

RS MICROWAVE COMPANY, INC.

22 Park Place - P.O. Box 273 - Butler, NJ 07405-0273

PHONE: 973-492-1207 - FAX: 973-492-2471 - INTERNET: <http://www.rsmicro.com> - EMAIL: queries@rsmicro.com

ABOUT THE COMPANY

Our company was founded in January 1981 with the mission of designing and producing high quality RF and Microwave filters. Dr. Richard V. Snyder, founder of RS, had developed and wanted to pursue filter technology unavailable and unaggressively pursued at that time. Specifically, he developed an approach to implementation of filter networks involving the use of evanescent modes of propagation that offered a good combination of size and insertion loss, not achievable with any other method current at the time. Since that time the Company has also developed unique lumped element networks with symmetrical response, dielectric resonator designs (**1 MHz bandwidth with a center frequency of 8 GHz!**), compact high power, low-loss notch filters, the smallest possible multiplexers, filters with wide passbands and wide stopbands combined with high power capability (**1-4 GHz passband, stopband to 20 GHz, 1 KW operation**), blind-mate filters (**as small as drop-in designs**) for high isolation applications, Bessel-Thompson world standard filters (**our OR series**) for use in optical communication systems, and a host of other unique products for system application including: in-line bandpass filters with finite transmission zeroes, reduced size high power filters, wide band high power filters, and other developments. We have developed a series of unique multimode filters employing both waveguide and dielectric resonators, in a configuration allowing for pseudo-elliptic responses but with in-line physical configuration, coupled with high power operation and wide stopbands.

We are the major supplier of filters for the world-wide **LINK-16 programs**, a high power spread spectrum military communication link which interfaces with **TACAN, IFF**, other data links, and other navigation and communication systems. We are the largest supplier of high power notch filters in the world. We have been and/or continue to be a major supplier on **MIDS, JTIDS, ASPJ, AESA, ALQ-172, LAMPS, ALR67 (ASR), Rapport III, SLQ32, GPN, SPS- 48, GBR, AMRAAM, SM-2, AEGIS**, etc. Our customers include most of these major system manufacturers in the world.

RS Microwave utilizes the latest computer-aided design techniques with standardized mechanical approaches to minimize size, cost, and delivery time while optimizing performance. **The Company is approved to the AS9100 Quality System.** All of our assembly and tests are performed in accordance with MIL-STD-2000 or 2000A. Our Assemblers are certified to J-STD-1000. Our manufacturing system is **LEAN**. We perform environmental testing on the majority of our products, including high power, temperature-altitude and leak resistance. Our filters and multiplexers are on many of the U.S. government QPL or NSN lists as standard approved items. Our filter products have been under the sea, on the ground, in tanks, in fighters, bombers, missiles, and satellites. We are **considered "best of breed"** in small size or high power.

RS MICROWAVE Products

in brief...

Filters - 1 MHz to 50 GHz

High Power
Low Loss
Blind-Mate
Drop In
Dielectric Resonator
Notch Filters
Coax or Waveguide

Multiplexers - 1 MHz to 40 GHz

Contiguous
Non - Contiguous
Switched

Subsystems - 1 MHz to 40 GHz

Combinations, including:

Filters, Circulators, Amplifiers and Switches

**Military and Commercial Components
for
Communications, Radar,
ECM, and Cellular**

Fast Response to Tough Requirements

High or Low Rate Production

AS9100 Quality System

Certified to J-STD-1000

**High Quality Manufacturing
Compliant with MIL-STD-2000**

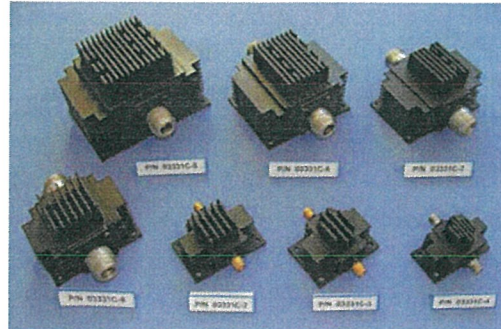
LEAN Manufacturing

RS MICROWAVE COMPANY, INC

*"We Duplicate what We Simulate."*TM

New Product Announcement

P/N 03331C - () SERIES Bandpass Ridgeline Evanescent Mode Filters



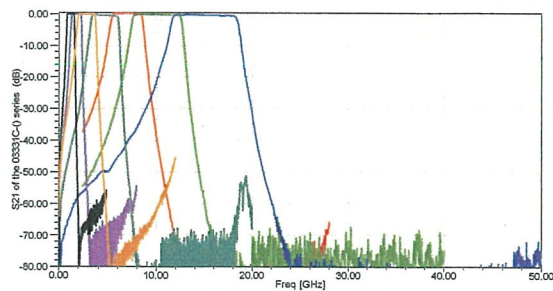
P/N 03331C series comprises a set of high power low loss filters with wide passband and wide stopband. The filters' passbands are contiguous to each other so as to cover a wide frequency spectrum ranging from 900 MHz up to 18 GHz. Each filter has 40-50% fractional bandwidth and provides more than 40 dB rejection for the second and third harmonics of the passband frequencies. Of particular interest is the performance of the highest frequency filter, namely 03331C-4: this extremely compact filter can handle 150 W CW of power in a passband between 12 and 18 GHz, while providing more than 40 dB rejection from 24 GHz to 54 GHz. Such performance is achieved by employing the latest advanced design techniques developed at RS Microwave.

Specifications

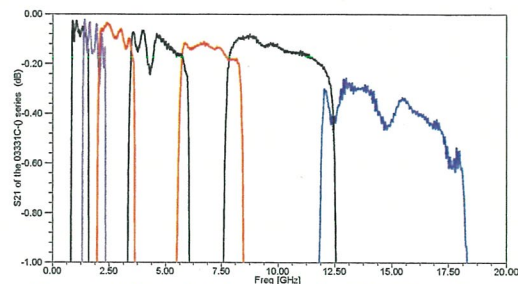
	Pass Band (GHz)	Power Handling (W CW)	Stop Band -40dBc (GHz)
03331C-5	0.9-1.5	600	2.0 - 4.5
03331C-6	1.4 - 2.25	600	3.0 - 6.75
03331C-7	2.15 - 3.5	400	4.5 - 10.5
03331C-8	3.5 - 5.8	400	7.0 - 17.4
03331C-2	5.8 - 8.0	150	11.6 - 24.0
03331C-3	8.0 - 12.0	150	16.0 - 36.0
03331C-4	12.0 - 18.0	150	24.0 - 54.0

- In Band Insertion Loss: < 0.3 dB (03331C-5,-6,-7,-8,-2,-3), < 0.65 dB (03331C-4)
- System Impedance: 50 ohm
- Input / Output: N-type (03331C-5,-6,-7,-8), SMA (03331C-2,-3,-4)
- Operating Temp: -46° to +50°C
- Non-Operating Temp: -51° to +71°C
- Shock: Mil-Std 901D Grade A
- Vibration: Mil-Std 167-1A

TEST DATA



Measured broadband S_{21} for the 03331C(-) filters
(responses are superimposed)



Measured insertion loss for the 03331C(-) filters
(responses are superimposed)

RS Microwave Company, Inc.

22 Park Place
P.O. Box 273
Butler, NJ 07405 USA
9/8/2012

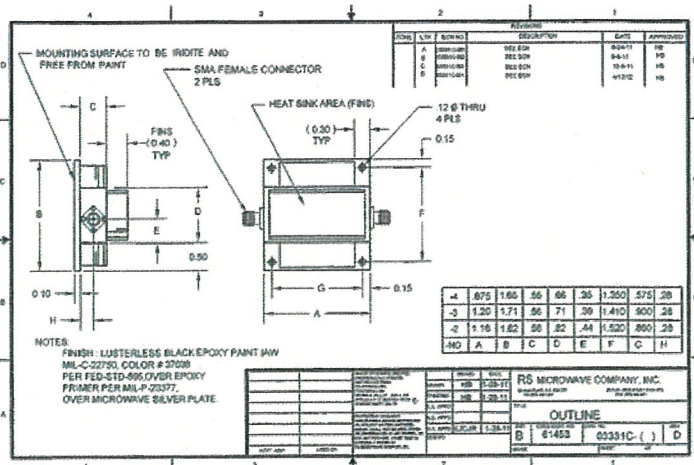
*"We Duplicate what We Simulate."*TM

PHONE: 973-492-1207 FAX: 973-492-2471

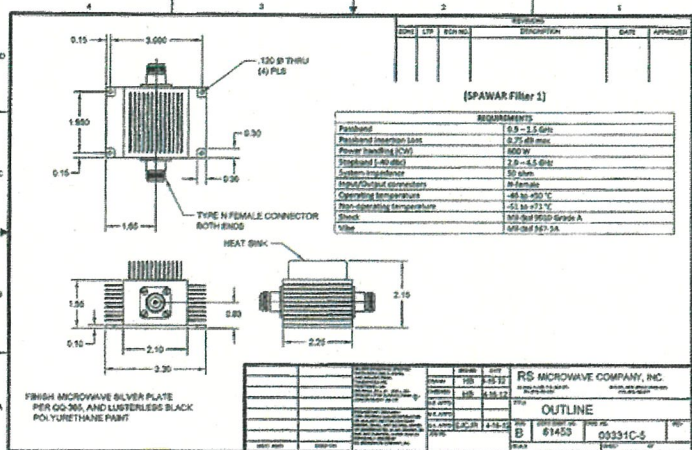
INTERNET: www.rsmicro.com

EMAIL: queries@rsmicro.com

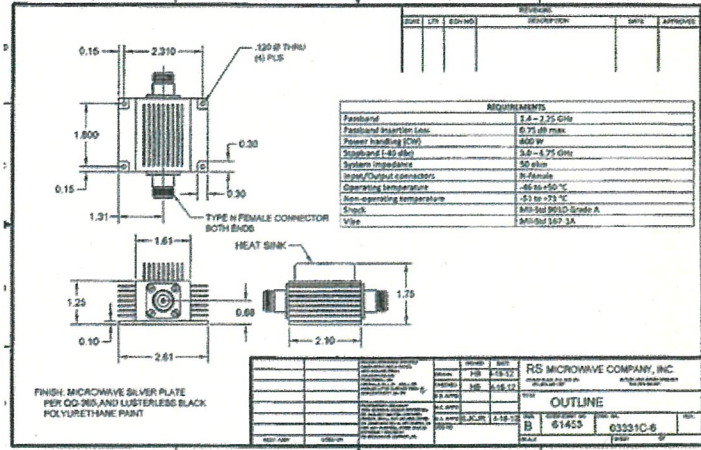
New Product Announcement (Continued)



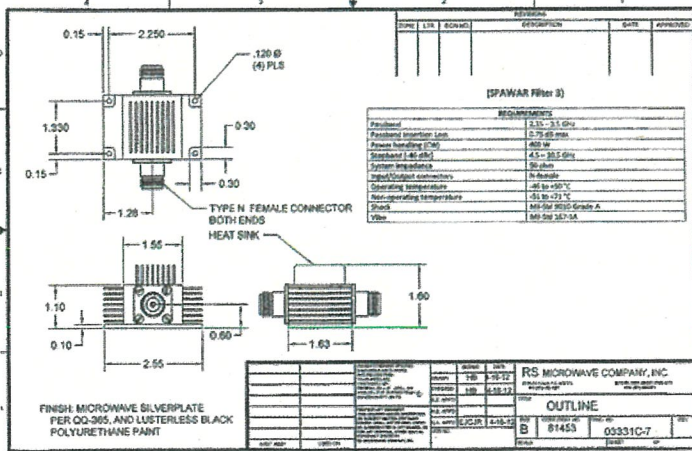
Outline Drawing 03331C-(2-4)



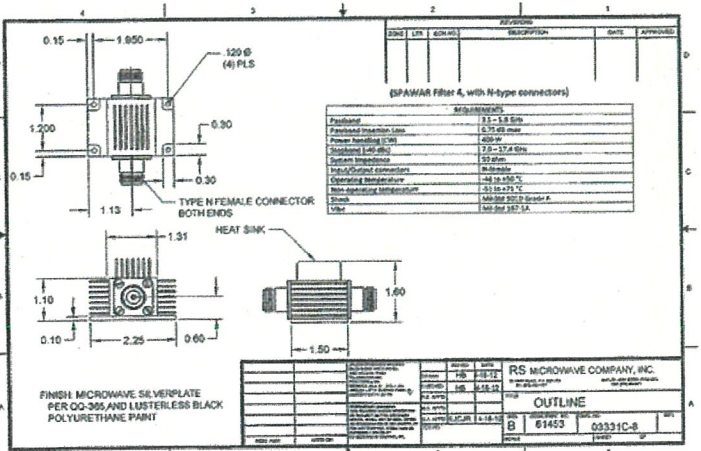
Outline Drawing 03331C-5



Outline Drawing 03331C-6



Outline Drawing 03331C-7



Outline Drawing 03331C-8

RS Microwave Company, Inc.
 22 Park Place
 P.O. Box 273
 Butler, NJ 07405 USA
 9/8/2012

"We Duplicate what We Simulate."™

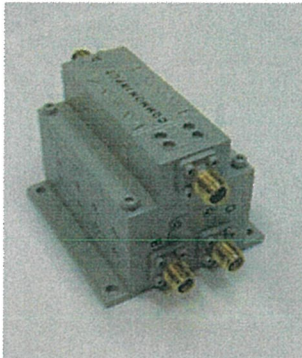
PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com

RS MICROWAVE COMPANY, INC

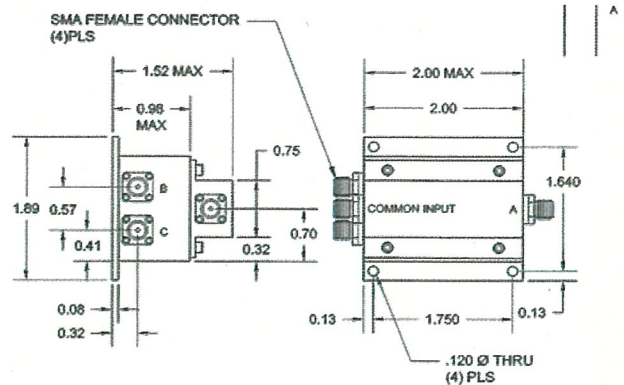
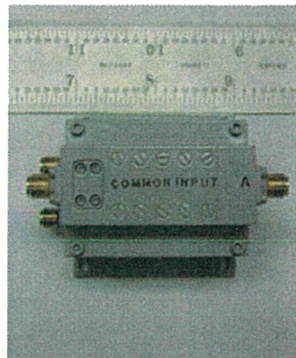
*"We Duplicate what We Simulate."*TM

New Product Announcement

P/N 20521CT



P/N 20521CT



OUTLINE DRAWING

Low Loss Triplexer

P/N 20521CTCD is a very compact and low loss triplexer suitable for data-link applications in L-, S-, and C-band. The unit involves pseudoelliptic filters, thus yielding high channel isolation while still achieving maximum passband width for optimum insertion loss performance. The spurious free stopband of this unit extends up to 16 GHz, so as to provide high isolation to other commonly used frequency channels in Ku-band (see our P/N 20441CD).

Specifications

Channel	Parameter	Unit	Min	Max
A	Passband Freq	MHz	1625	2500
	Passband IL	dB		1
	Rejection 4400-15350 MHz	dB	80	
B	Passband Freq	MHz	4400	4950
	Passband IL	dB		1.25 (1 typ.)
	Rejection 1625 – 2500 MHz	dB	80	
	Rejection 5250 – 15350 MHz	dB	80	
C	Passband Freq	GHz	5250	5850
	Passband IL	dB		1.25 (1 typ.)
	Rejection 1625 – 4950 MHz	dB	80	
	Rejection 7000 – 15350 MHz	dB	80	
A x B x C	Isolation 1625 - 2500 MHz	dB	80	
	Isolation 4400 - 4950 MHz	dB	80	
	Isolation 5250 – 5850 MHz	dB	80	
	Operating Temperature	°C	-55	+85

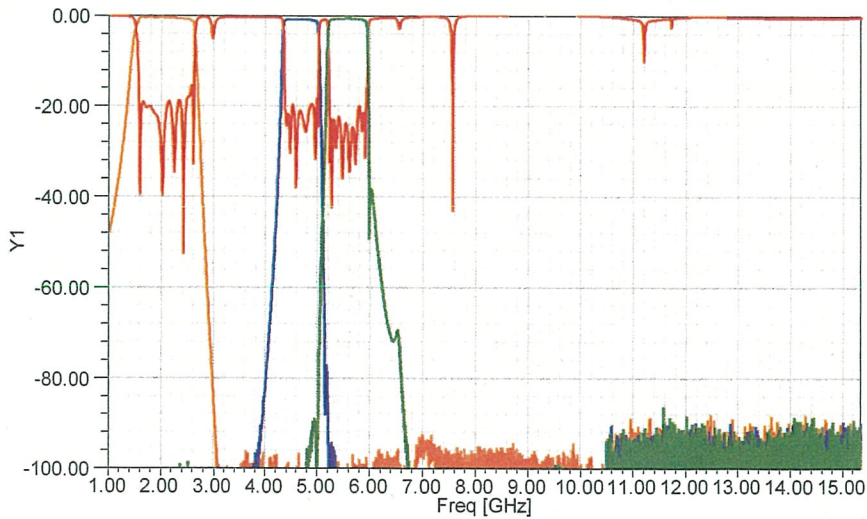
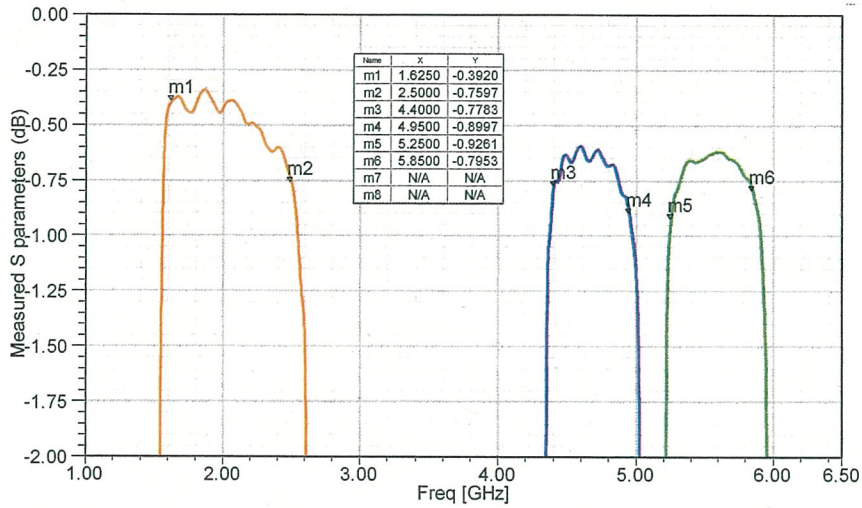
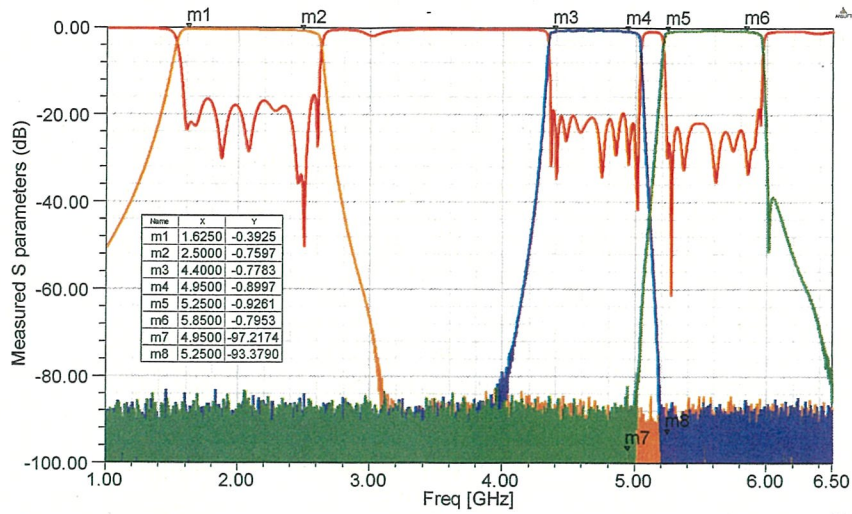
RS Microwave Company, Inc.
22 Park Place
P.O. Box 273
Butler, NJ 07405 USA
10/6/2012

*"We Duplicate what We Simulate."*TM

PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com

New Product Announcement (Continued)

TEST DATA



RS Microwave Company, Inc.
 22 Park Place
 P.O. Box 273
 Butler, NJ 07405 USA
 10/6/2012

"We Duplicate what We Simulate."[™]

PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com

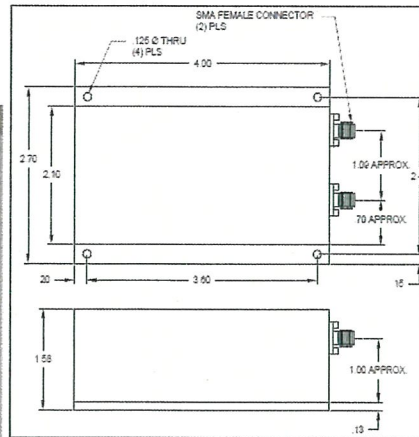
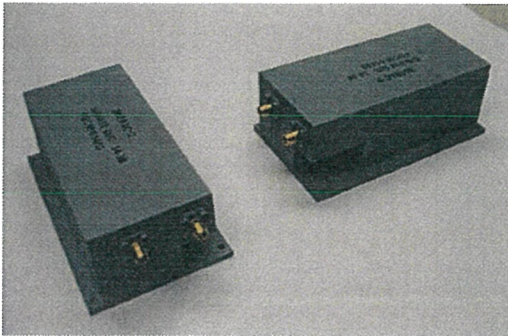
RS MICROWAVE COMPANY, INC

*"We Duplicate what We Simulate."*TM

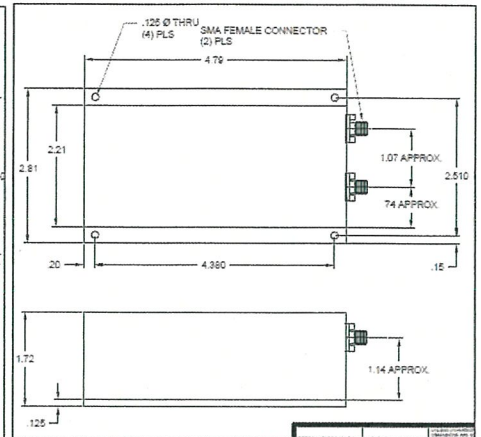
New Product Announcement

P/N 30281C-1, -2

OUTLINE DRAWINGS



30281C-1



30281C-2

Passband Filter

P/N 20521CTCD are P/N 30281C-1 and 30281C-2 are unique K- and Ku-band filters with extremely narrow passband (less than 0.025%) and wide spurious free stopband (up to 50 GHz). Such a distinctive performance is accomplished by properly combining overmoded cavities with single-mode and evanescent mode cavities. RS Microwave manufacturing experience and technological expedients are crucial to obtain excellent mechanical and thermal stability for these innovative products implementing such extreme filtering functions.

Specifications

	30281C-1	30281C-2
Center Frequency (F0)	18.600 GHz	15.350 GHz
Passband	F0 ± 0.0002 GHz	F0 ± 0.0002 GHz
Passband Insertion Loss	≤ 8 dB (6.5 dB typ.)	≤ 8 dB (5.5 dB typ.)
Passband Return Loss	≥ 15 dB	≥ 15 dB
Rejection Loss at		
F0 ± 0.005 GHz	≥ 5 dBc	≥ 5 dBc
F0 ± 0.010 GHz	≥ 20 dBc	≥ 25 dBc
F0 ± 0.100 GHz (up to 50 GHz)	≥ 50 dBc	≥ 50 dBc
Operating Temperature	-20 to +65 °C	-20 to +65 °C

RS Microwave Company, Inc.
22 Park Place
P.O. Box 273
Butler, NJ 07405 USA
9/25/2014

*"We Duplicate what We Simulate."*TM

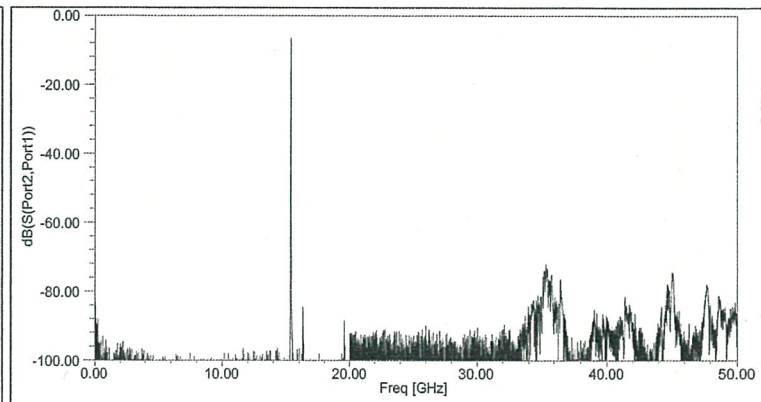
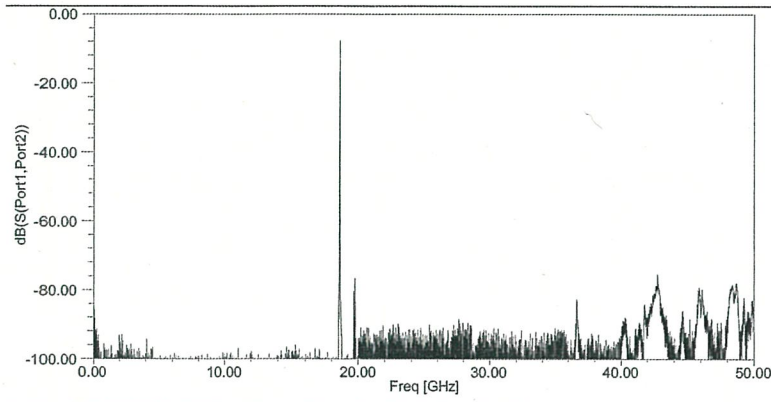
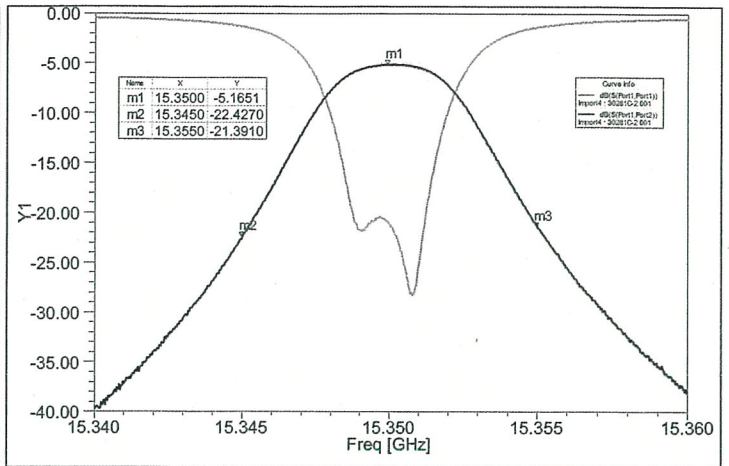
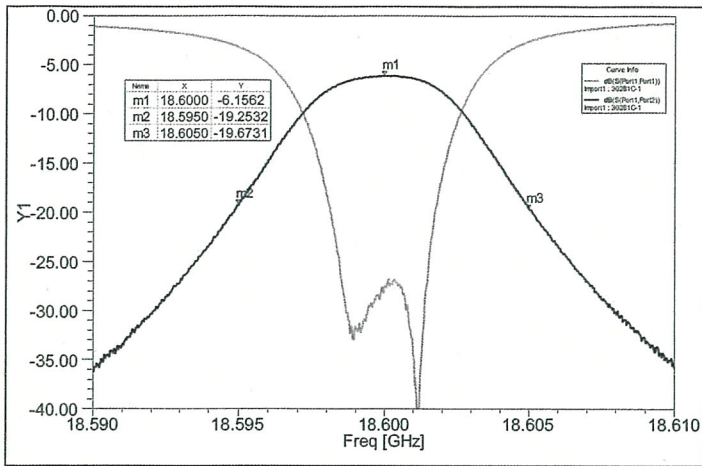
PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com

New Product Announcement (Continued)

TEST DATA

30281C-1

30281C-2



RS Microwave Company, Inc.
 22 Park Place
 P.O. Box 273
 Butler, NJ 07405 USA
 9/25/2014

*"We Duplicate what We Simulate."*TM

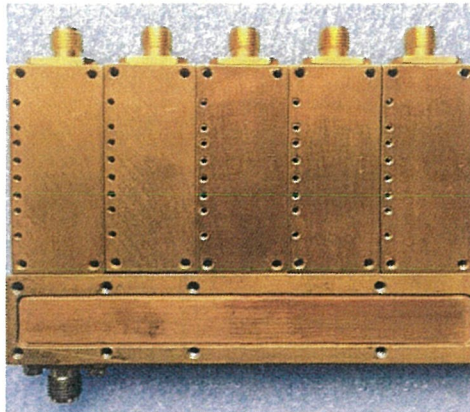
PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com

RS MICROWAVE COMPANY, INC.

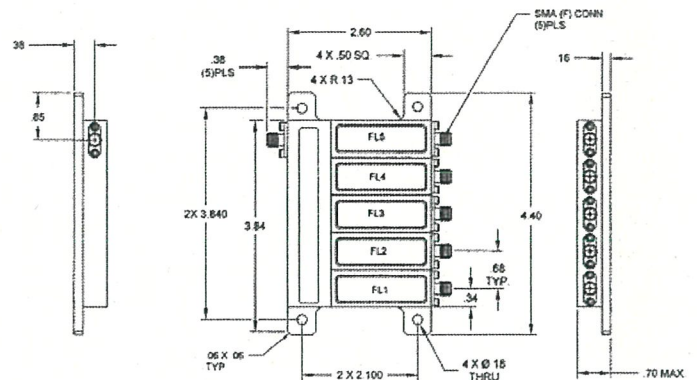
"We Duplicate what We Simulate."™

New Product Announcement

P/N 53681C



Outline Drawing



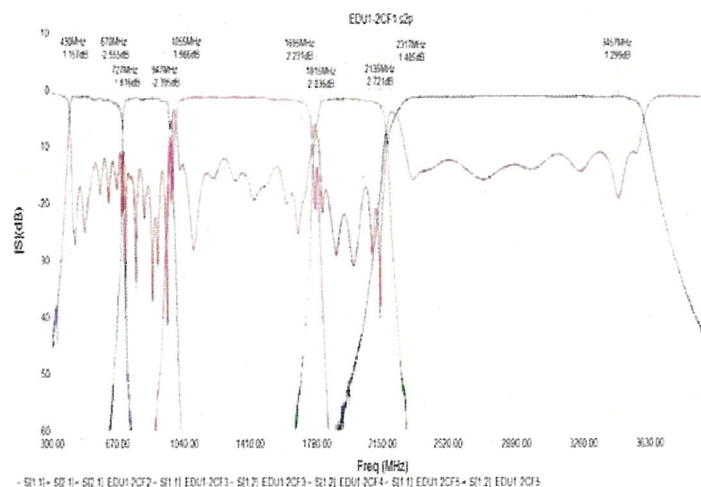
Multiplexer

P/N 53681C is a 5-channel multiplexer designed and built for satellite application. Rugged and light weight, it has 5 passbands covering UHF to S-band - a 10:1 frequency range; but, the concept is adaptable to applications allowing for additional channels of differing widths. The design combines evanescent mode filters and high Q-factor lumped components into a pseudo-elliptic complementary combining network, resulting in low-loss/high-isolation performance with wide, spurious-free stop bands and high power capability.

SPECIFICATIONS

Channel	Parameter	Limit	Min	Max
1	Passband Freq	MHz	430	670
2	Passband Freq	MHz	727.5	947.5
3	Passband Freq	MHz	1055	1695
4	Passband Freq	MHz	1815	2135
5	Passband Freq	MHz	2317.5	3457.5
1 - 5	Passband IL	dB		3.0
	Passband RL	dB	9.5	
	Rejection	dBc	35	
	Amplitude Flatness	dB p-p		0.5
	Ampl Flat Stability	dB p-p		0.2
	Phase Linearity	Deg p-p		8
	Upper Stop Band	GHz	12	
	Vibration	Grms		46.6
	Mech Shock/dur	G @ ms		50 @ 0.3ms
Operating Temp	Deg C	-55	+85	
	Input power	W		25

TEST DATA



RS Microwave Company, Inc.
 22 Park Place
 P.O. Box 273
 Butler, NJ 07405 USA
 8/20/2015

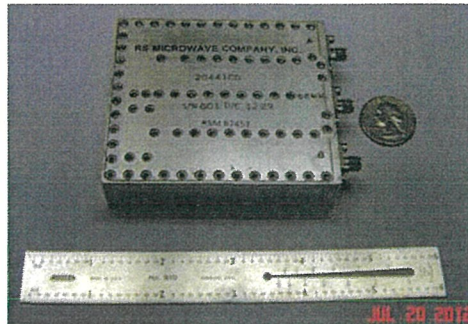
"We Duplicate what We Simulate."™

PHONE: 973-492-1207 FAX: 973-492-2471
 INTERNET: www.rsmicro.com
 EMAIL: queries@rsmicro.com

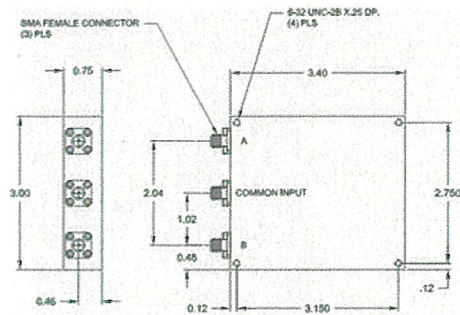
RS MICROWAVE COMPANY, INC.

*"We Duplicate what We Simulate."*TM

New Product Announcement



P/N 20441CD



OUTLINE DRAWING

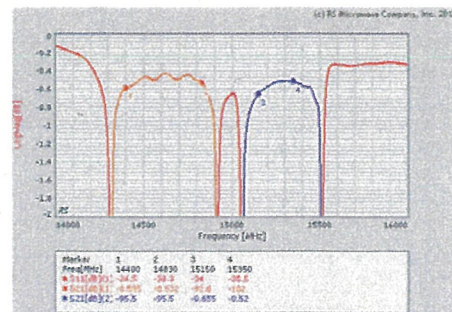
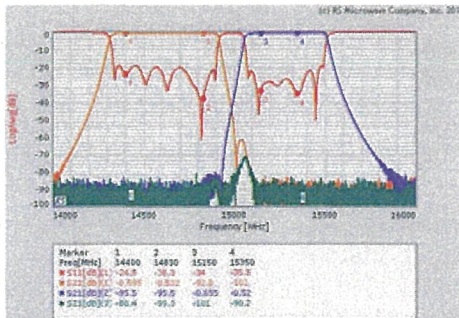
P/N 20441CD: Diplexer

PN 20441CD is a very low loss Ku-Band diplexer employing high Q-factor cavities. The diplexer response is pseudoelliptic, thus yielding high channel isolation while still achieving maximum passband width and superior insertion loss performance.

SPECIFICATIONS

Channel	Parameter	Unit	Min	Max
A	Passband Freq	GHz	15.15	15.35
	Passband IL	dB		1 (0.8 typ)
	Passband RL	dB	15 (18 typ)	
	Rejection 14.4 – 14.83 GHz	dB	80	
B	Passband Freq	GHz	14.40	14.83
	Passband IL	dB		1 (0.8 typ)
	Passband RL	dB	15 (18 typ)	
	Rejection 15.15 – 15.35 GHz	dB	80	
A x B	Isolation @ 15.15 -15.35 GHz	dB	80	
	14.40 -14.83 GHz	dB	80	
	Operating temperature	°C	-55	+85

TEST DATA



RS Microwave Company, Inc.
22 Park Place
P.O. Box 273
Butler, NJ 07405 USA
7/2012

*"We Duplicate what We Simulate."*TM

PHONE: 973-492-1207 FAX: 973-492-2471
INTERNET: www.rsmicro.com
EMAIL: queries@rsmicro.com