



*Total Solution Provider in Saw Device*

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# SL13820BS

138.24MHz IF SAW Filter  
22.46MHz Bandwidth  
Revision 0 : 2. Dec. 2008



- Electrical Characteristics
  - Package Dimensions
  - Testing Environment
  - Frequency Characteristics
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**SAWNICS Inc.**

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**Electrical Characteristics**

**Maximum Ratings**

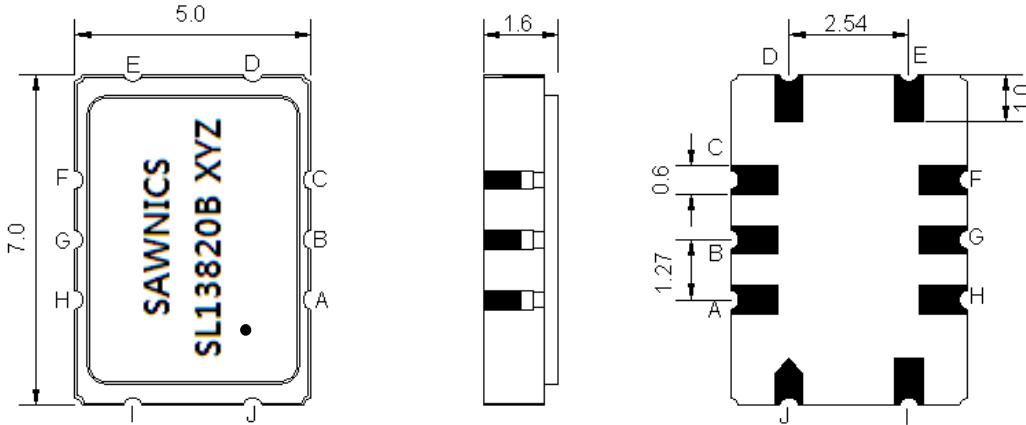
Parameters Description	Unit	Minimum	Typical	Maximum
Operating Temperature Range	°C	-40	-	85
Storage Temperature Range	°C	-40	-	85
Maximum DC Voltage	V	-	-	10
Maximum Input Power	dBm	-	-	10
Source Impedance (single ended) <sup>(1)</sup>	Ω	-	50	-
Load Impedance (single ended) <sup>(1)</sup>	Ω	-	50	-
Package type & size	T			
Length x Width	mm <sup>2</sup>		7.0×5.0	
Height	mm			1.7

**Electrical Specification**

Parameters Description	Unit	Minimum	Typical	Maximum
Center Frequency (Fo)	MHz	-	138.24	-
Insertion Loss at Fo	dB	-	9.6	11.5
Temperature Coefficient	ppm/°C	-	-86	-
Passband Ripple Variation(128.24MHz~148.24MHz)	dB <sub>p-p</sub>	-	0.3	1.0
Group Delay Variation (128.24MHz~48.24MHz)	nsec	-	25	50
Absolute Delay at Fo	µsec	-	0.72	-
Bandwidth at -1.0 dB	MHz	-	22.4	-
Bandwidth at -3.0 dB	MHz	-	23.7	-
Bandwidth at -40.0 dB	MHz	-	30.0	-
<b>Relative Attenuation</b>				
@ 0 MHz ~ 108.24 MHz	dB	54	58	-
@108.24MHz ~ 117.52MHz	dB	50	53	-
@122.88MHz	dB	45	53	-
@220.4MHz ~ 271.12MHz	dB	58	75	-
@271.12MHz ~ 1000MHz	dB	40	60	-
Temperature Coefficient	ppm/°C	-	-86	-

**Notes :** (1) With Matching Network (Ref. Testing Environment Circuit as shown below).  
Those impedances could be modified with different impedance values and/or structures, if necessary.

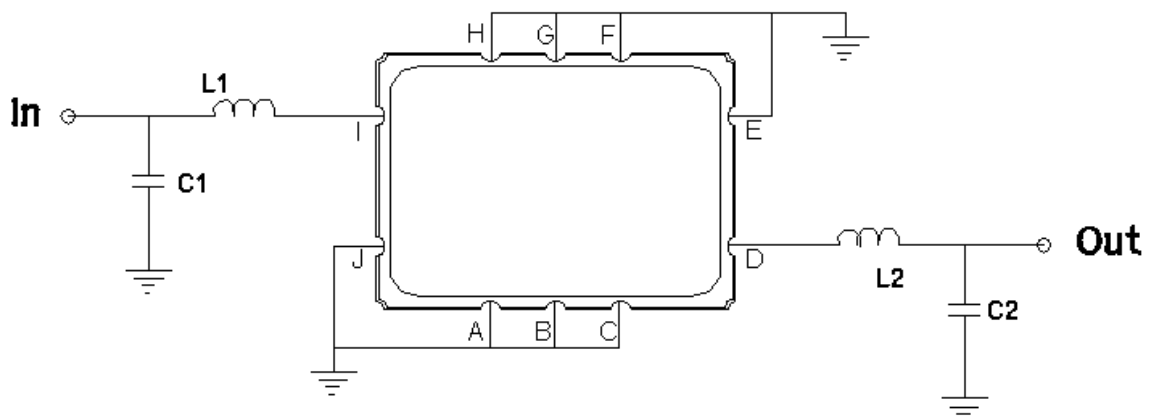
**Package Dimensions**



- ① SAWNICS: Brand
- ② SL13820B: Model Name
- ③ X : Date Code (Year)
- ④ Y : Date Code (Month)
- ⑤ Z : Date Code (Date)
- : Index Dot

Pin Description	
A, B, C, E, F, G, H, J	Ground
I	Input
D	Output

**Testing Environment**



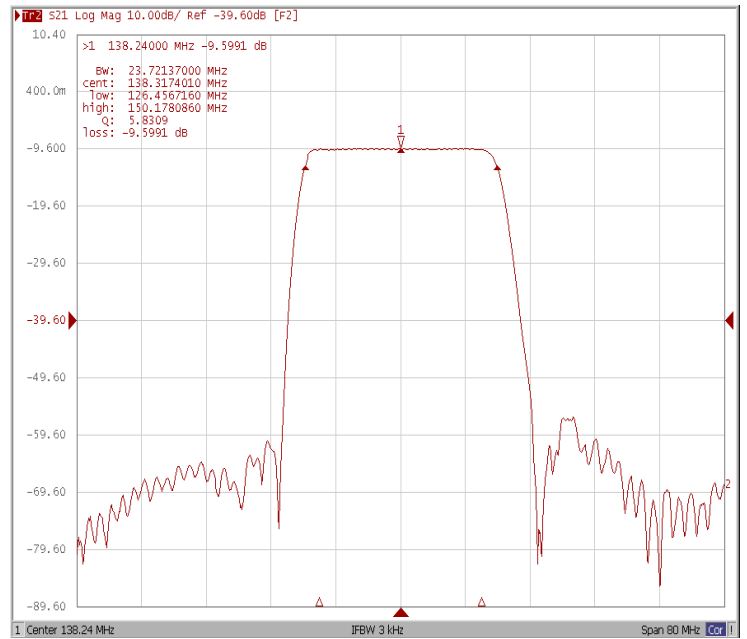
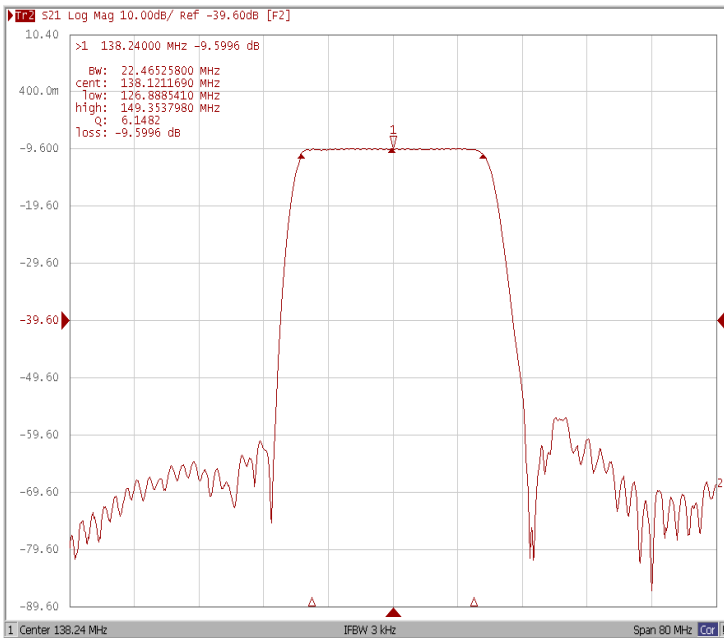
Test Fixture & Values	
Input	L1 = 47 nH ,C1 = 20pF
Output	L3 = 68 nH ,C1 = 36 pF
Source/Load Impedance	50 Ω

**Frequency Characteristics**

**Frequency Response**

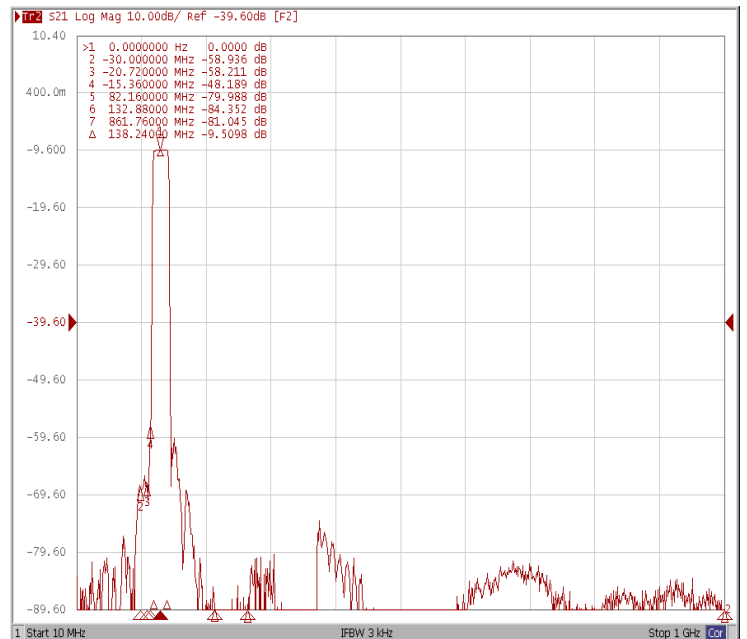
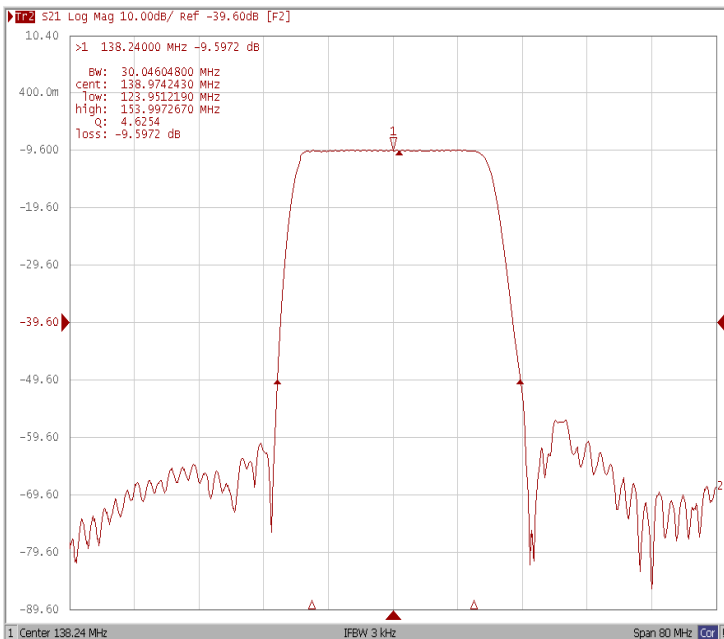
**Bandwidth at -1.0 dB**

**Bandwidth at -3.0 dB**



**Bandwidth at -40 dB**

**WIDE**

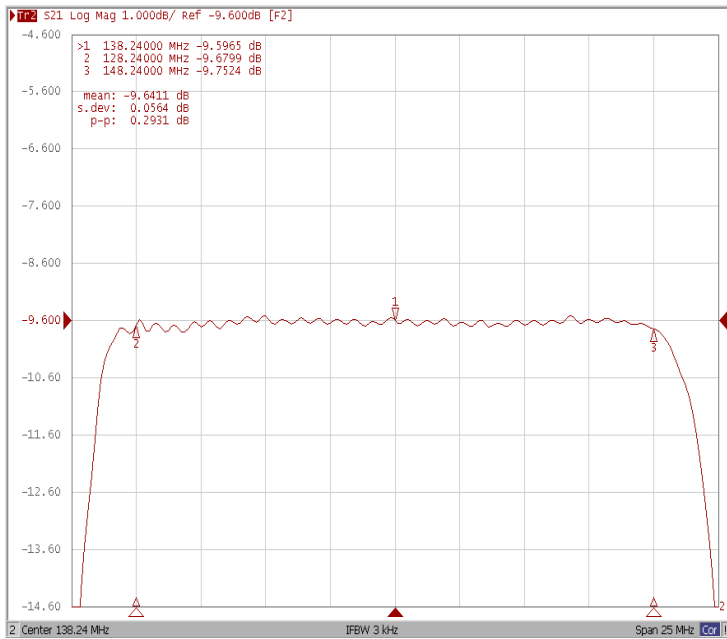




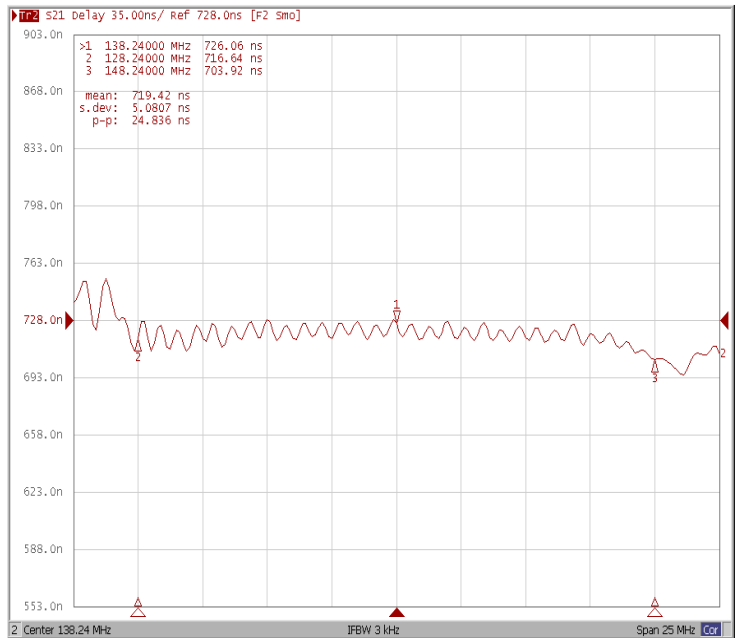
# Frequency Characteristics

## Frequency Response

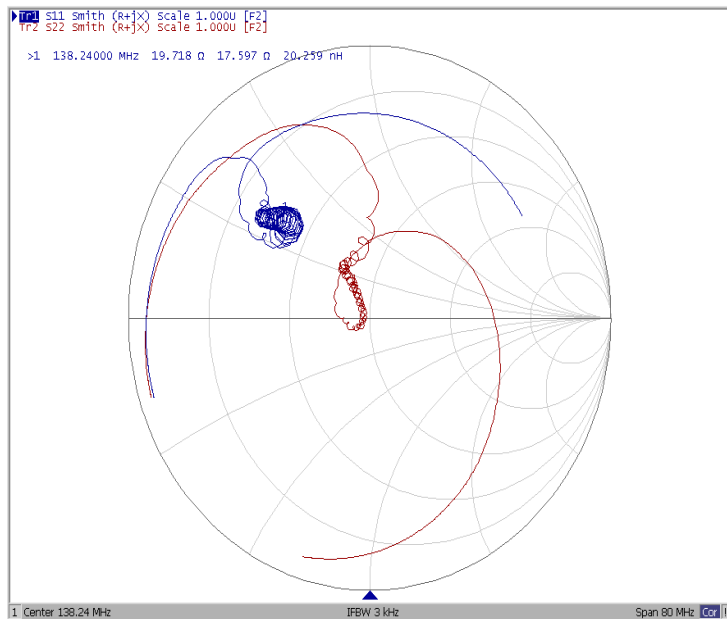
Ripple Variation (128.24MHz ~ 148.24MHz)



Group Delay Variation F(128.24MHz ~ 148.24MHz)



Smith Chart



VSWR

