SUSPENDED SUBSTRATE STRIPLINE COAXIAL

Low Pass Filter

ZLSS-V32G+

50Ω DC to 32 GHz 2.4mm Female

KEY FEATURES

- Low Passband Insertion Loss, 1 dB Typ.
- High Rejection, 80 dB Typ.
- Wider Stopband up to 50 GHz



Generic photo used for illustration purposes only

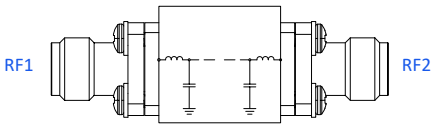
APPLICATIONS

- 5G Applications
- Aerospace and Defense

PRODUCT OVERVIEW

Mini-Circuits' Suspended Substrate Stripline filters offer low insertion loss combined with wide stopband, good power handling & temperature stability, small form factor with rugged build ideal for harsh operating environments making them an excellent choice for wideband instruments and systems like ECM, ECCM, ELINT and ultrabroadband receivers. Low pass, high pass, band pass, diplexer and multiplexer designs can be realized with this technology with passband, stopband up to 50GHz and stopband width greater than 6x cutoff frequency.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS AT +25°C

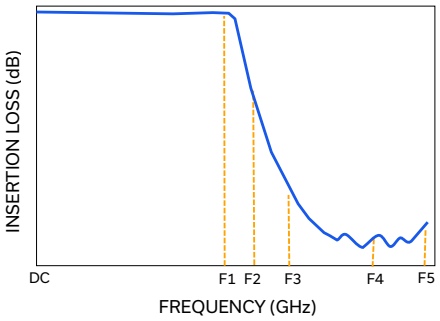
Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	DC-F1	DC - 32	—	1	2	dB
	Return Loss	DC-F1	DC - 32	—	9	—	dB
Stopband	Rejection	F2-F3	40.5 - 43.8	20	40	—	dB
		F3-F4	43.8 - 47.8	40	60	—	
		F4-F5	47.8 - 50	60	80	—	

ABSOLUTE MAXIMUM RATINGS[1]

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power[2]	1W @ 25°C

1. Permanent damage may occur if any of these limits are exceeded.
2. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE



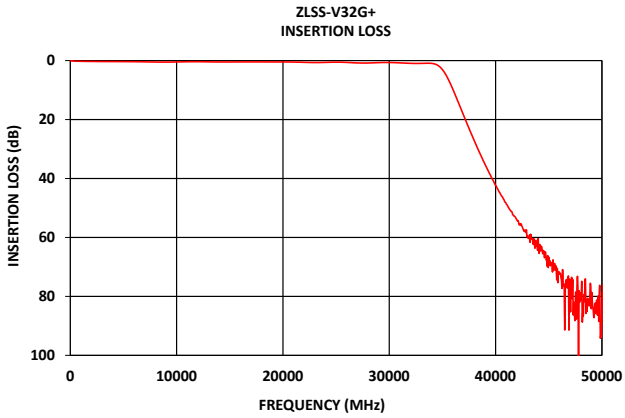
REV. A
ECO-031080
EDU4981
ZLSS-V32G+
MCINU
260904

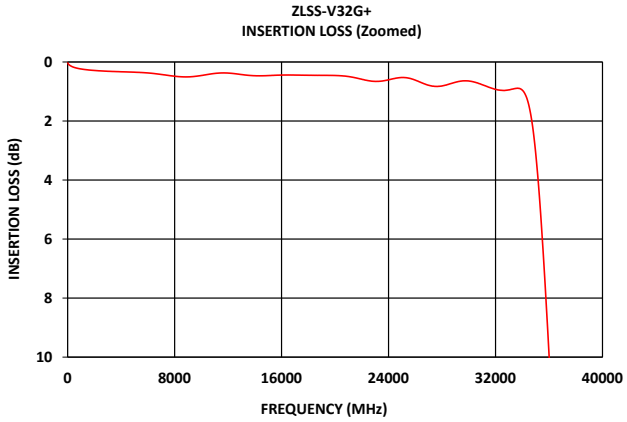
Low Pass Filter

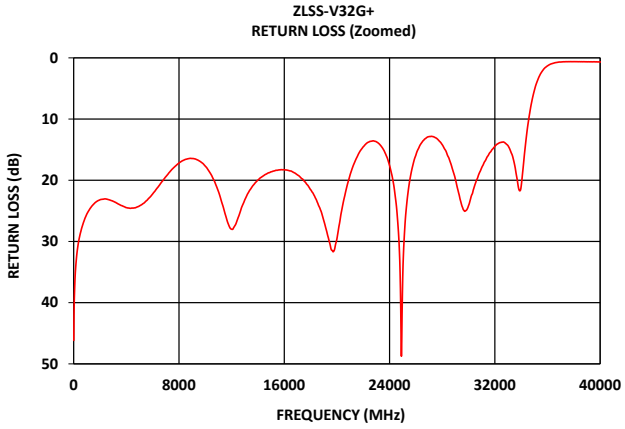
ZLSS-V32G+

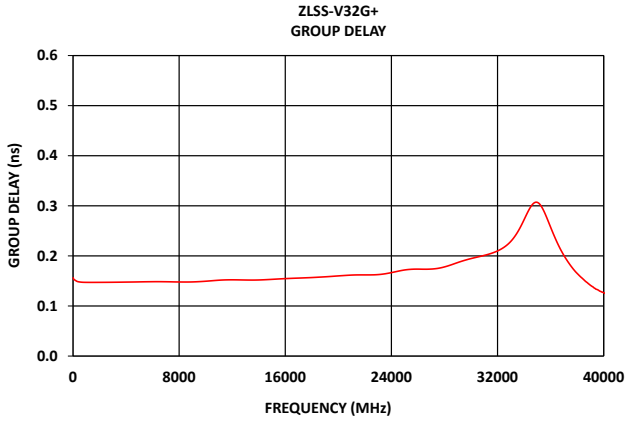
50Ω DC to 32 GHz 2.4mm Female

TYPICAL PERFORMANCE GRAPHS AT +25°C









Low Pass Filter

ZLSS-V32G+

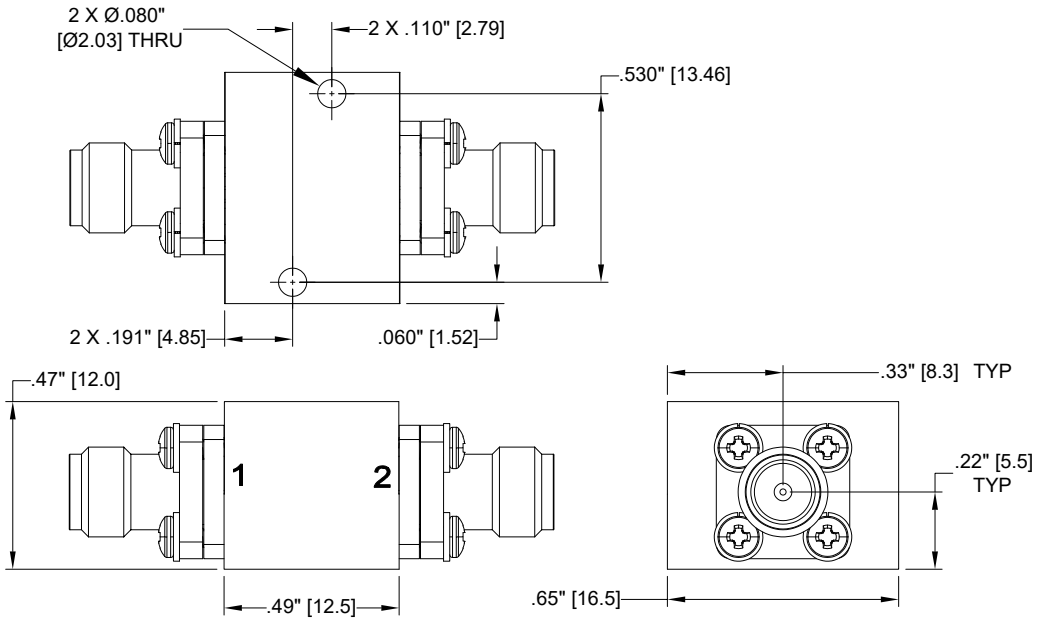
50Ω DC to 32 GHz 2.4mm Female

CONNECTOR DESCRIPTION

Function	Connector
RF1[3]	2.4mm Female
RF2[3]	2.4mm Female

3. This filter is bi-directional, RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

CASE STYLE DRAWING



Unit Weight: 28 Grams.
Dimensions are in inches (mm). Tolerances: 2 Pl. ± 0.06[1.5]; 3 Pl. ± 0.015[0.38]

PRODUCT MARKING*: ZLSS-V32G+

*Marking may contain other features or characters for internal lot control.

Low Pass Filter

ZLSS-V32G+

50Ω DC to 32 GHz 2.4mm Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
Case Style	BCF3893
RoHs Status	Compliant
Environmental Ratings	ENV001

NOTES

A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
C. 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/terms/viewterm.html

Suspended substrate stripline

Coaxial Low Pass Filter

ZLSS-V32G+

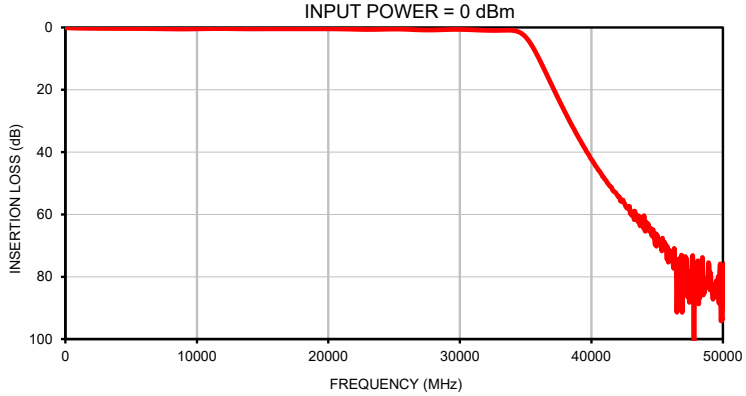
Typical Performance Data

FREQ.	Insertion Loss	Input Return Loss	Output Return Loss
(MHz)	(dB)	(dB)	(dB)
10	0.03	46.17	45.35
20	0.05	43.06	42.76
40	0.06	40.15	39.90
100	0.09	36.10	35.97
150	0.11	34.30	34.23
200	0.13	32.98	32.90
250	0.14	31.89	31.85
400	0.17	29.71	29.66
500	0.19	28.72	28.63
800	0.22	26.57	26.45
900	0.23	26.01	25.90
1000	0.24	25.52	25.42
1500	0.27	23.94	23.78
2000	0.29	23.19	23.04
2500	0.30	23.08	22.92
3000	0.31	23.44	23.24
3500	0.32	24.00	23.79
4000	0.33	24.47	24.23
4500	0.34	24.55	24.24
5000	0.35	24.18	23.65
5500	0.36	23.39	22.57
6000	0.37	22.24	21.25
6500	0.39	20.85	19.89
6700	0.40	20.25	19.33
7000	0.42	19.42	18.59
8000	0.48	17.19	16.82
9000	0.50	16.45	16.63
10000	0.46	17.69	18.72
15000	0.46	18.62	21.56
20000	0.46	29.58	24.10
29000	0.69	19.82	19.44
30000	0.64	24.14	26.38
31000	0.77	17.95	16.80
32000	0.93	14.45	13.94
32950	0.95	14.23	14.67
33500	0.90	17.46	17.92
33850	0.91	21.62	20.13
35000	3.07	5.33	5.29
35300	4.67	3.38	3.49
36000	9.90	1.30	1.56
36700	15.99	0.75	1.00
38000	27.23	0.62	0.71
38200	28.89	0.62	0.70
39700	40.23	0.65	0.62
40000	42.34	0.67	0.61
40500	45.62	0.68	0.61
41500	51.16	0.67	0.60
42000	54.06	0.68	0.59
42100	54.25	0.68	0.58
43000	59.51	0.65	0.54
43800	60.97	0.62	0.48
45000	66.62	0.50	0.38
45500	70.36	0.44	0.34
46000	72.14	0.37	0.31
46500	91.41	0.33	0.30
47000	79.12	0.33	0.30
47800	103.10	0.36	0.33
48000	78.97	0.38	0.35
49000	84.19	0.54	0.48
50000	84.78	0.73	0.85

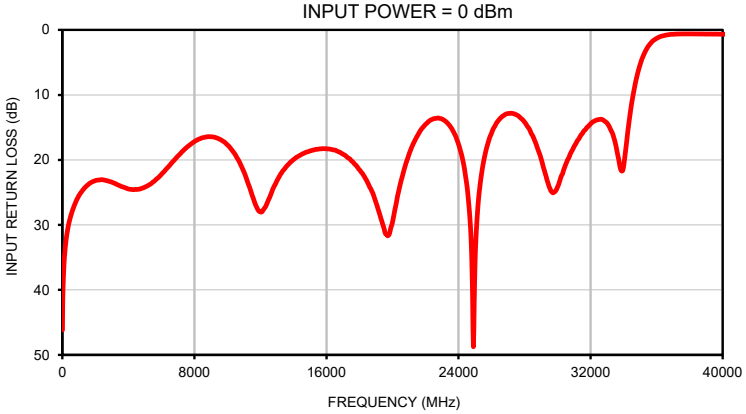
FREQ.	Group Delay
(MHz)	(ns)
10	0.16
20	0.16
40	0.15
50	0.15
100	0.15
500	0.15
1000	0.15
1500	0.15
2000	0.15
2500	0.15
3000	0.15
3500	0.15
4000	0.15
4500	0.15
5000	0.15
5500	0.15
6000	0.15
6500	0.15
7000	0.15
7500	0.15
8000	0.15
8500	0.15
9000	0.15
9500	0.15
10000	0.15
10500	0.15
11000	0.15
11500	0.15
12000	0.15
12500	0.15
13000	0.15
13500	0.15
14000	0.15
14500	0.15
15000	0.15
15500	0.15
16000	0.15
16500	0.16
17000	0.16
17500	0.16
18000	0.16
18500	0.16
19000	0.16
19500	0.16
20000	0.16
20500	0.16
21000	0.16
22000	0.16
23000	0.16
24000	0.17
25000	0.17
26000	0.17
27000	0.17
28000	0.18
29000	0.19
30000	0.19
30500	0.20
31000	0.20
31500	0.20
32000	0.21

Typical Performance Curves

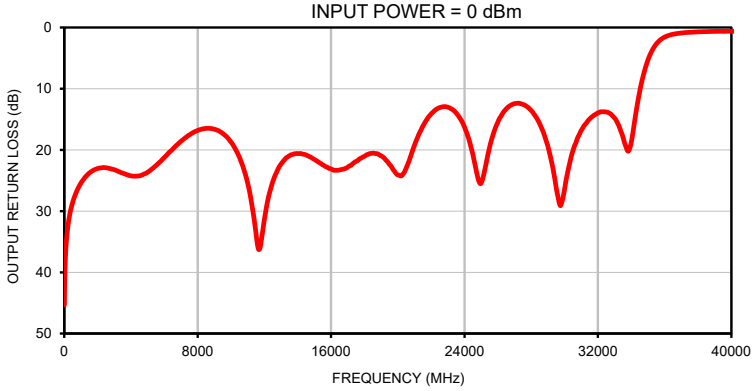
INSERTION LOSS
INPUT POWER = 0 dBm



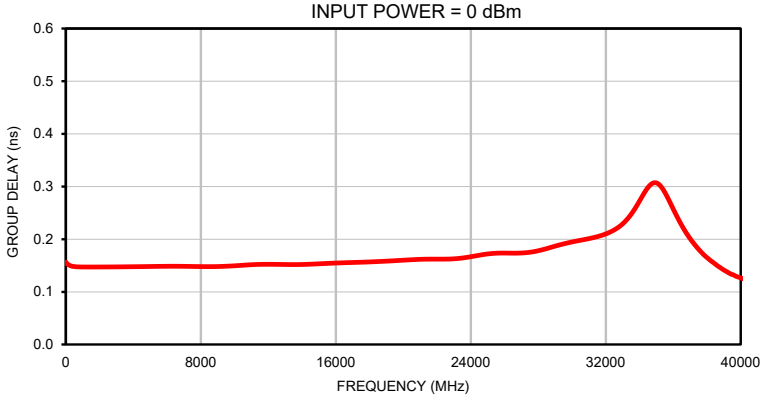
INPUT RETURN LOSS
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS
INPUT POWER = 0 dBm

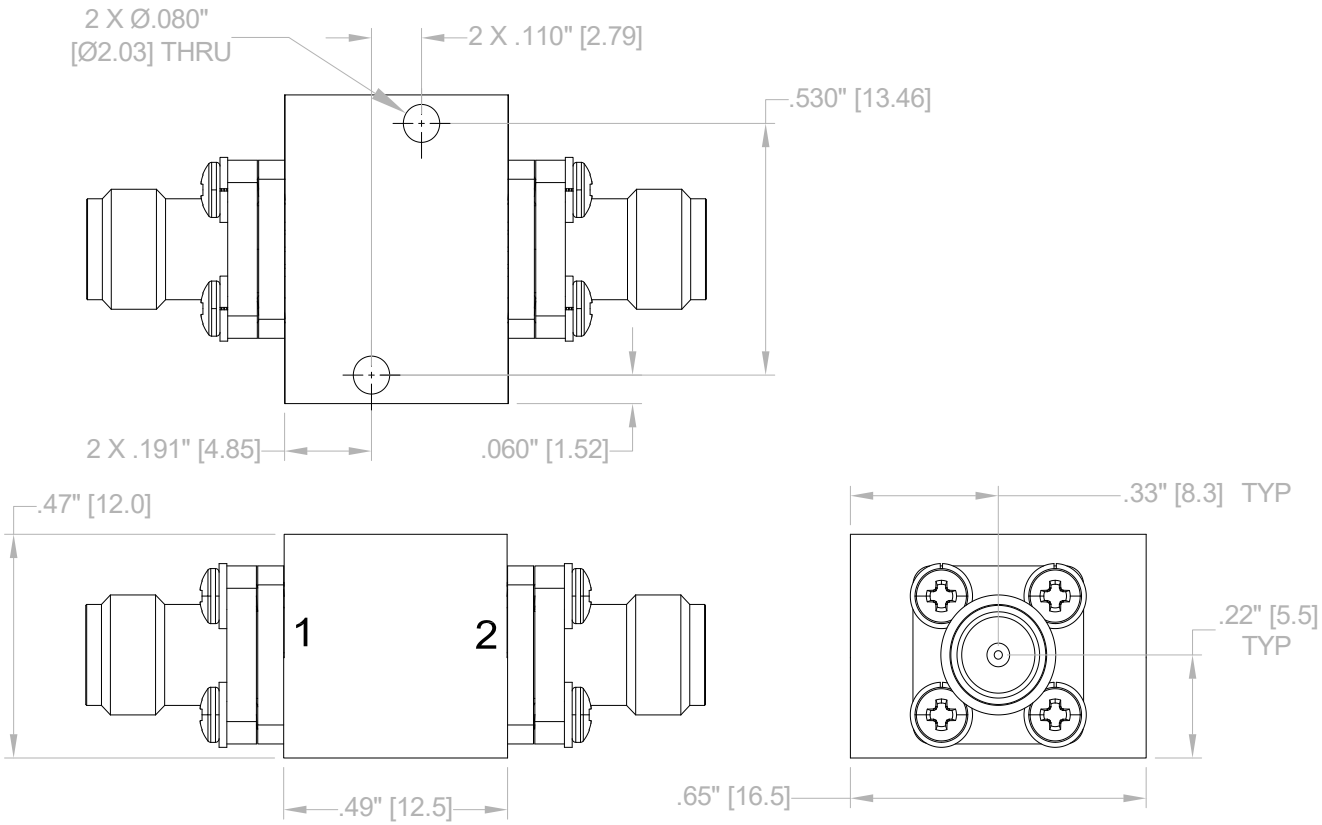


GROUP DELAY
INPUT POWER = 0 dBm



Case Style BCF

Outline Dimensions BCF3893



Dimensions are in inches [mm]. Tolerances: 2 Pl. ± 0.06 [1.5]; 3 Pl. ± 0.015 [0.38].

Notes:

1. Case material: Brass.
2. Case Finish: Powder coating.
3. Unit Weight: 28 grams.
4. Refer to the individual model data sheet for the type of connectors available.

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RF/IF MICROWAVE COMPONENTS

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Environmental Specifications ENV001

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	-40° to 85° C Ambient Temperature	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet

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