PRODUCT SPECIFICATION

REV A January 2011

Oscilent Controlled Document

Ordering Code / Part Number	Product Description
821-IF160.0M-20A	160.0MHz IF SAW Filter 19.3 MHz Bandwidth

Specification Contents

- Mechanical Dimensions
- Test Circuit
- Maximum Ratings
- Electrical Specification
- Frequency Response
- Smith Chart
- VSWR

Notes

- Electrostatic Sensitive Device (ESD)
- Avoid excessive ultrasonic exposure
- Solderability compatible with JEDEC J-STD-020C Pb-free process, 260°C peak reflow temperature
- This product complies with EU directive 2002/95/EC (RoHS compliance)

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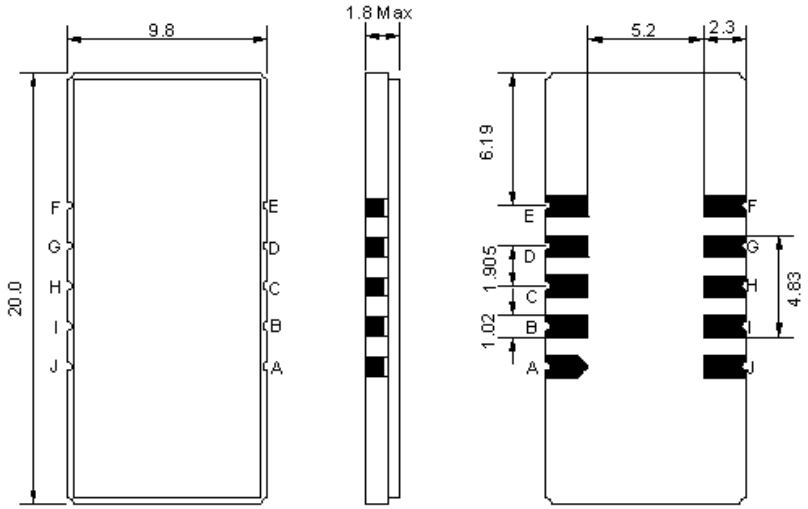
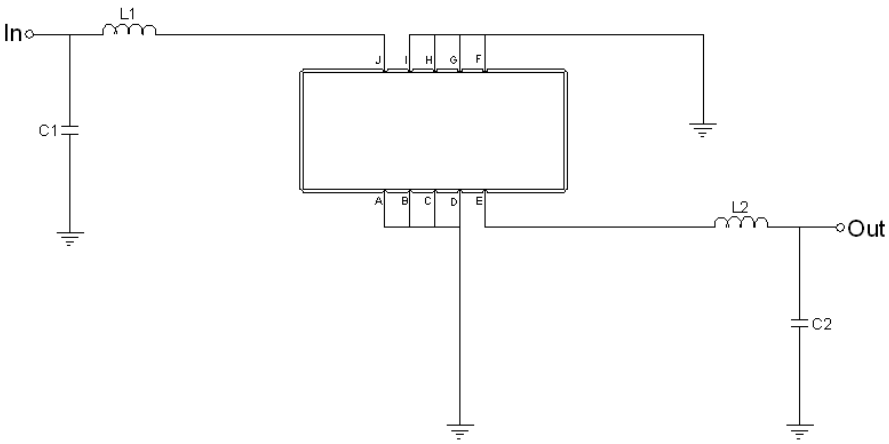
Mechanical Dimensions (mm)



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

Test Circuit



Test Fixture & Values	
Input	L1=10 nH, C1=13 pF
Output	L2=12 nH, C2=13 pF
Source/Load Impedance	50 Ω

Maximum Ratings

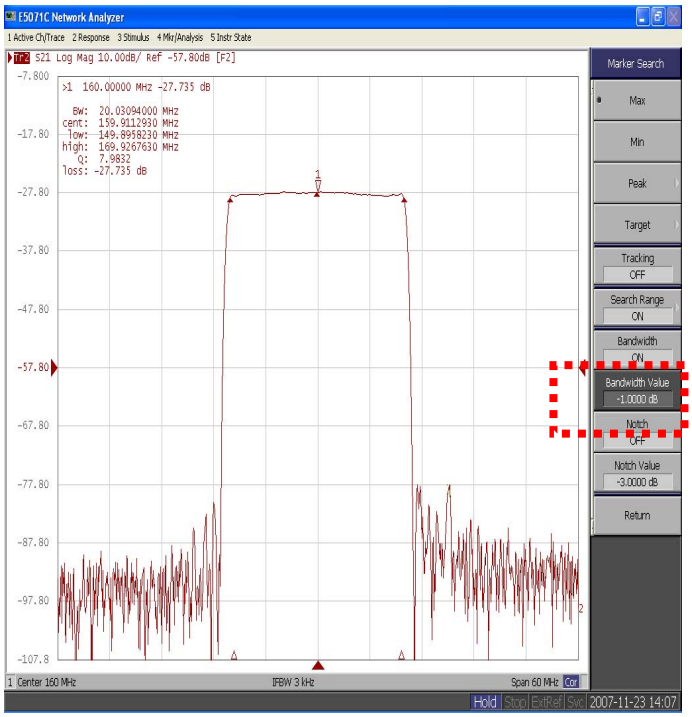
Parameters Description	Unit	Minimum	Typical	Maximum
Operating Temperature Range	°C	-30	-	+80
Storage Temperature Range	°C	-40	-	+85
Maximum DC Voltage	V	-	-	10
Maximum Input Power	dBm	-	-	10
Source Impedance (single ended)(1)	Ω	-	50	-
Load Impedance (single ended)(1)	Ω	-	50	-

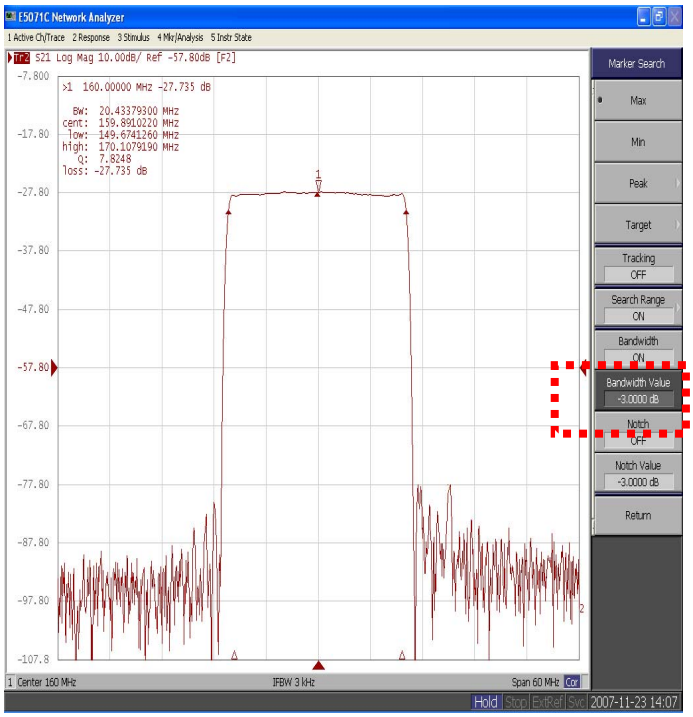
Notes: With Matching Network (Ref. Testing Environment Circuit as shown above).
Those impedances could be modified with different impedance values and/or structures, if necessary.

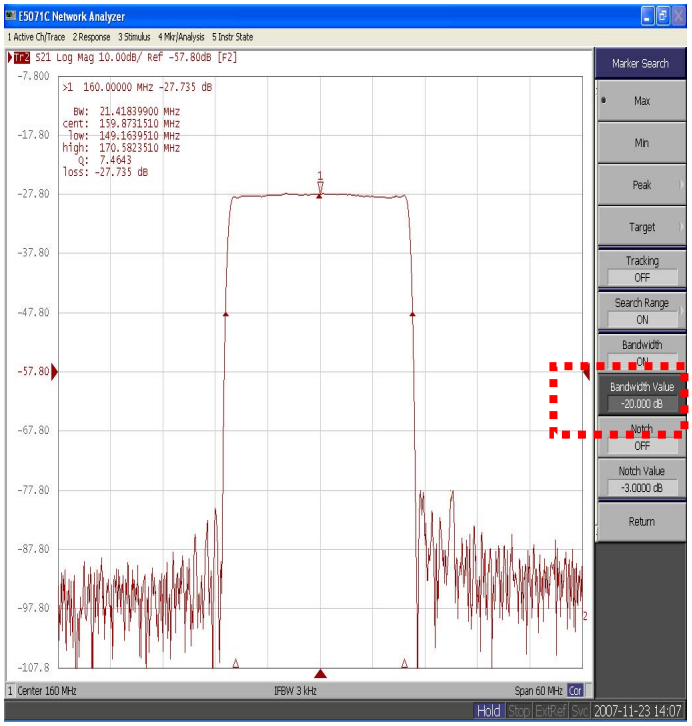
Electrical Specification

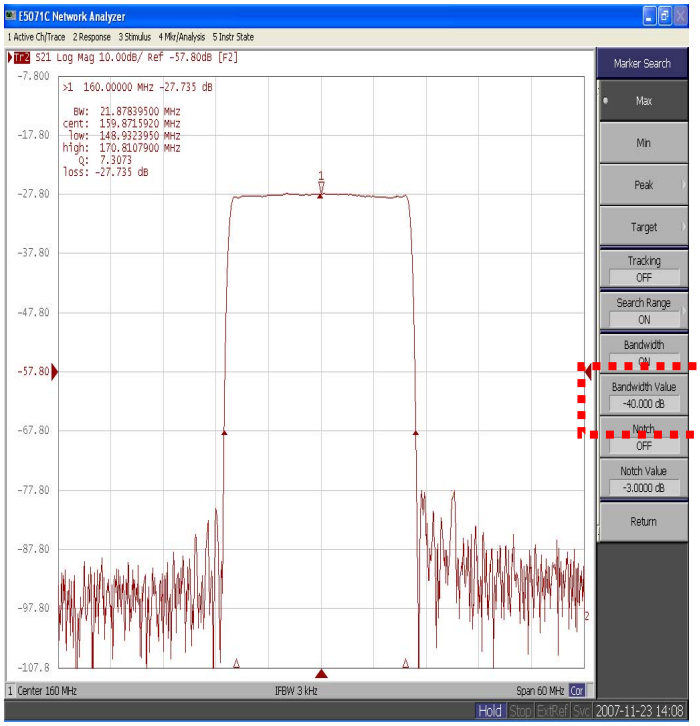
Parameters Description	Unit	Minimum	Typical	Maximum
Center Frequency (Fo)	MHz	-	160.0	-
Insertion Loss at Fo	dB	-	27.7	29.5
Amplitude Ripple Variation at Fo ± 9.65 MHz	dB_{p-p}	-	0.75	-
Group Delay Variation at Fo ± 9.65 MHz	nsec	-	30	80
Absolute Delay at Fo	µsec	-	2.09	-
Temperature Coefficient	ppm/°C	-	-72	-
Bandwidth at –1.0 dB	MHz	-	20.03	-
Bandwidth at –3.0 dB	MHz	-	20.43	-
Bandwidth at –20.0 dB	MHz	-	21.42	-
Bandwidth at –40.0 dB	MHz	-	21.87	-
Relative Attenuation				
Lower Sidelobe	dB	-	50	-
Upper Sidelobe	dB	-	50	-

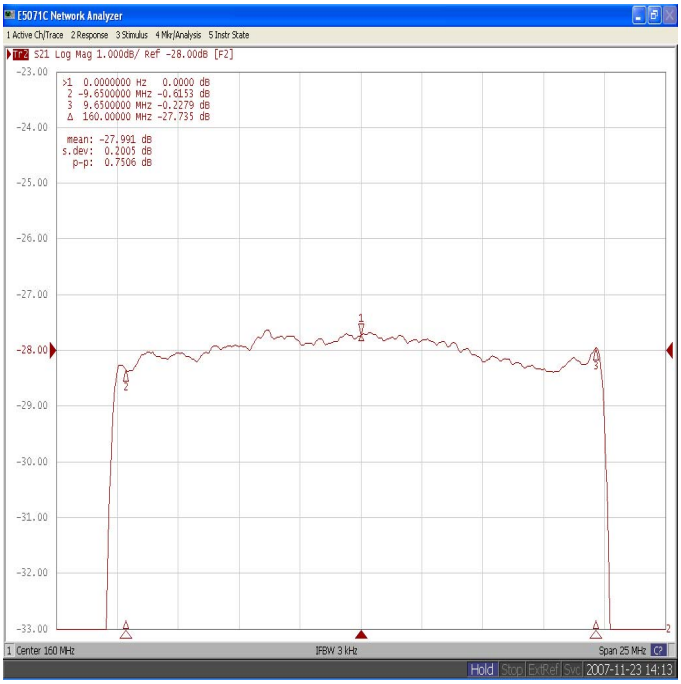
Frequency Response

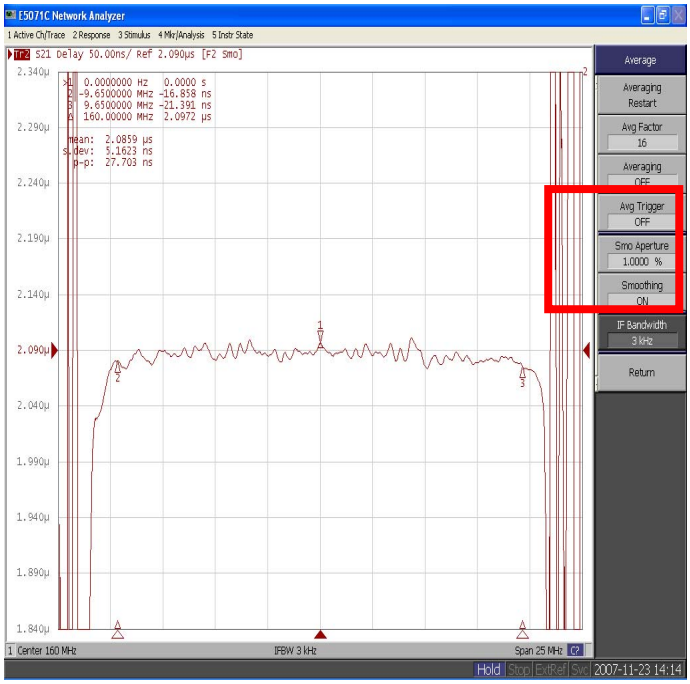




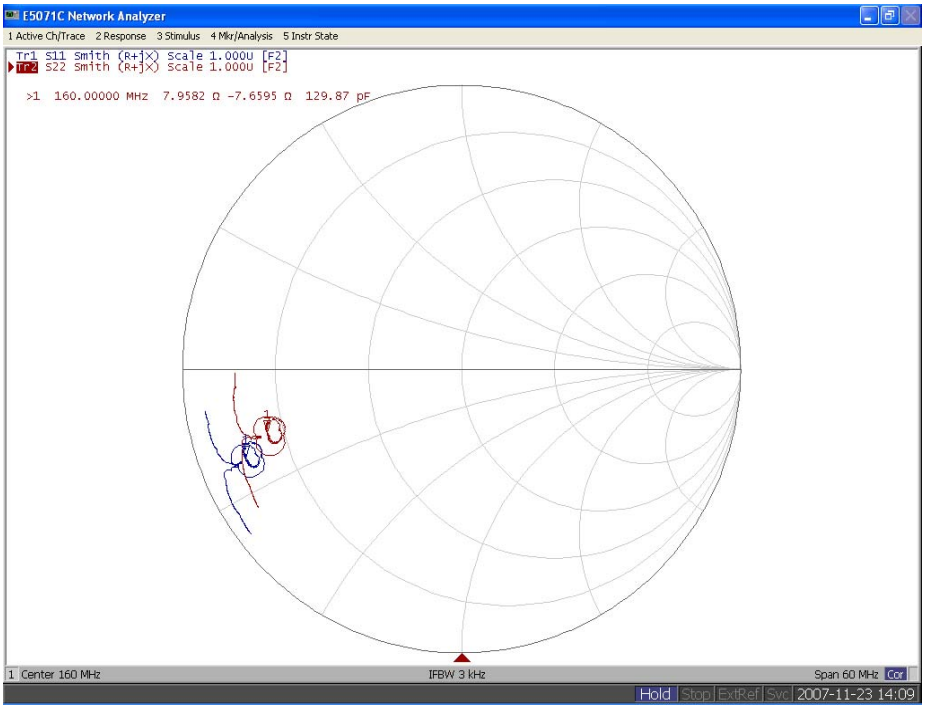




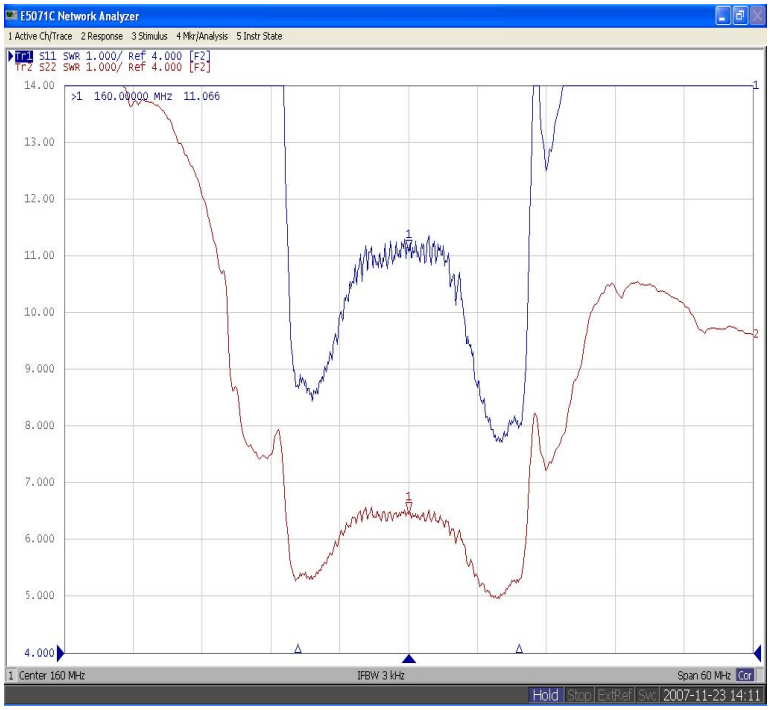

E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr2 S21 Log Mag 1.000dB/ Ref -28.00dB [F2]
>1 0.0000000 Hz 0.0000 dB
2 -9.6500000 MHz -0.6153 dB
3 9.6500000 MHz -0.2279 dB
Δ 160.00000 MHz -27.735 dB
mean: -27.991 dB
s.dev: 0.2005 dB
p-p: 0.7506 dB
1 Center 160 MHz
IFBW 3 kHz
Span 25 MHz
Hold Stop ExtRef Svc 2007-11-23 14:13


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr2 S21 Delay 50.00ns/ Ref 2.090µs [F2 Smo]
>1 0.0000000 Hz 0.0000 s
2 -9.6500000 MHz -16.858 ns
3 9.6500000 MHz -21.391 ns
Δ 160.00000 MHz 2.0972 µs
mean: 2.0859 µs
s.dev: 5.1623 ns
p-p: 27.703 ns
Average
Averaging Restart
Avg Factor 16
Averaging OFF
Avg Trigger OFF
Smo Aperture 1.0000 %
Smoothing ON
IF Bandwidth 3 kHz
Return
1 Center 160 MHz
IFBW 3 kHz
Span 25 MHz
Hold Stop ExtRef Svc 2007-11-23 14:14

Smith Chart


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S11 Smith (R+jX) Scale 1.000U [F2]
Tr2 S22 Smith (R+jX) Scale 1.000U [F2]
>1 160.00000 MHz 7.9582 Ω -7.6595 Ω 129.87 pF
1 Center 160 MHz
IFBW 3 kHz
Span 60 MHz
Hold Stop ExtRef Svc 2007-11-23 14:09

VSWR


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Tr1 S11 SWR 1.000/ Ref 4.000 [F2]
Tr2 S22 SWR 1.000/ Ref 4.000 [F2]
>1 160.00000 MHz 11.066
14.00
13.00
12.00
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
1 Center 160 MHz
IFBW 3 kHz
Span 60 MHz
Hold
2007-11-23 14:11