.0MM

※ MARKING

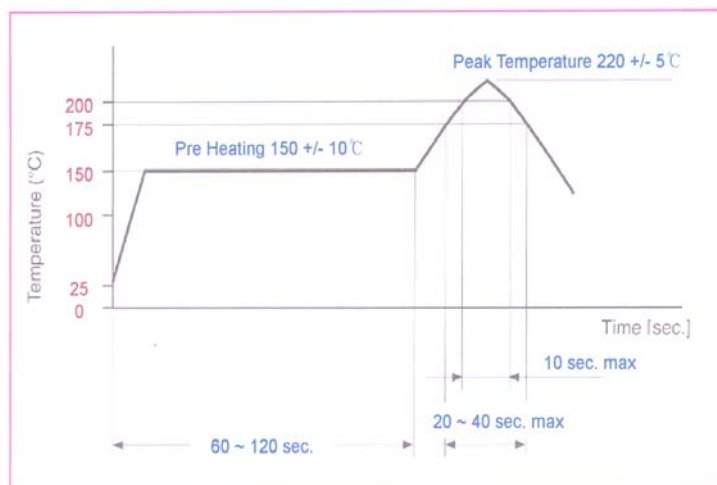
Part Number
Filtronetics

● 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.

6. 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.

7. 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