

# SPECIFICATION

COMMERCIALY AVAILABLE

CERAMIC FILTER  
 PART NUMBER:CFDM1732213214A

ISSUED / REVISION	ENGINEER APPROVED	DOCUMENT CHECKED	DRAFTSMAN	DOCUMENT CHECKED
11/26/07**				
12/09/10 DS	12/9/2010 SRJ	12/9/2010 BF	12/9/2010 GL	

**FILTRONETICS Inc**

**1. APPLICATION**

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

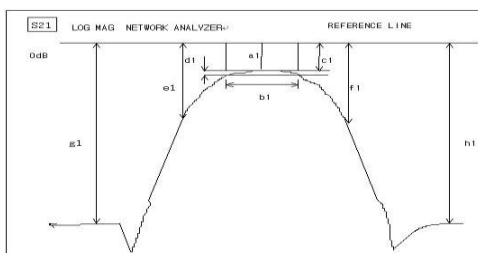
**2. PART NUMBER**

<b>PART NO</b>	<b>CFDM1732213214A</b>
<b>PACKAGING</b>	<b>PLASTIC TRAY</b>

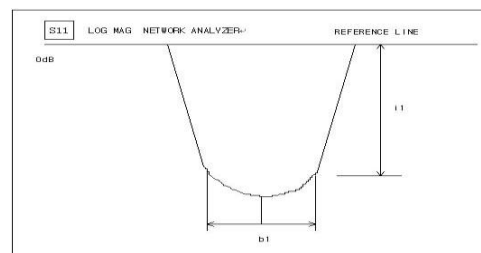
**3. SPECIFICATIONS**

NO	Parameter	Specification		
		TX -> ANT	ANT -> RX	
1	Center Frequency (Fo)	1732.5 MHz	2132.5 MHz	
2	Pass Bandwidth (BW)	1710 ~ 1755 MHz	2110 ~ 2155 MHz	
3	Insertion Loss in BW	2.0 dB Max.	2.0 dB Max.	
4	Ripple in BW	1.0 dB Max.	1.0 dB Max.	
5	Return Loss in BW	12 dB Min.	12 dB Min.	
6	Attenuation	At 1878.5 ~ 1923.5 MHz	53 dB Min.	
		At 2047 ~ 2092 MHz	40 dB Min.	
		At 3420 ~ 3510 MHz	25 dB Min.	
		At 5130 ~ 5265 MHz	10 dB Min.	
		At DC ~ 1990 MHz	-	35 dB Min.
		At 1710 ~ 1755 MHz	-	55 dB Min.
		At 2350 ~ 3601 MHz	-	35 dB Min.
7	Isolation	At DC ~ 1710 MHz	30 dB Min.	
		At 1710 ~ 1755 MHz	62 dB Min.	
		At 2110 ~ 2155 MHz	50 dB Min.	
		At 2155 ~ 3600 MHz	30 dB Min.	
8	Input Power	3.5 W Max.		
9	Operating Temperature	0 to +50 ° C		
10	Impedance	50 ohm		

**S21 LOG MAG NETWORK ANALYZER**

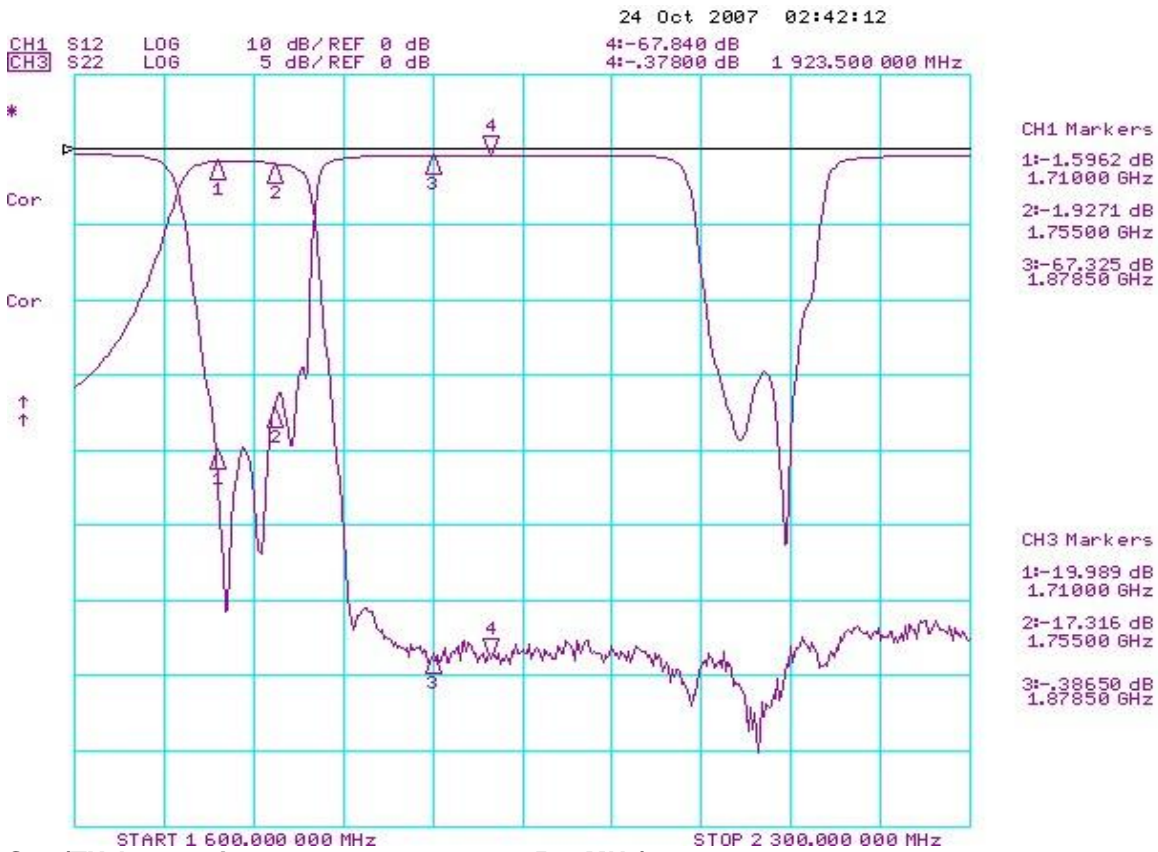


**S11 LOG MAG NETWORK ANALYZER**

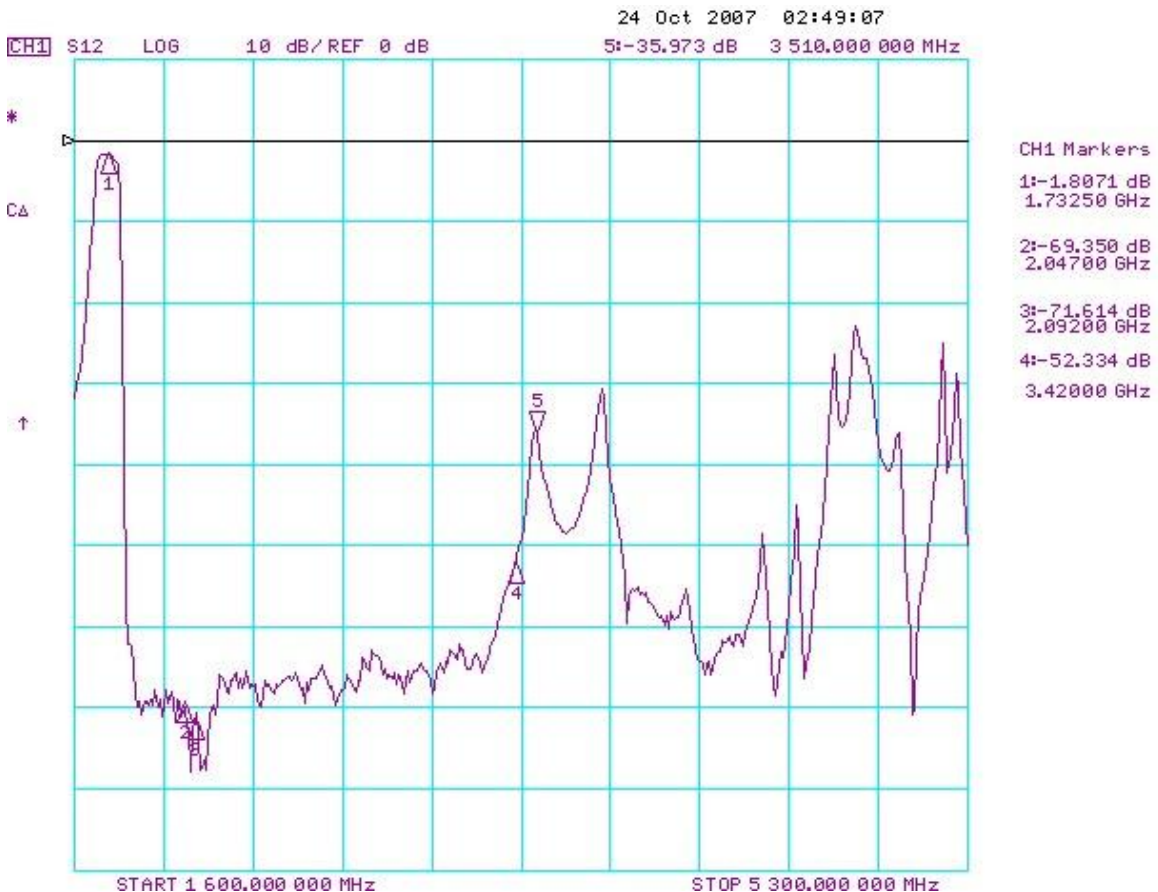


4. GRAPHS

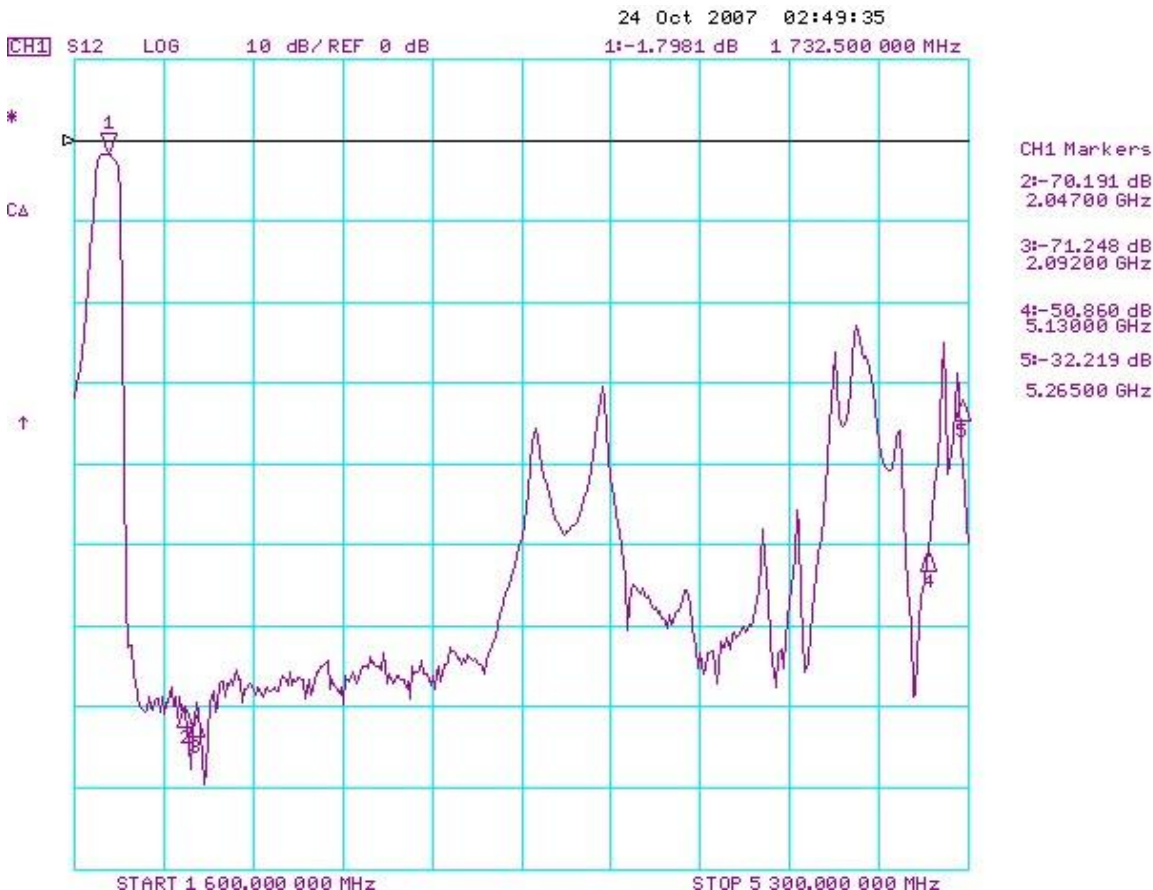
S12 & S22 (TX Insertion Loss, Ripple, Return Loss, Attenuation at 1878.5, 1923.5 MHz)



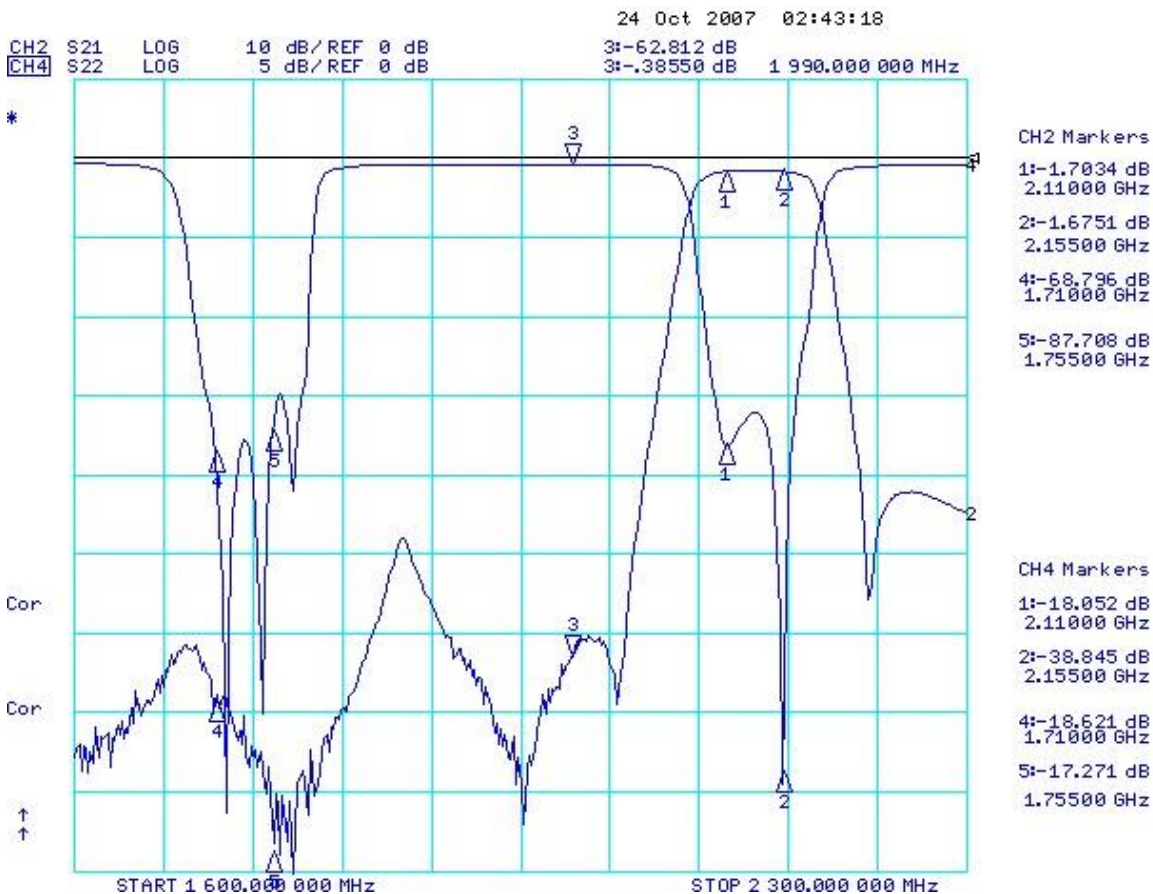
S12 (TX Attenuation at 2047, 2092, 3420, 3510 MHz)



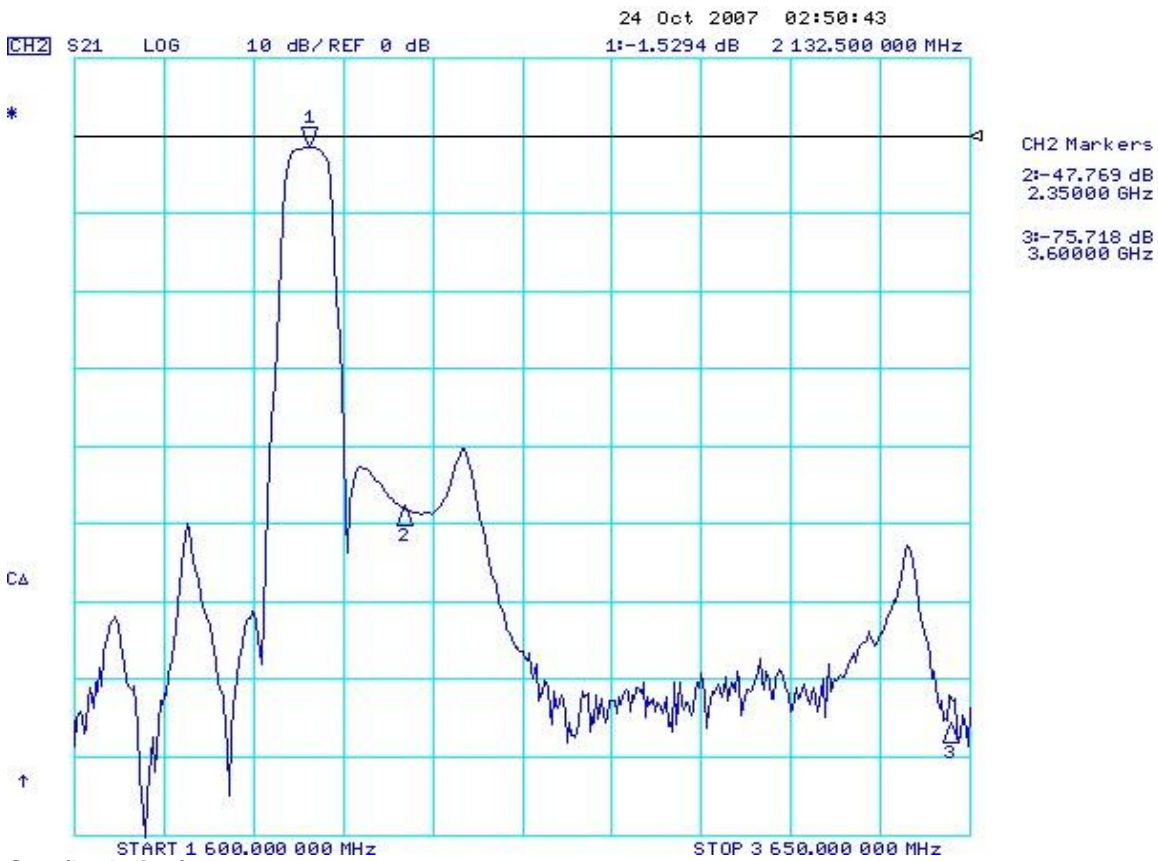
S12 (TX Attenuation at 5130, 5265 MHz)



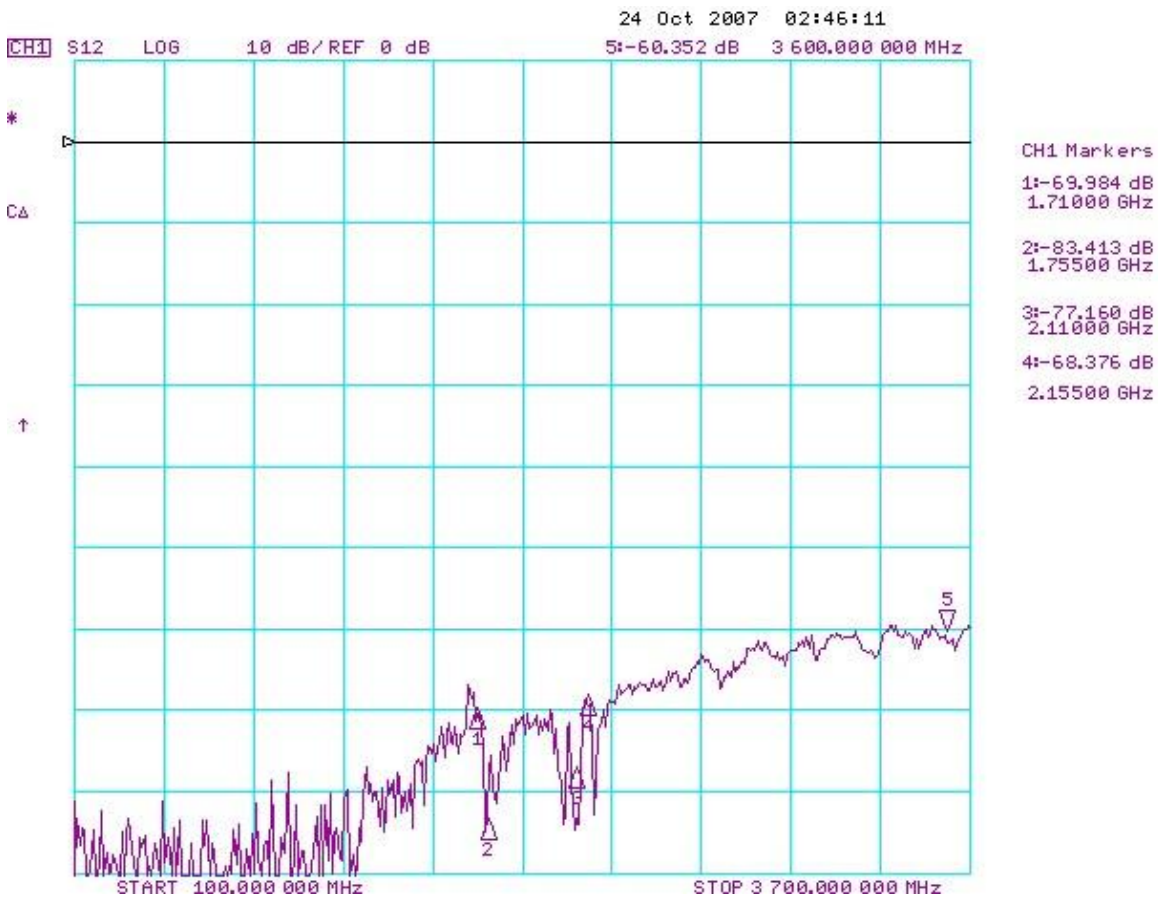
S21 & S22 (RX Insertion Loss, Ripple, Return Loss, Attenuation at 1710, 1755, 1990 MHz)



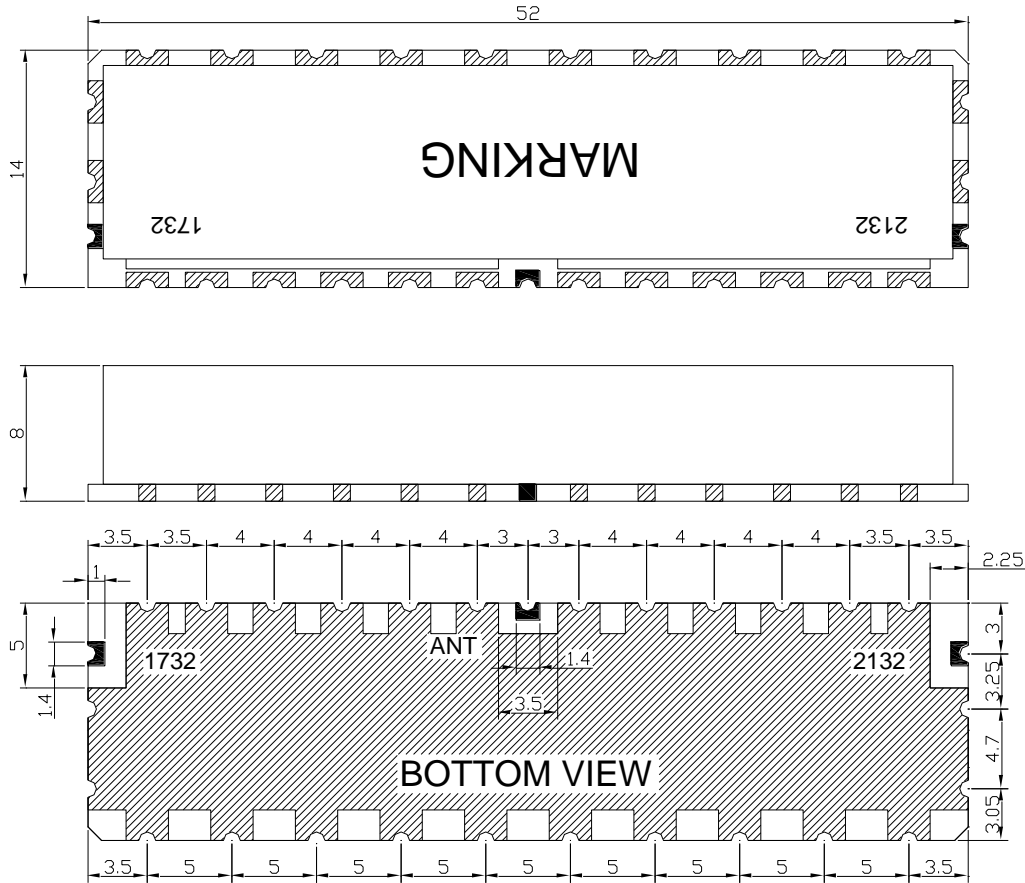
S21 (RX Attenuation at 2350, 3600 MHz)



S12 (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
4.	ROHS Compliant
5.	

MARKING (laser)	
<b>CFDM1732213214A</b>	
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 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.

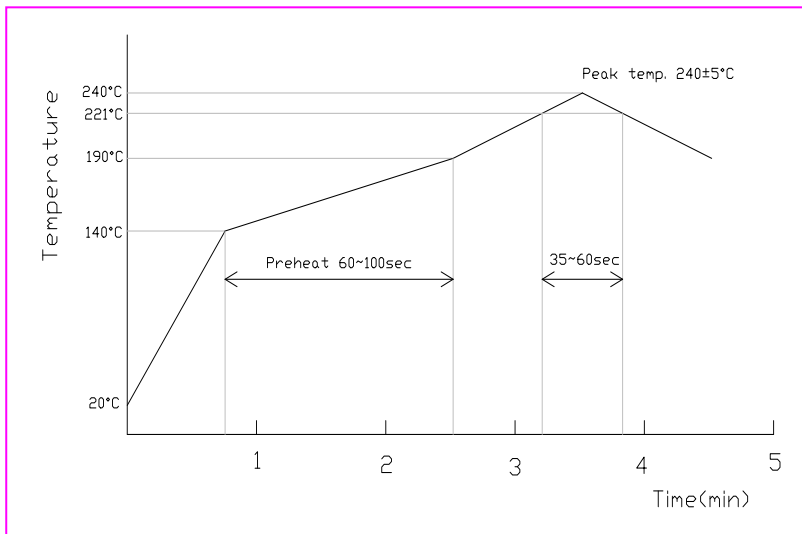
**6. DEFINITIONS**

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 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 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
- Solder Cream: Sn96.5/Ag3.5