



# Preliminary

## SF1222D

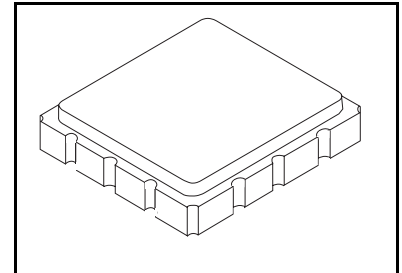
- Surface Mount 3.8 x 3.8 x 1.4 mm Package
- Complies with Directive 2002/95/EC (RoHS)



## 2010/2190 MHz SAW Duplexer

### Absolute Maximum Ratings

Rating	Value	Units
Input Power Level, Antenna in TX Band and TX in TX Band	25	dBm
Input Power Level, RX in RX Band	20	dBm
DC Voltage	3	V
Operating Temperature Range	-30 to +85	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C



### Electrical Characteristics, Transmitter-Antenna

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$F_C$			2010.0		MHz
Insertion Loss, 2000.0 to 2020.0 MHz	IL				3.0	dB
Amplitude Ripple, 2000.0 to 2020.0 MHz					1.0	dB <sub>P-P</sub>
VSWR, 2000.0 to 2020.0 MHz					2.3:1	
Attenuation Relative to 0 dBm			1559.0 to 1610.0 MHz			dB
			1980.0 MHz	35		
			1995.0 MHz	2		
			2180.0 to 2200.0 MHz	1.5		
Input Impedance (Antenna)	$Z_S$			50    Shunt Coil		Ω
Output Impedance, (TX and RX)	$Z_L$			50    Series or Shunt Coil		
Case Style	SM3838-12 3.8 x 3.8 mm Nominal Footprint					
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	935, YWWS					
Standard Reel Quantity	Reel Size 7 Inch		1000 Pieces/Reel			
	Reel Size 13 Inch		3000 Pieces/Reel			



**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

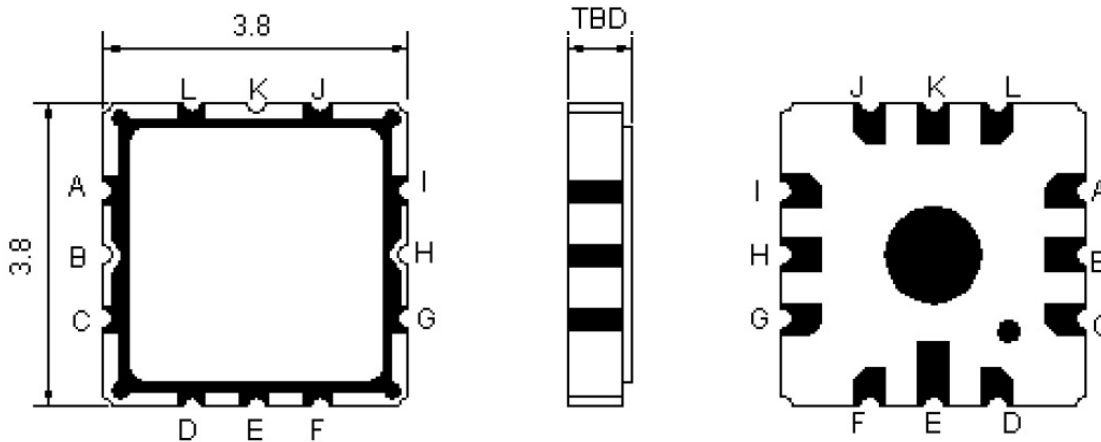
### Notes:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_c$ .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc

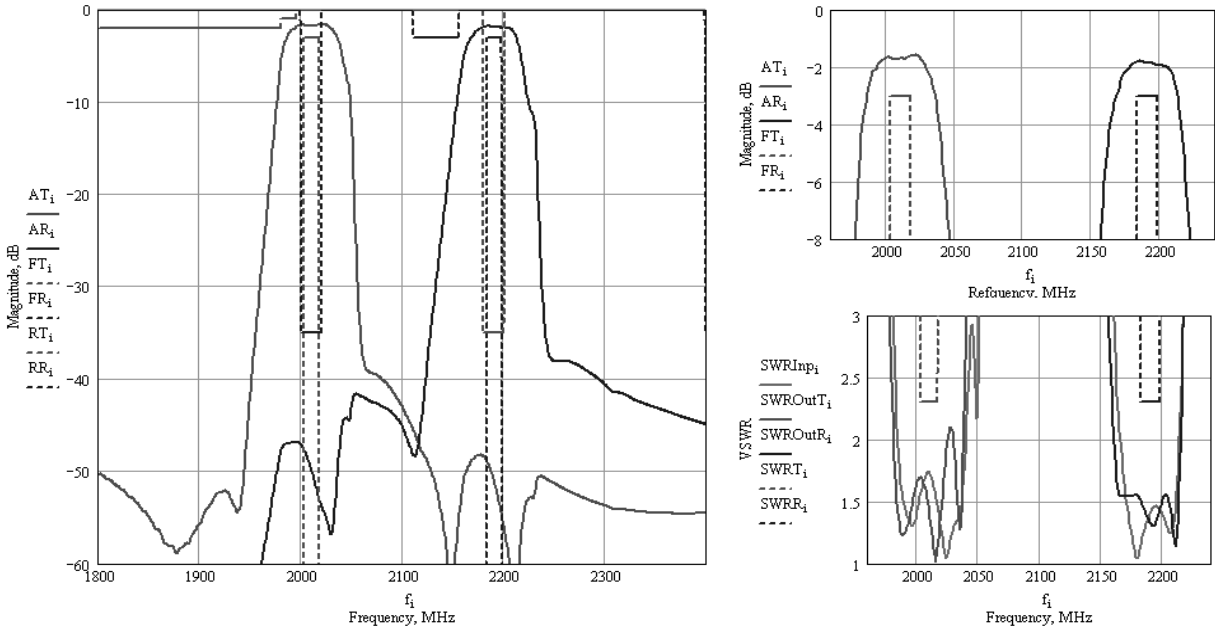
**Electrical Characteristics, Receiver-Antenna, Transmitter-Receiver Isolation**

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$F_C$			2190.0		MHz
Insertion Loss, 2180.0 to 2200.0 MHz	IL				3.0	dB
Amplitude Ripple, 2180.0 to 2200.0 MHz					1.0	dB <sub>P-P</sub>
VSWR, 2180.0 to 2200.0 MHz					2.3:1	
Attenuation Relative to 0 dBm		2000.0 to 2020.0 MHz	40			dB
		2110.0 to 2155.0 MHz	3			
		2400.0 MHz	40			
Transmitter-Receiver Isolation		2000.0 to 2020.0 MHz	40			dB
		2180.0 to 2200.0 MHz	40			

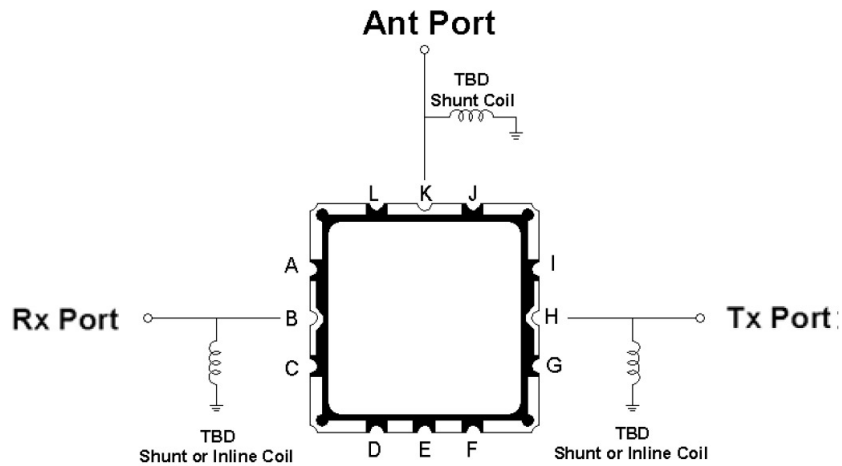
**Duplexer Package**



## Duplexer Response



## Duplexer Test Circuit



**K is the Antenna Port**  
**B is the Receiver Port**  
**H is the Transmitter Port**  
**All other Package Pads are Ground**