SPECIFICATION FOR APPROVAL

ITEM: DIELECTRIC CERAMIC FILTER
PART NUMBER: CFDM-3437353710

9/26/05
Tape and Reel
Marking

ISSUED	CHECKED	CHECKED	CHECKED	APPROVED

***FILTRO**NETICS Inc*

1. APPLICATION

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

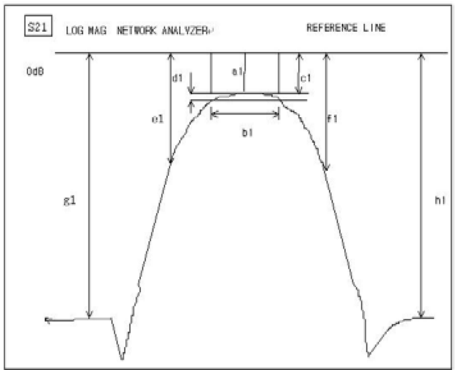
2. PART NUMBER

PART NO	CFDM-3437353710
PACKAGING	Tape and Reel

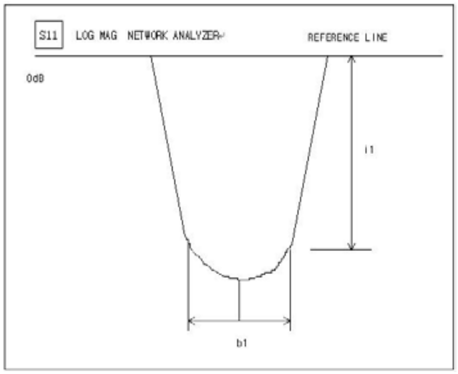
3. SPECIFICATIONS

NO	ITEMS			SPECIFICATION	
				TX	RX
1	Center Frequency (Fo)		a1	3437.5 MHz	3537.5 MHz
2	Pass Band Width (PB)		b1	Fo ± 12.5 MHz	Fo ± 12.5 MHz
3	Insertion Loss	in PB	c1	3.0 dB Max	3.0 dB Max
4	Ripple	in PB	d1	0.7 dB Max	0.7 dB Max
5	Return Loss	in PB	i1	11.7 dB Min	11.7 dB Min
6	Attenuation	DC - 2475 MHz		35 dB Min	35 dB Min
		At 2770 – 2971 MHz		45 dB Min	
		At 3097 – 3211 MHz		40 dB Min	
		At 3525 – 3550 MHz		35 dB Min	
		At 3975 – 4975 MHz		6 dB Min	8 dB Min
		At 2824 – 3067 MHz			40 dB Min
		At 3403 – 3430 MHz			30 dB Min
		At 3425 - 3450 MHz			35 dB Min
7	TX - RX Isolation			40 dB Min (3525-3550) – (3425-3450)	
8	Impedance			50Ω	50Ω
9	Maximum Input Power			3 W	1 W
10	Operating Temperature			- 45 to + 70 ℃	- 45 to + 70 ℃

S21 LOG MAG NETWORK ANALYZER

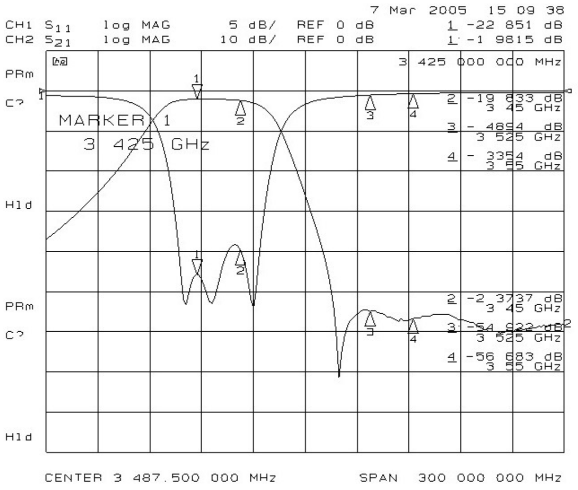


S11 LOG MAG NETWORK ANALYZER

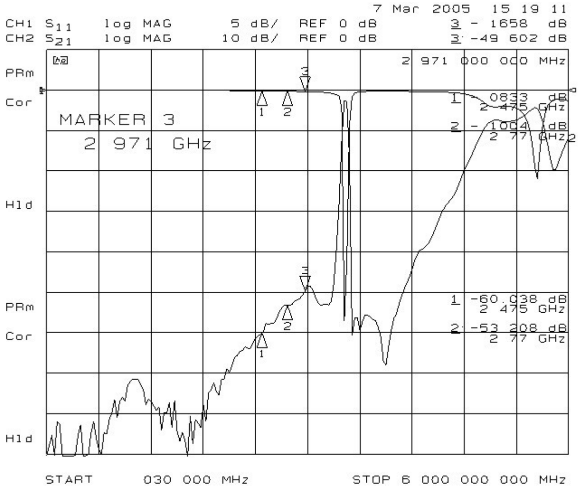


4. GRAPHS

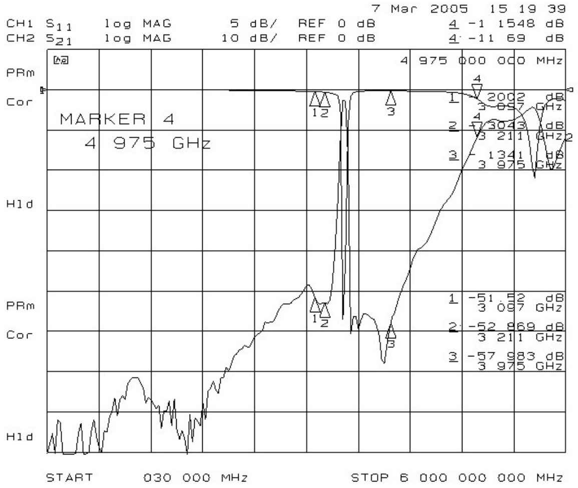
S21 & S11 (TX INSERTION LOSS, RETURN LOSS, ATTENUATION, RIPPLE)



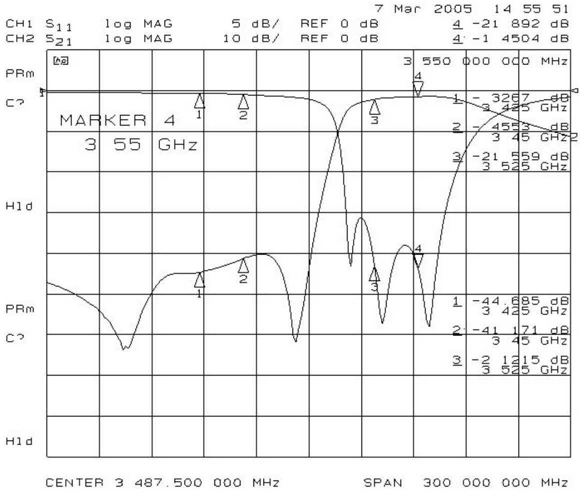
S21 & S11 (TX ATTENUATION AT 2475 ~ 2971 MHz)



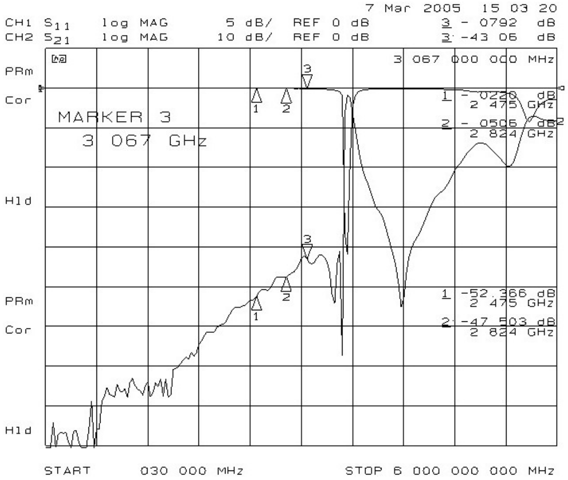
S21 & S11 (TX ATTENUATION AT 3097 ~ 4975 MHz)



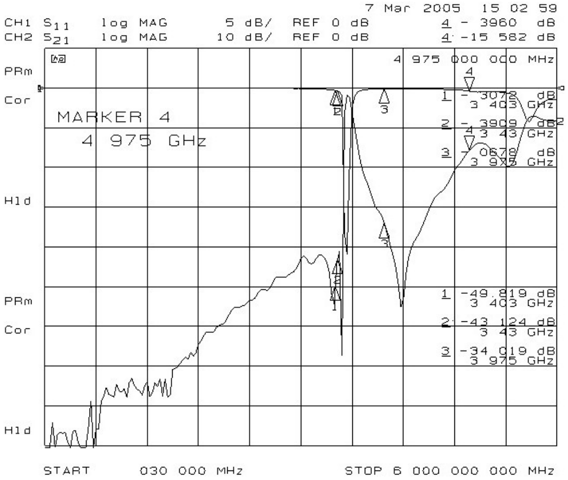
S21 & S11 (RX INSERTION LOSS, RETURN LOSS, ATTENUATION, RIPPLE)



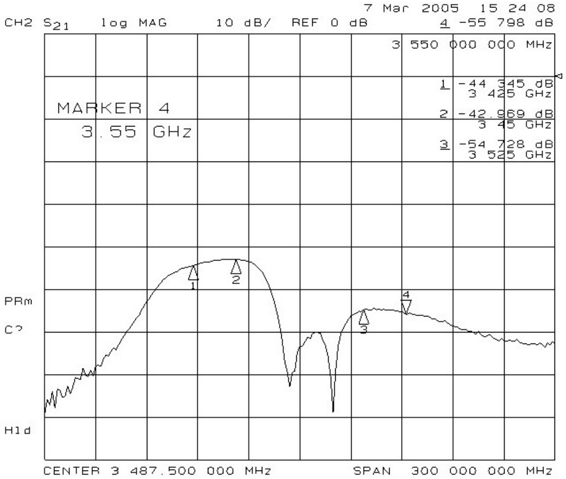
S21 & S11 (TX ATTENUATION AT 2475 ~ 3067 MHz)



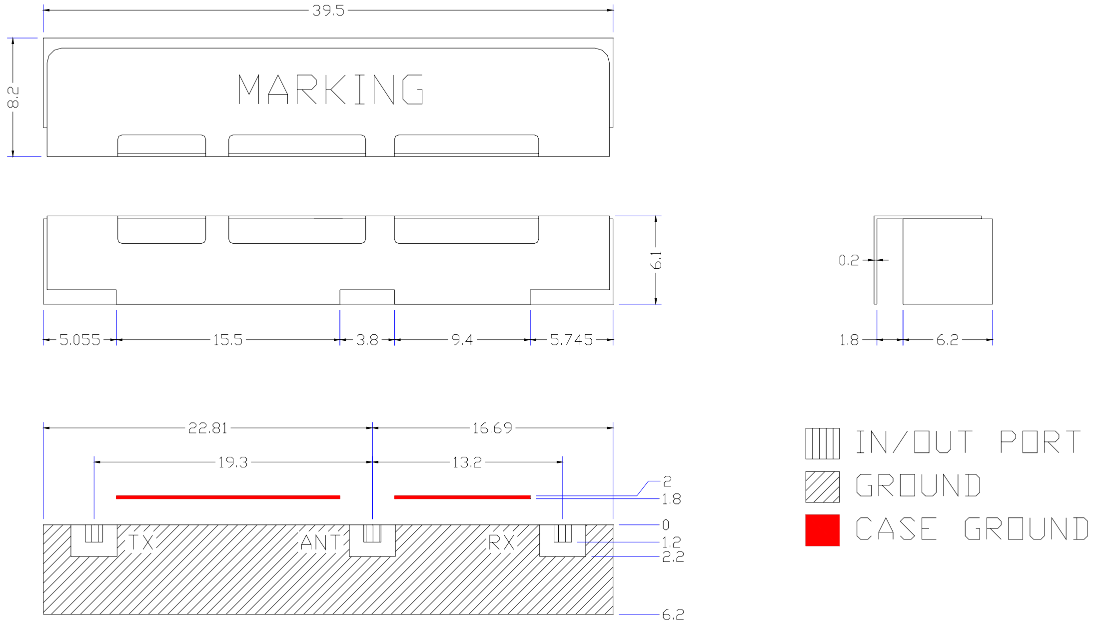
S21 & S11 (TX ATTENUATION AT 3403 ~ 4975 MHz)



S21 & S11 (TX-RX ISOLATION)



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

CFDM-3437353710
Filtronetics
DATE CODE

UNIT: MM

TOLERANCE: ±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.

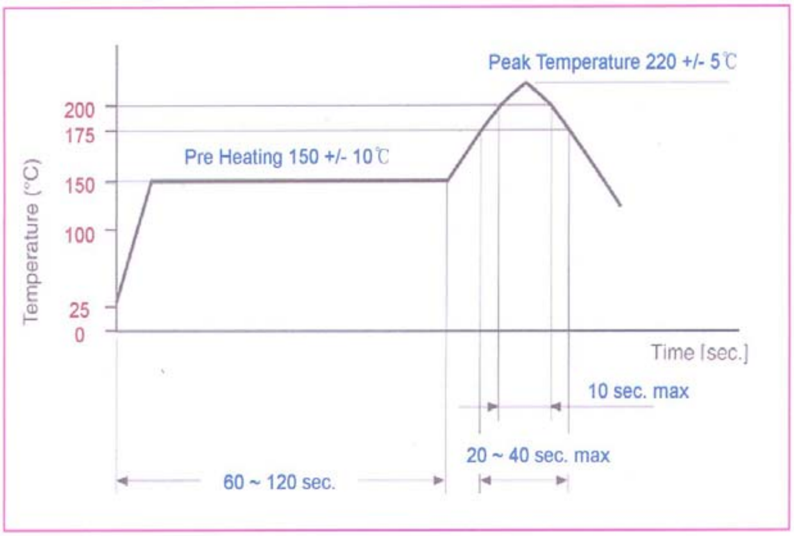
6. DEFINITIONS

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
- Hot plates
- Solder Cream: Sn96.5/Ag3.5