



*Total Solution Provider in Saw Device*

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# SA09023AD1

90.00 MHz IF SAW Filter  
23.73 MHz Bandwidth  
Revision 0: 10. November. 2010



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

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460 Cheonheung-ri, Seonggeo-eup, Cheonan-si, Chungcheongnam-do, 330-836 / Korea.  
Tel: +82 41 550 9372 / Fax: +82 41 550 9399 / [www.sawnics.com](http://www.sawnics.com)



## □ Electrical Characteristics

### Maximum Ratings

Parameters Description	Unit	Minimum	Typical	Maximum
Operation Temperature Range	°C	-	+25	-
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	D1			
Length x Width	mm <sup>2</sup>	-	20.0 x 9.8	-
Height	mm	-	-	1.8

### Electrical Specification

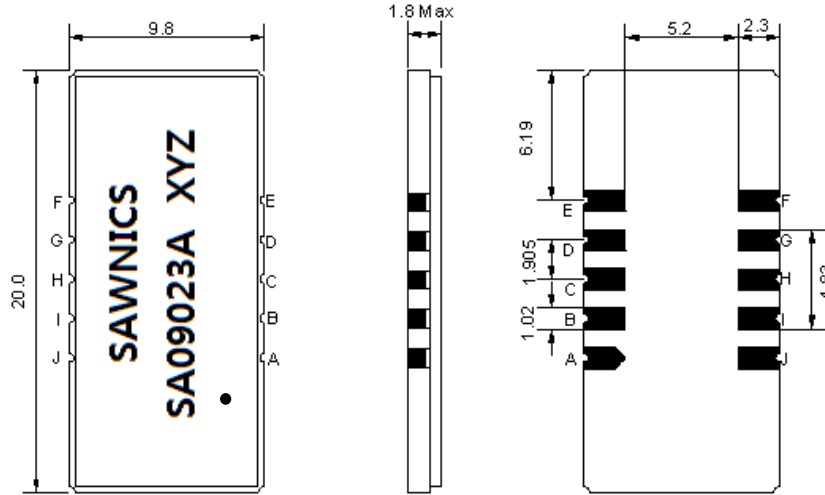
Room Temperature : +25°C

Parameters Description	Unit	Minimum	Typical	Maximum
Center Frequency (Fo)	MHz	-	90.00	-
Insertion Loss at Fo	dB	-	22.70	25.00
Group Delay Variation (Fo±11.50MHz)	nsec	-	36	80
Absolute Delay at Fo	usec	-	2.35	2.50
Passband Ripple Variation(Fo±11.50MHz)	dB	-	0.55	1.00
Bandwidth at -1dB	MHz	23.50	23.73	-
Bandwidth at -20dB	MHz	-	25.02	25.15
Bandwidth at -35dB	MHz	-	25.37	25.50
Bandwidth at -40dB	MHz	-	25.45	25.60
Bandwidth at -50dB	MHz	-	25.55	-
Ultimate Rejection	dB	50	55	-
Temperature Coefficient	ppm/°C	-	-72	-

**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.

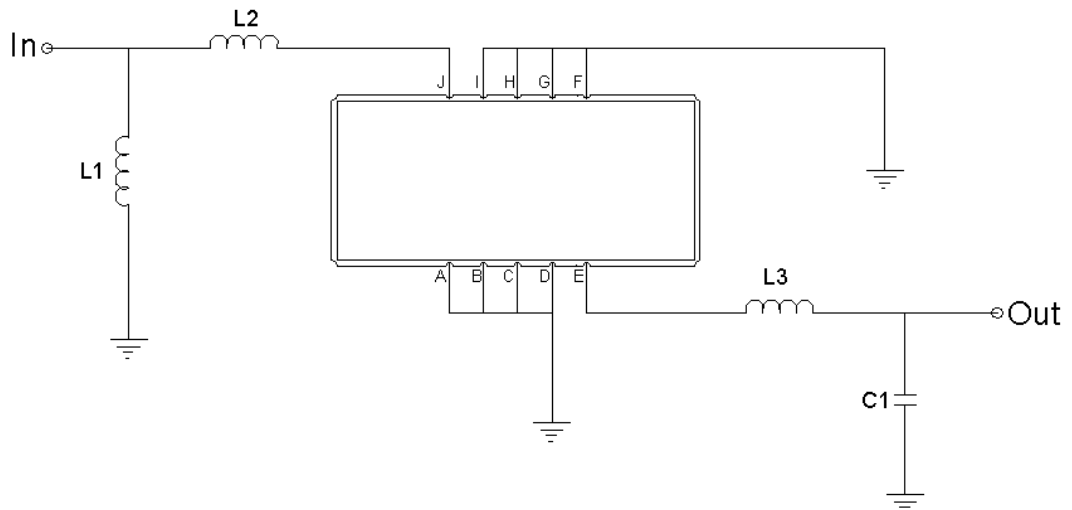
### Package Dimensions



- ① SAWNICS: Brand
- ② SA09023A: Model Name
- ③ X : Date Code (Year)
- ④ Y : Date Code (Month)
- ⑤ Z : Date Code (Date)
- : Index Dot

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

### Testing Environment



Test Fixture & Values	
Input	L1 = 82 nH, L2 = 39 nH
Output	L3 = 150 nH, C1=9 pF
Source/Load Impedance	50 Ω

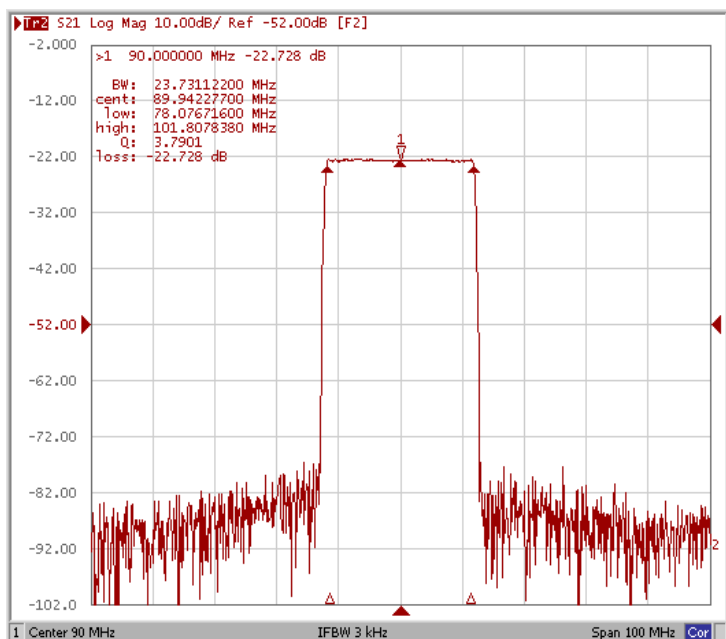


## □ Frequency Characteristics

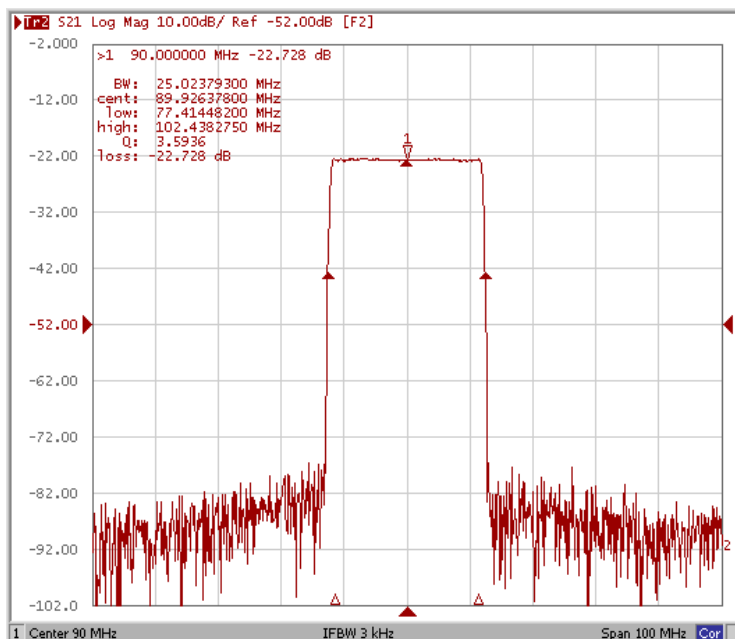
### Frequency Response

Room Temperature : +25°C

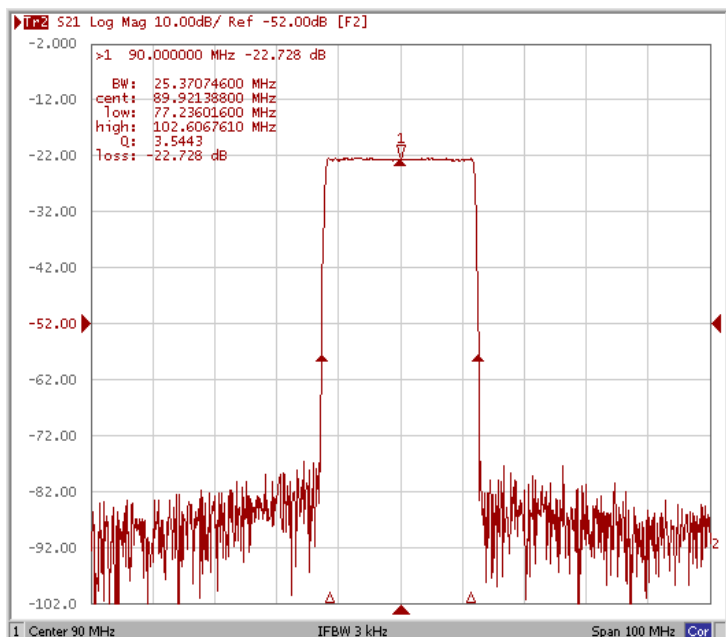
Bandwidth at -1.0 dB



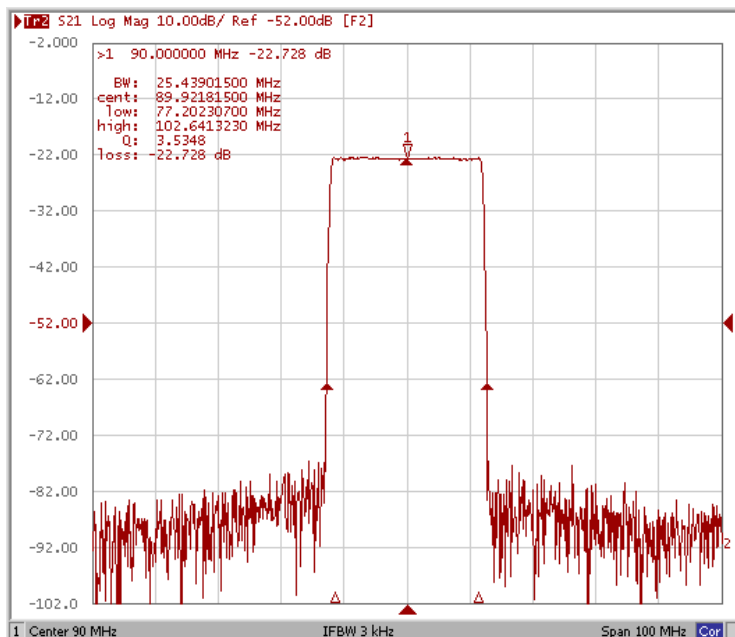
Bandwidth at -20.0 dB



Bandwidth at -35.0 dB



Bandwidth at -40.0 dB

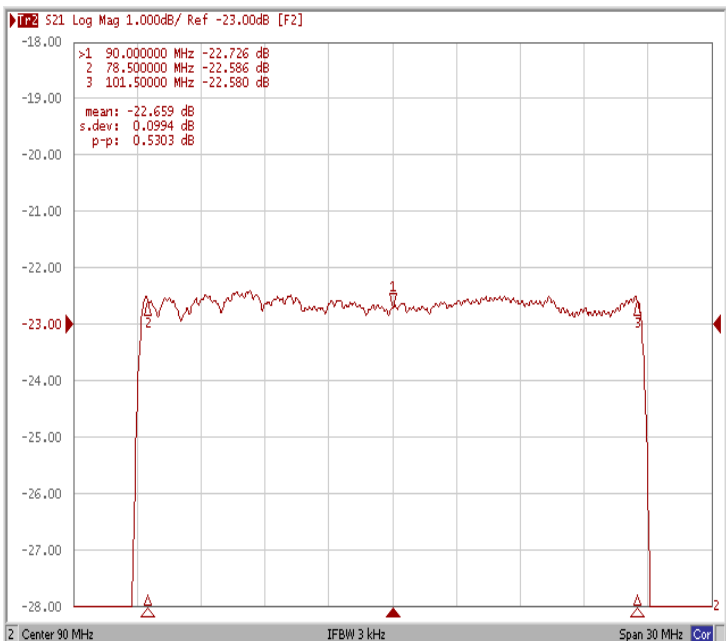




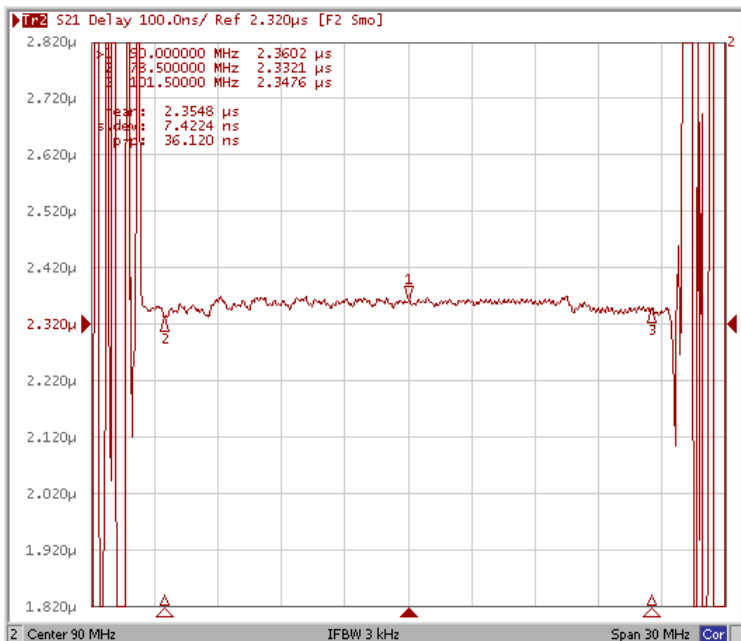
## Frequency Characteristics

### Frequency Response

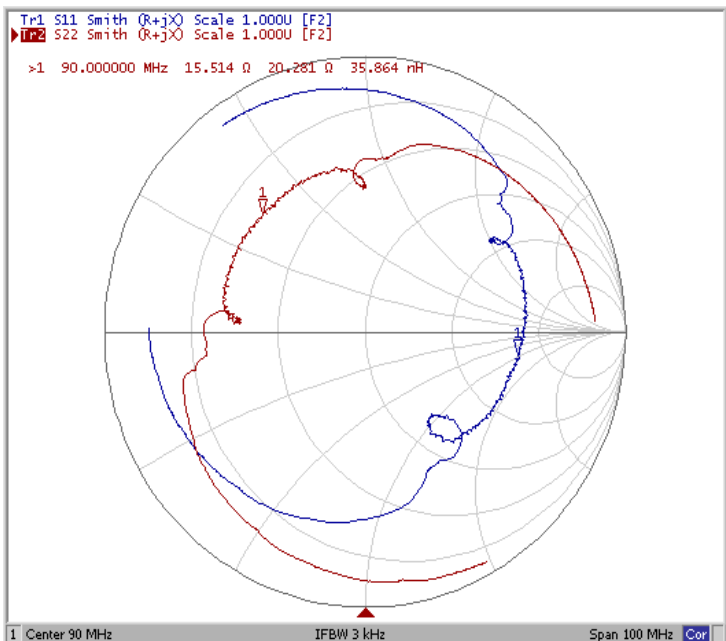
Ripple Variation Fo±11.50MHz



Group Delay Variation Fo±11.50MHz



Smith Chart



VSWR

