

Bandpass Filter

50Ω 69 to 71 MHz

ZFBP-70HR-S+



Generic photo used for illustration purposes only

CASE STYLE: H16

Connectors	Model
SMA-F	ZFBP-70HR-S+
BRACKET (OPTION "B")	

Features

- Good VSWR, 1.2:1 Typ @ Passband
- Excellent Rejection in the Stopband
- Connectorized package

Applications

- IF Signal Processing
- High Rejection Application
- Wire-Line Broadband Access
- Lab Use

Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	70	-	MHz
	Insertion Loss	F1-F2	69 - 71	-	5.5	7.0	dB
	VSWR	F1-F2	69 - 71	-	1.2	1.35	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 50	75	85	-	dB
		F3-F4	50 - 66	20	30	-	dB
	VSWR	DC-F4	DC - 66	-	18	-	:1
Stop Band, Upper	Insertion Loss	F5-F6	75 - 100	20	30	-	dB
		F6-F7	100 - 700	60	70	-	dB
		F7-F8	700 - 1000	50	60	-	dB
	VSWR	F5-F8	75 - 1000	-	18	-	:1

Maximum Ratings

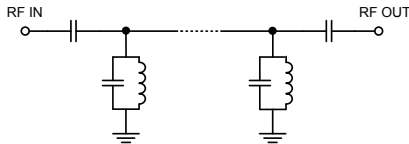
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W at 25°C

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

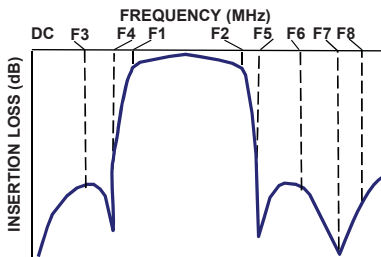
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1.0	102.69	17007.26	69.0	232.76
10.0	95.63	7623.21	69.1	228.80
30.0	94.91	2561.53	69.2	225.24
50.0	87.17	521.91	69.3	222.15
64.0	54.64	31.49	69.4	219.43
66.0	30.47	10.34	69.5	217.03
66.7	20.57	5.31	69.6	215.02
67.0	16.25	3.62	69.7	213.21
68.0	7.14	1.18	69.8	211.71
69.0	5.31	1.14	69.9	210.45
70.0	4.89	1.20	70.0	209.54
71.0	5.08	1.10	70.1	208.88
74.0	21.94	7.65	70.2	208.41
75.0	31.62	13.83	70.3	208.09
80.0	67.41	56.77	70.4	207.97
90.0	81.62	163.24	70.5	208.06
100.0	96.57	248.57	70.6	208.55
505.0	89.99	88.51	70.7	209.11
700.0	74.48	73.71	70.8	210.00
1000.0	61.62	62.49	71.0	212.43

Functional Schematic

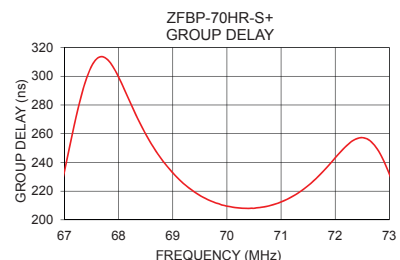
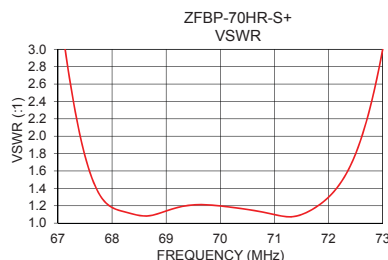
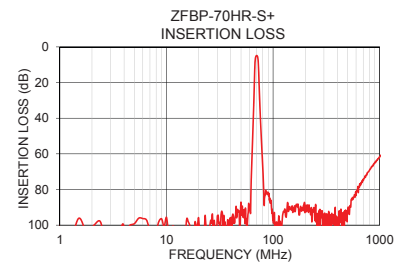
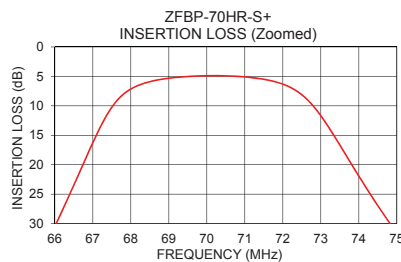


Typical Frequency Response



+RoHS Compliant

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



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.
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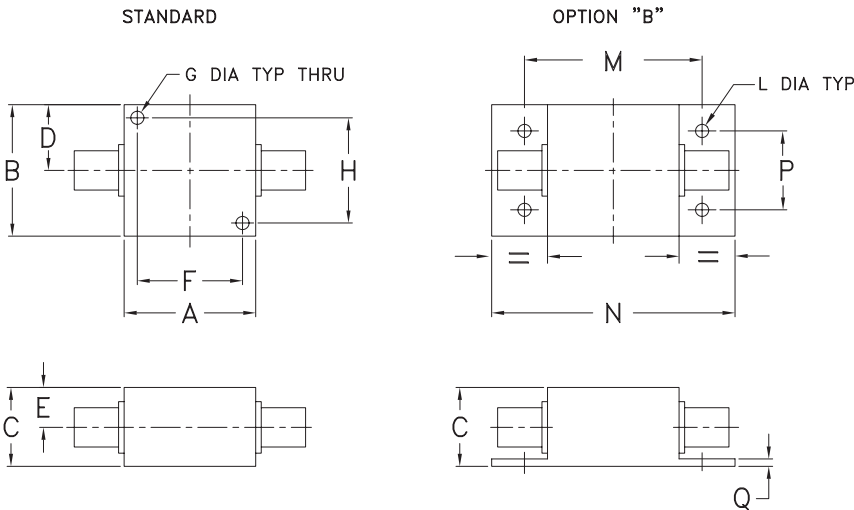


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Coaxial Connections

PORT - 1	SMA-FEMALE
PORT - 2	SMA-FEMALE

Outline Drawing



Outline Dimensions (^{inch}_{mm})

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40
J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.750	.06	grams
--	--	3.18	42.88	55.37	19.05	1.52	70.0

Note: Please refer to case style drawing for details

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Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1.0	102.31	102.69	97.39	0.00	0.00	0.01	0.00	0.00	0.00
5.0	98.80	99.18	97.02	0.00	0.00	0.00	0.00	0.00	0.00
10.0	103.02	95.63	102.27	0.00	0.00	0.01	0.00	0.00	0.01
25.0	110.09	102.69	109.64	0.01	0.00	0.01	0.00	0.00	0.01
30.0	100.19	94.91	97.56	0.00	0.01	0.01	0.01	0.01	0.01
40.0	99.54	107.59	100.31	0.01	0.01	0.02	0.01	0.01	0.02
50.0	106.25	87.17	101.71	0.03	0.03	0.04	0.03	0.03	0.04
55.0	97.59	90.47	106.50	0.06	0.06	0.07	0.05	0.06	0.08
60.0	86.73	89.60	89.33	0.14	0.16	0.18	0.14	0.16	0.18
63.0	67.70	66.22	65.35	0.33	0.38	0.43	0.32	0.37	0.41
64.0	55.83	54.64	53.66	0.48	0.55	0.63	0.45	0.52	0.60
65.0	44.35	43.11	42.08	0.76	0.88	1.01	0.71	0.83	0.95
66.0	31.80	30.47	29.41	1.42	1.68	1.96	1.29	1.54	1.78
66.7	21.87	20.57	19.62	2.71	3.31	3.93	2.42	2.96	3.49
67.0	17.41	16.25	15.48	3.98	4.93	5.86	3.50	4.34	5.14
67.5	10.75	10.23	10.02	9.08	11.10	12.83	7.74	9.44	10.81
67.8	8.12	8.04	8.12	15.50	17.74	19.52	12.54	14.31	15.59
68.0	7.04	7.14	7.31	20.40	21.69	23.23	15.83	17.08	18.07
68.5	5.62	5.89	6.16	25.58	27.45	29.93	20.16	20.45	21.03
69.0	4.99	5.31	5.60	23.62	23.70	24.17	20.65	20.94	21.97
69.2	4.84	5.17	5.46	21.35	21.76	22.48	20.15	20.97	22.58
69.5	4.68	5.02	5.32	19.62	20.46	21.40	20.21	22.00	24.85
69.8	4.58	4.92	5.24	19.42	20.47	21.39	21.87	25.00	30.38
70.0	4.53	4.89	5.21	19.86	20.92	21.70	24.23	28.96	40.29
70.5	4.51	4.90	5.26	21.80	22.74	23.46	40.50	33.61	28.07
71.0	4.64	5.08	5.49	24.50	26.61	29.71	25.81	24.35	23.08
71.5	4.96	5.49	5.97	26.39	26.60	25.80	22.19	22.32	22.13
72.0	5.63	6.31	6.94	19.16	17.73	16.53	24.53	28.42	30.85
73.0	10.21	11.68	12.86	6.70	6.03	5.61	9.57	8.37	7.69
74.0	20.41	21.94	23.10	2.35	2.28	2.24	2.93	2.82	2.76
75.0	30.36	31.62	32.58	1.25	1.26	1.27	1.46	1.47	1.48
80.0	66.40	67.41	68.06	0.29	0.31	0.32	0.31	0.33	0.35
85.0	81.50	81.33	81.46	0.14	0.16	0.17	0.15	0.17	0.18
90.0	83.27	81.62	83.60	0.09	0.11	0.12	0.09	0.11	0.12
95.0	89.55	85.92	88.18	0.07	0.08	0.09	0.07	0.08	0.10
100.0	92.22	96.57	92.33	0.06	0.07	0.08	0.06	0.07	0.08
105.0	105.60	126.98	108.15	0.05	0.06	0.07	0.05	0.06	0.07
119.0	96.01	111.45	92.56	0.05	0.06	0.07	0.04	0.05	0.06
131.0	92.87	94.80	92.07	0.04	0.05	0.06	0.04	0.05	0.06
151.0	90.34	89.24	89.86	0.04	0.06	0.07	0.04	0.06	0.07
161.0	87.97	92.39	92.08	0.05	0.06	0.07	0.04	0.06	0.07
175.0	91.92	94.24	93.22	0.05	0.07	0.08	0.04	0.06	0.07
201.0	92.34	89.35	91.30	0.06	0.08	0.09	0.06	0.07	0.09
221.0	90.59	92.07	91.07	0.07	0.09	0.10	0.07	0.08	0.10
241.0	89.28	90.16	91.15	0.08	0.10	0.11	0.08	0.09	0.10
251.0	96.44	88.60	91.40	0.09	0.11	0.12	0.09	0.10	0.11
261.0	96.21	99.01	97.66	0.10	0.12	0.13	0.09	0.11	0.12
281.0	103.07	94.15	97.29	0.10	0.12	0.13	0.10	0.12	0.13
301.0	94.13	93.74	93.63	0.11	0.13	0.14	0.11	0.13	0.13
321.0	96.23	95.45	96.17	0.12	0.14	0.15	0.12	0.14	0.14
351.0	100.08	95.49	100.62	0.13	0.15	0.16	0.13	0.15	0.16
371.0	106.20	97.87	92.60	0.14	0.16	0.17	0.14	0.16	0.17
381.0	95.51	94.73	93.24	0.14	0.16	0.17	0.14	0.16	0.17
401.0	95.12	103.86	97.40	0.15	0.17	0.18	0.15	0.17	0.18
550.0	93.42	85.88	86.83	0.18	0.21	0.22	0.19	0.22	0.24
600.0	82.87	83.28	82.70	0.19	0.21	0.23	0.20	0.23	0.24
700.0	75.43	74.48	75.10	0.21	0.24	0.25	0.21	0.25	0.27
750.0	72.34	71.94	72.11	0.21	0.24	0.25	0.22	0.26	0.28
800.0	69.70	69.40	69.33	0.21	0.24	0.26	0.22	0.27	0.29
1000.0	62.04	61.62	61.47	0.24	0.28	0.30	0.25	0.30	0.32

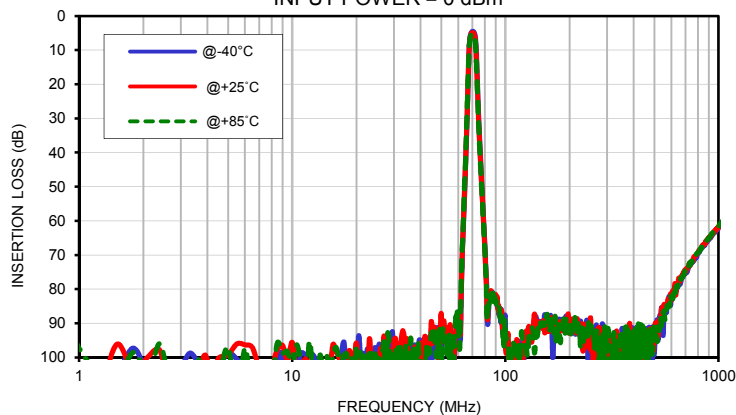
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-40°C	@+25°C	@+85°C
68.50	269.56	259.74	252.82
68.55	265.73	256.42	249.93
68.60	261.93	253.14	247.03
68.65	258.46	250.21	244.40
68.70	255.08	247.20	241.80
68.75	251.93	244.56	239.43
68.80	248.82	241.87	237.03
68.85	246.02	239.44	234.78
68.90	243.35	237.14	232.84
68.95	240.73	234.86	230.79
69.00	238.17	232.76	228.83
69.05	235.94	230.72	227.06
69.10	233.66	228.80	225.37
69.20	229.53	225.24	222.24
69.30	225.90	222.15	219.62
69.40	222.68	219.43	217.15
69.50	219.84	217.03	215.12
69.60	217.39	215.02	213.32
69.70	215.19	213.21	211.83
69.80	213.39	211.71	210.56
69.90	211.93	210.45	209.46
70.00	210.74	209.54	208.71
70.10	209.83	208.88	208.17
70.20	209.11	208.41	207.84
70.30	208.67	208.09	207.70
70.40	208.31	207.97	207.75
70.50	208.25	208.06	208.06
70.60	208.44	208.55	208.62
70.70	208.78	209.11	209.48
70.80	209.37	210.00	210.57
70.90	210.20	211.10	211.84
71.00	211.34	212.43	213.47
71.10	212.62	214.11	215.24
71.15	213.41	215.07	216.33
71.20	214.30	216.08	217.46
71.25	215.24	217.17	218.68
71.30	216.25	218.32	219.87
71.35	217.28	219.57	221.22
71.40	218.45	220.92	222.66
71.45	219.75	222.35	224.15
71.50	221.08	223.84	225.76

Typical Performance Curves

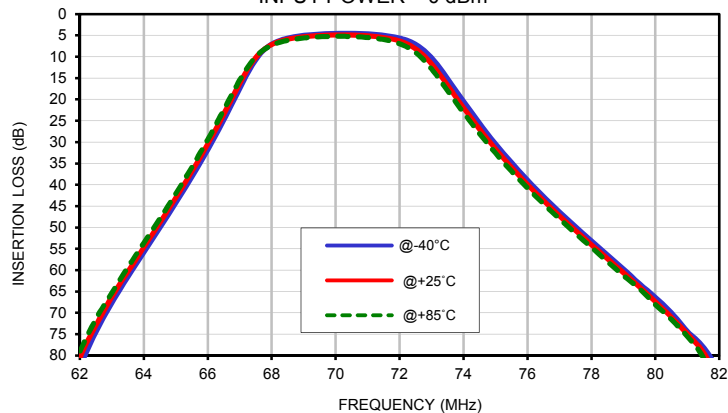
INSERTION LOSS vs. TEMPERATURE

INPUT POWER = 0 dBm



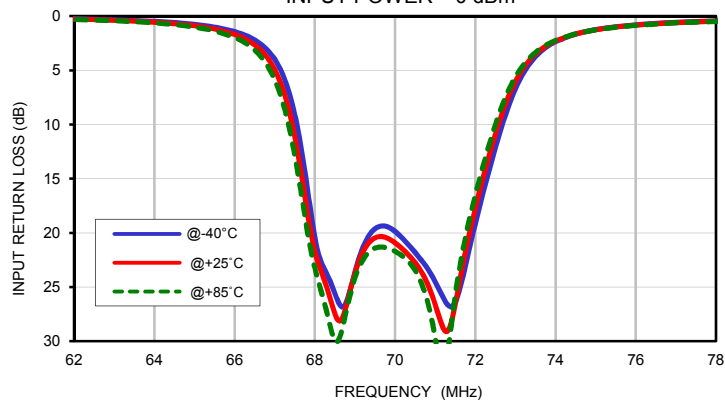
INSERTION LOSS vs. TEMPERATURE (Zoomed)

INPUT POWER = 0 dBm



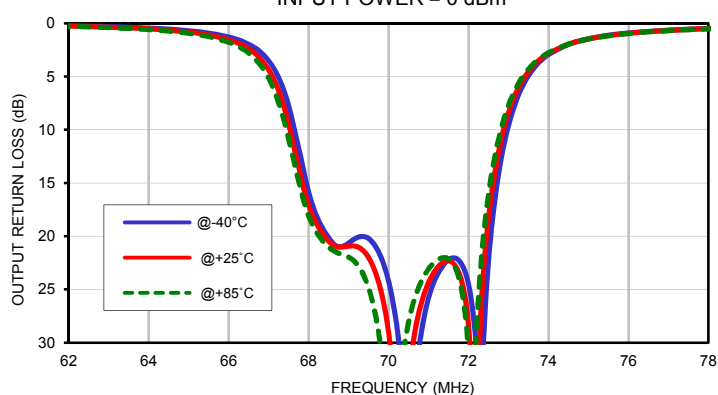
INPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = 0 dBm



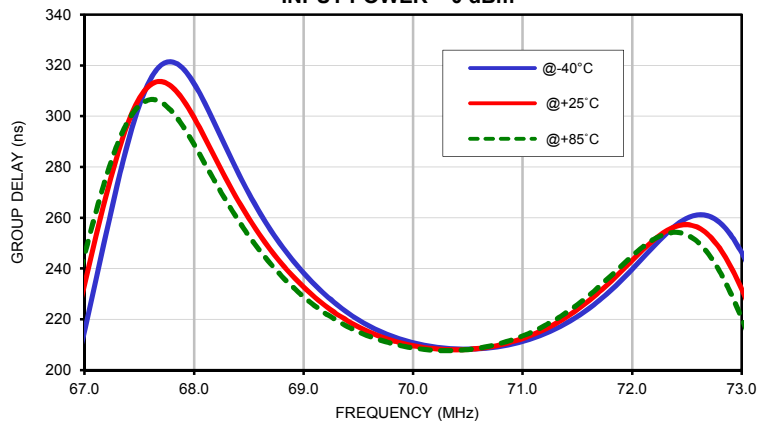
OUTPUT RETURN LOSS vs. TEMPERATURE

INPUT POWER = 0 dBm



GROUP DELAY vs. TEMPERATURE

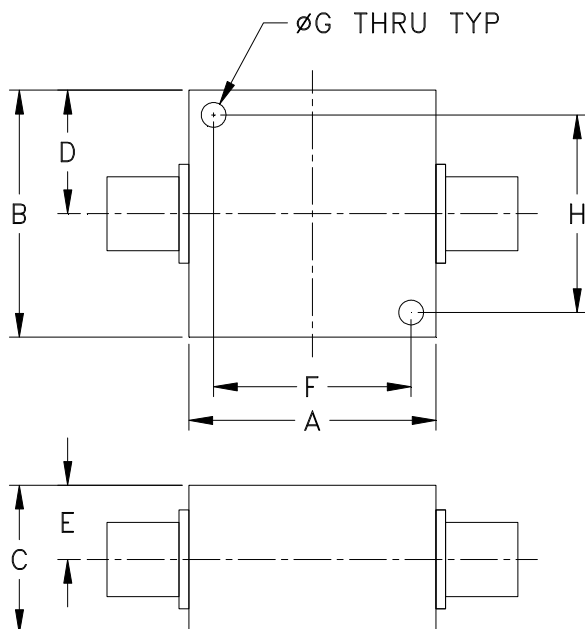
INPUT POWER = 0 dBm



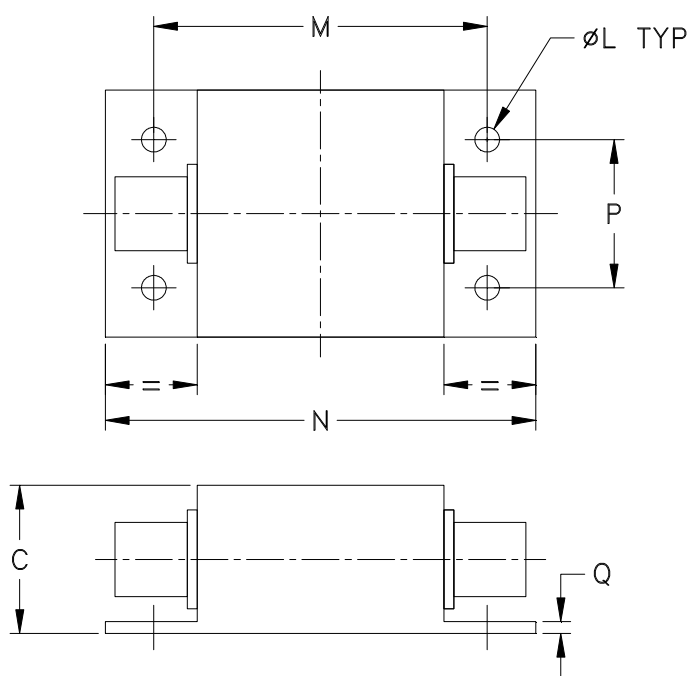
Outline Dimensions

H16

STANDARD



OPTION "B"



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
H16	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.00)	.38 (9.65)	1.000 (25.40)	.125 (3.18)	1.000 (25.40)	--	--	.125 (3.18)	1.688 (42.88)	2.18 (55.37)

CASE#	P	Q	WT.GRAMS
H16	.750 (19.05)	.06 (1.52)	70

Dimensions are in inches (mm). Tolerances: 2PL. $\pm .03$; 3PL. $\pm .015$

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. Mounting bracket available on request. Add suffix B to part number.
4. Bracket version, option B, dimension "C" changes from .75 to .94 inches when connectors are type N.
5. Refer to the individual model data sheet for the type of connectors available.



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