

Coaxial Low Pass Filter

SLP-21.4+

50Ω DC to 22 MHz

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W max.

Permanent damage may occur if any of these limits are exceeded.

Features

- good attenuation rate, 1.35 typ. 20dB/ 3dB BW ratio
- rugged shielded case
- other SLP models available with wide selection of cut-off frequencies

Applications

- lab use
- test equipment
- video equipment



Generic photo used for illustration purposes only

CASE STYLE: FF99

Connectors Model
SMA SLP-21.4+

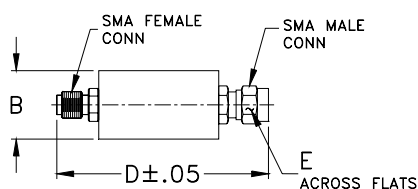
+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Low Pass Filter Electrical Specifications

PASSBAND (MHz)	fco (MHz) Nom.	STOPBAND (MHz)		VSWR (:1)	
		(loss > 20 dB)	(loss > 40 dB)	Passband Typ.	Stopband Typ.
DC-22	24.5	32-41	41-200	1.7	18

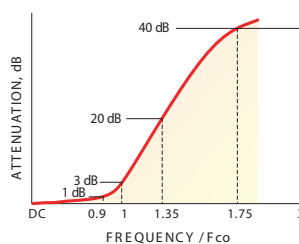
Outline Drawing



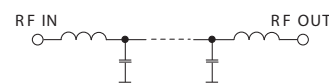
Outline Dimensions (inch/mm)

B	D	E	wt
.67	1.98	.312	grams
17.02	50.29	7.92	42.0

typical frequency response

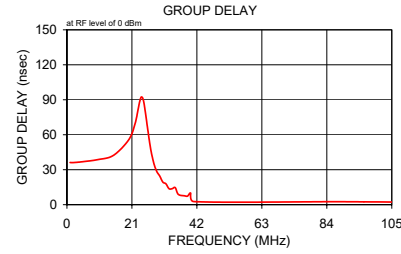
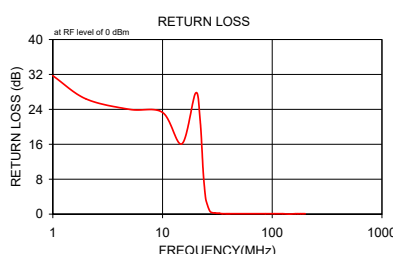


electrical schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)		Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
	\bar{x}	σ			
1.00	0.10	0.1	31.7	1.00	36.16
2.00	0.12	0.0	26.4	2.00	36.11
5.00	0.21	0.1	24.0	5.00	36.80
10.00	0.29	0.1	23.3	10.00	38.69
15.00	0.45	0.1	16.1	15.00	42.25
20.00	0.45	0.1	27.7	20.00	55.73
22.00	0.60	0.1	21.6	22.00	69.40
23.50	1.46	0.4	9.6	23.00	81.70
24.50	3.45	1.0	4.4	23.50	88.29
25.00	4.95	1.2	3.0	24.00	92.34
27.00	12.37	1.5	0.7	24.50	91.46
29.00	19.53	1.4	0.3	25.00	85.66
30.00	22.77	1.4	0.3	26.00	66.76
31.00	25.77	1.3	0.2	27.00	48.88
32.00	28.62	1.3	0.2	28.00	36.30
33.00	31.31	1.3	0.2	29.00	28.75
35.00	36.30	1.2	0.1	30.00	24.49
38.00	42.86	1.3	0.1	31.00	19.40
39.00	45.08	1.1	0.1	32.00	17.88
40.00	46.77	1.0	0.1	33.00	13.73
41.00	48.73	1.0	0.1	34.00	13.70
86.50	76.16	2.0	0.1	35.00	14.63
105.00	77.54	4.3	0.1	36.00	8.86
124.00	75.42	0.6	0.1	38.00	7.64
143.00	75.51	1.8	0.0	39.00	7.39
162.00	74.57	3.5	0.1	40.00	9.97
171.50	75.79	4.4	0.1	41.00	2.67
181.00	81.15	8.2	0.1	86.50	2.56
190.50	76.97	3.2	0.1	96.00	2.44
200.00	72.23	2.4	0.1	105.00	2.28



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCStore/terms.jsp



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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	FREQUENCY (MHz)	GROUP DELAY (nsec)
1.00	0.06	27.90	1.00	35.610
5.00	0.18	17.14	5.00	35.250
10.00	0.15	23.56	10.00	36.730
15.00	0.20	22.73	15.00	40.750
20.00	0.33	18.33	20.00	49.390
25.00	1.42	8.11	25.00	87.180
26.00	3.65	3.52	26.00	91.050
27.00	7.07	1.55	27.00	75.650
28.00	10.83	0.78	28.00	55.490
29.00	14.48	0.47	29.00	40.640
30.00	17.89	0.33	30.00	31.070
31.00	21.05	0.26	31.00	24.770
35.00	31.78	0.17	35.00	13.070
36.00	34.10	0.16	36.00	11.750
37.00	36.31	0.15	37.00	10.500
38.00	38.43	0.14	38.00	9.580
39.00	40.46	0.13	39.00	8.710
40.00	42.40	0.13	40.00	7.860
50.00	59.02	0.10	50.00	2.930
100.00	86.05	0.09	100.00	5.410
500.00	84.72	0.08	500.00	10.560
1000.00	60.12	0.04	1000.00	4.470
1500.00	61.98	0.24	1500.00	1.070
2000.00	54.40	2.19	2000.00	1.090
2500.00	71.22	0.59	2500.00	0.630
3000.00	71.28	1.01	3000.00	1.790
3500.00	56.34	2.94	3500.00	0.590
4000.00	53.25	4.48	4000.00	0.500
4500.00	84.66	6.27	4500.00	44.480
5000.00	50.18	2.66	5000.00	0.300
6000.00	41.57	2.46	6000.00	0.190
6500.00	35.08	2.54	6500.00	0.440
7000.00	39.38	3.56	7000.00	0.710
7500.00	58.83	4.07	7500.00	0.550
8000.00	55.96	3.06	8000.00	0.320
8500.00	53.89	3.50	8500.00	0.760
9000.00	45.81	3.12	9000.00	0.400
9500.00	34.53	2.38	9500.00	0.380
10000.00	26.01	2.47	10000.00	0.570

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060921
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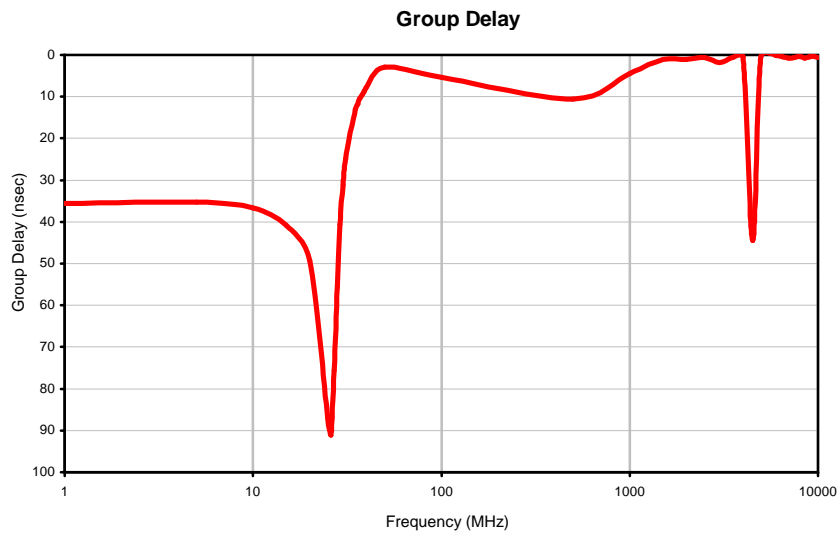
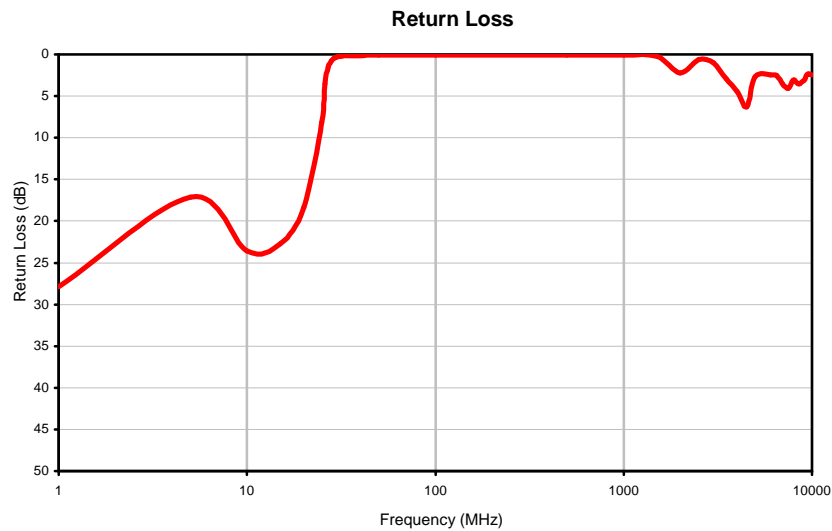
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Typical Performance Curves



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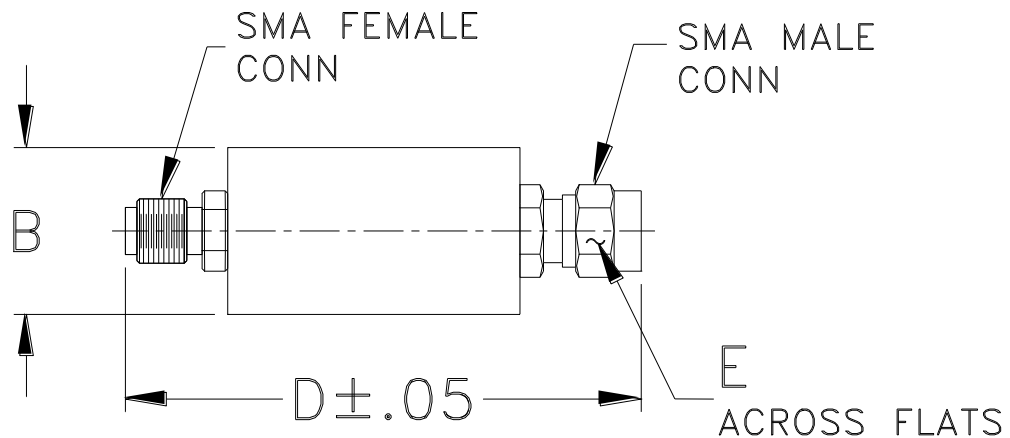


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Outline Dimensions

FF56
FF99



CASE #.	A	B	C	D	E	WT GRAMS
FF56	--	.46 (11.68)	--	1.70 (43.18)	.312 (7.92)	18.0
FF99	--	.70 (17.78)	--	1.98 (50.29)		42.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Notes:

1. Case material: Brass.
2. Case finish: Nickel plate.



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I