

Coaxial High Pass Filter

ZFHP-1R2-S+

50Ω 1.2 to 800 MHz



Generic photo used for illustration purposes only

CASE STYLE: H16

The Big Deal

- Low insertion loss
- High rejection
- Connectorized package

Product Overview

ZFHP-1R2-S+ is a High pass filter in a connectorized package. This low frequency cut-off high pass filter eliminates noise that feed into RF / base band circuits from low frequency sources.

Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications.
Excellent low frequency rejection	Filters out low frequency noise from sources such as electric motors and generators. SMDS noise filtering and IF noise filtering.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups.

Notes

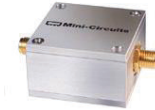
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B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document 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/MCLStore/terms.jsp



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ZFHP-1R2-S+



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Connectors Model
SMA-FEMALE ZFHP-1R2-S+
BRACKET (OPTION "B")

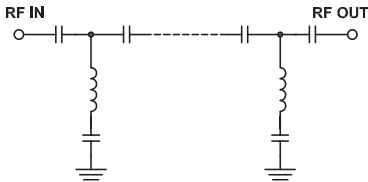
Features

- Wide band, 1.2 MHz to 800 MHz
- High rejection
- Connectorized package

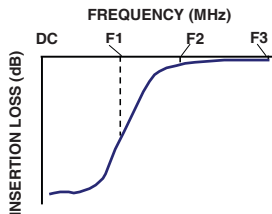
Applications

- Wire-line broad band access
- Fiber optic networks
- Receivers \ transmitters
- Electrical equipment noise elimination

Functional Schematic



Typical Frequency Response



Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-0.5	20	40	dB
	VSWR	DC-F1	DC-0.5	-	158	:1
Pass Band	Insertion Loss	F2-F3	1.2-800	-	0.8	dB
	VSWR	F2-F3	1.2-800	-	1.5	:1

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	+5 dBm max.

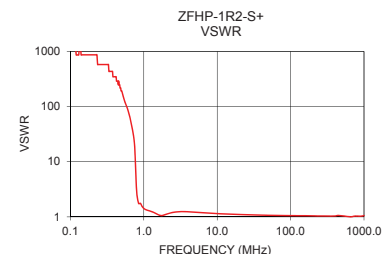
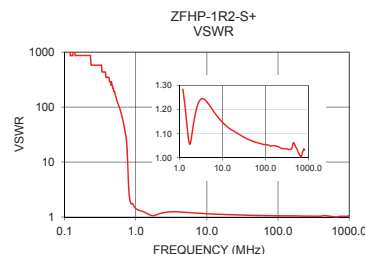
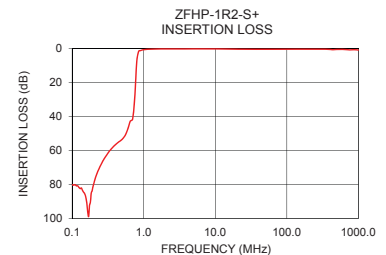
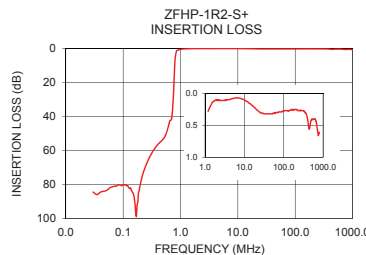
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
0.030	84.50	1737.18
0.250	68.73	579.06
0.500	53.36	193.02
0.600	47.28	91.43
0.700	41.48	38.61
0.750	28.71	19.54
0.800	7.51	2.84
0.850	1.53	1.76
0.900	1.10	1.76
0.950	0.74	1.54
1.000	0.55	1.43
1.200	0.28	1.29
1.500	0.15	1.13
5.000	0.08	1.22
50.000	0.32	1.07
250.000	0.27	1.04
500.000	0.42	1.05
600.000	0.40	1.02
700.000	0.54	1.01
800.000	0.61	1.03

+RoHS Compliant

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



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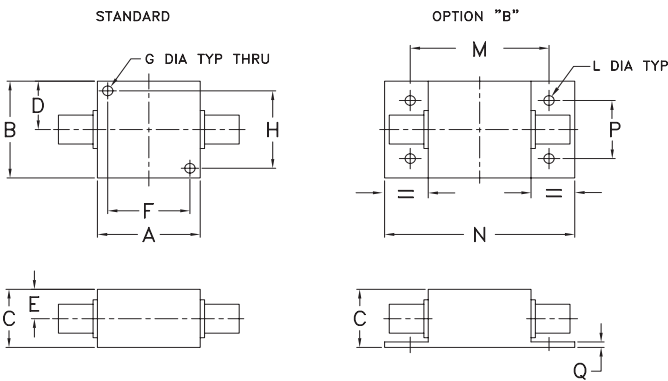
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ZFHP-1R2-S+
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Coaxial Connections

PORT - 1	SMA-Female
PORT - 2	SMA-Female

Outline Drawing



Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

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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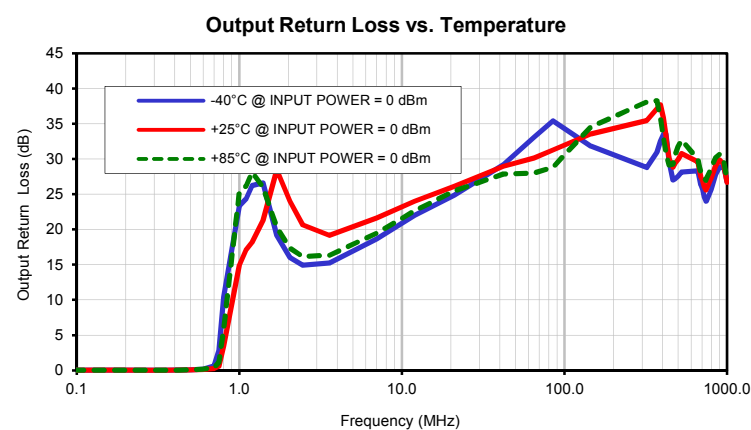
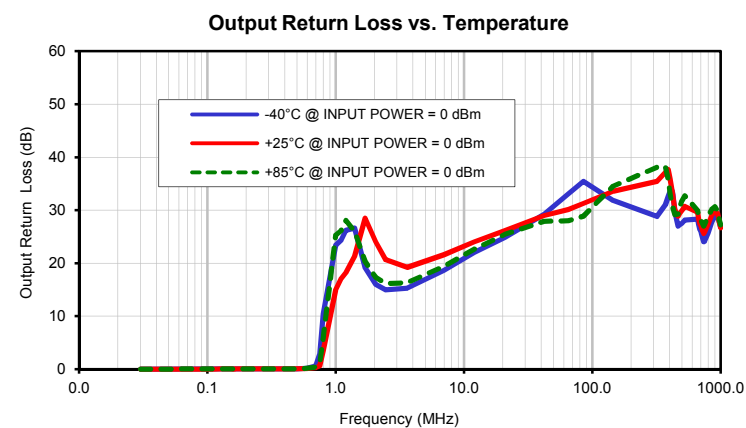
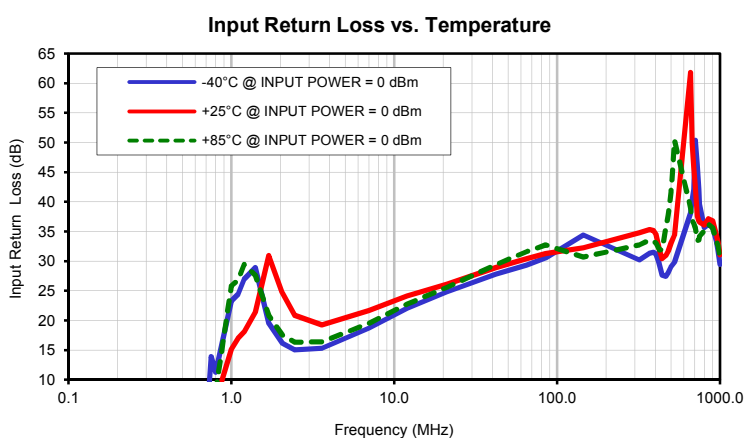
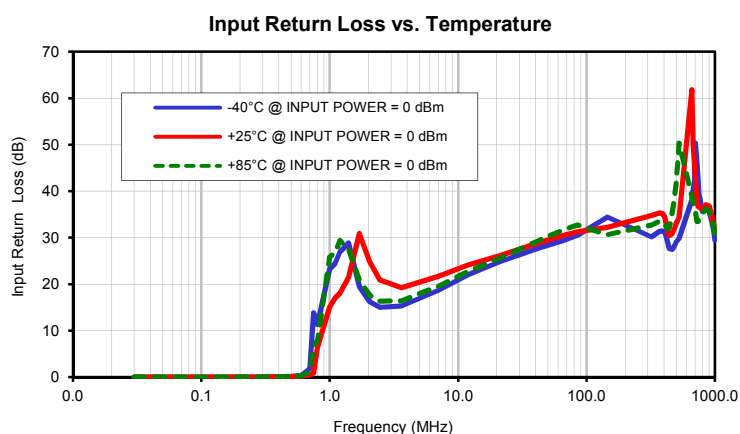
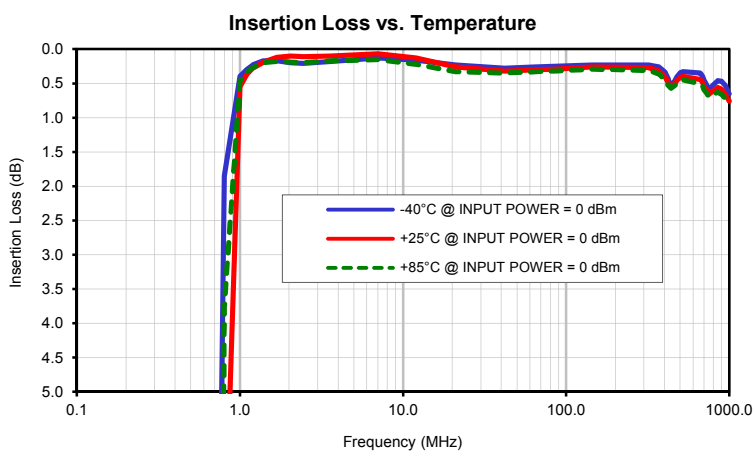
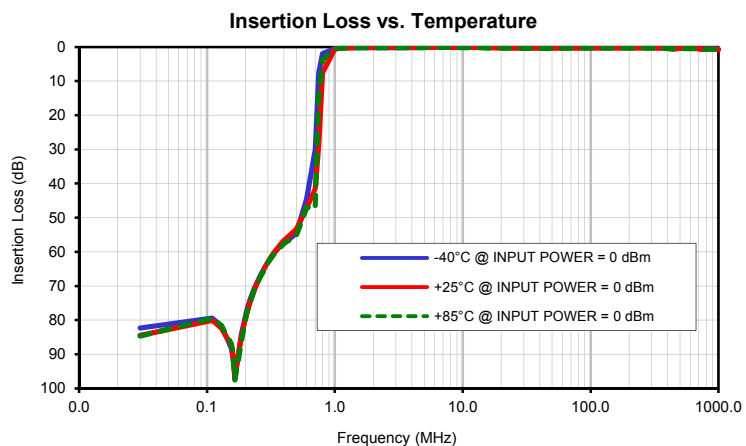
Typical Performance Data

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
0.030	82.34	84.50	84.66	0.01	0.01	0.01	0.01	0.00	0.01
0.110	79.39	80.09	79.47	0.02	0.01	0.02	0.02	0.01	0.02
0.130	81.68	82.39	81.57	0.02	0.02	0.02	0.02	0.02	0.03
0.155	88.40	87.36	87.03	0.02	0.02	0.03	0.02	0.02	0.02
0.160	90.65	90.65	89.83	0.02	0.02	0.03	0.02	0.01	0.02
0.165	97.25	95.98	97.61	0.02	0.02	0.03	0.02	0.02	0.02
0.185	84.19	84.94	86.53	0.03	0.02	0.03	0.02	0.02	0.02
0.205	77.27	78.05	77.95	0.03	0.02	0.03	0.02	0.02	0.03
0.220	73.41	74.01	74.24	0.03	0.02	0.03	0.02	0.02	0.03
0.235	70.57	71.15	71.09	0.03	0.03	0.04	0.03	0.02	0.03
0.260	67.03	67.32	67.47	0.03	0.03	0.04	0.03	0.02	0.03
0.295	63.30	63.35	63.61	0.04	0.03	0.04	0.03	0.02	0.03
0.330	60.65	60.44	60.95	0.05	0.03	0.05	0.03	0.03	0.04
0.370	58.50	58.05	58.79	0.05	0.04	0.05	0.03	0.03	0.04
0.400	57.48	56.64	57.67	0.06	0.05	0.06	0.04	0.03	0.05
0.425	56.75	55.68	56.92	0.07	0.06	0.07	0.04	0.03	0.05
0.500	54.60	53.36	55.28	0.12	0.09	0.12	0.07	0.05	0.07
0.600	44.51	47.28	46.86	0.33	0.19	0.28	0.17	0.11	0.15
0.700	30.08	41.48	47.38	1.78	0.45	1.09	0.60	0.27	0.40
0.750	7.58	28.71	14.76	13.88	0.89	6.76	2.78	0.58	1.14
0.800	1.85	7.51	3.76	11.28	6.39	7.89	10.43	3.49	5.87
1.000	0.40	0.55	0.46	23.27	15.12	25.81	23.34	14.94	25.32
1.100	0.30	0.37	0.34	24.44	16.99	26.81	24.32	17.11	26.16
1.200	0.23	0.28	0.27	26.96	18.08	29.42	26.22	18.22	28.10
1.400	0.17	0.19	0.20	28.88	21.42	27.58	26.60	21.29	26.02
1.700	0.17	0.12	0.18	19.53	30.94	20.79	19.14	28.48	20.30
2.050	0.20	0.10	0.19	16.18	24.71	17.56	16.02	24.00	17.33
2.450	0.21	0.11	0.20	15.03	20.88	16.31	14.94	20.63	16.17
3.600	0.18	0.10	0.17	15.29	19.24	16.39	15.25	19.17	16.32
7.000	0.13	0.07	0.15	18.69	21.67	19.54	18.63	21.62	19.45
12.000	0.16	0.13	0.22	22.07	24.08	22.73	22.01	24.01	22.66
21.000	0.23	0.26	0.33	24.81	26.08	25.55	24.88	26.11	25.47
42.000	0.28	0.32	0.35	27.75	28.89	29.37	29.20	28.96	27.89
65.000	0.26	0.30	0.33	29.36	30.41	31.58	33.10	30.14	28.00
85.000	0.25	0.29	0.32	30.50	31.29	32.75	35.43	31.27	28.85
145.000	0.23	0.26	0.29	34.41	32.22	30.68	31.82	33.54	34.54
320.000	0.23	0.27	0.31	30.19	34.77	32.71	28.79	35.46	38.11
370.000	0.26	0.32	0.36	31.32	35.34	33.54	30.96	37.13	38.27
390.000	0.30	0.36	0.41	31.49	35.18	33.30	32.55	37.67	35.78
405.000	0.34	0.41	0.45	31.24	34.52	33.05	33.50	35.86	33.11
420.000	0.42	0.48	0.52	29.98	32.55	32.19	33.56	33.41	30.98
425.000	0.45	0.51	0.53	29.34	31.81	31.88	32.88	32.50	30.40
440.000	0.53	0.56	0.57	27.68	30.42	31.93	29.58	30.08	29.13
465.000	0.46	0.50	0.53	27.47	30.96	35.64	27.01	28.84	29.26
480.000	0.40	0.45	0.49	28.02	31.65	37.75	27.20	29.40	30.61
500.000	0.35	0.42	0.46	29.06	33.03	41.66	27.54	29.94	31.73
525.000	0.33	0.40	0.45	29.80	34.38	50.32	28.13	30.76	32.71
660.000	0.35	0.44	0.50	38.08	61.83	38.98	28.33	29.58	29.95
675.000	0.37	0.46	0.52	40.32	49.82	36.88	27.26	28.37	28.82
690.000	0.41	0.50	0.55	42.09	45.79	36.32	26.35	27.45	28.10
705.000	0.46	0.55	0.60	50.36	42.50	35.57	25.75	26.96	27.97
725.000	0.52	0.59	0.64	46.24	37.63	33.45	24.61	26.04	27.33
740.000	0.56	0.63	0.67	42.04	36.73	33.53	24.00	25.61	26.96
750.000	0.59	0.66	0.70	39.53	36.58	34.17	24.16	25.87	27.32
800.000	0.52	0.61	0.66	35.64	36.09	35.13	25.68	27.35	28.75
850.000	0.46	0.56	0.63	36.20	37.15	36.21	27.79	29.03	30.19
900.000	0.47	0.58	0.66	35.70	36.85	35.66	28.88	29.85	30.68
950.000	0.53	0.65	0.72	33.34	34.35	33.34	28.91	29.28	29.81
975.000	0.59	0.71	0.78	31.64	33.15	32.58	27.91	27.92	28.34
1000.000	0.65	0.76	0.83	29.43	31.05	30.52	26.80	26.69	27.21

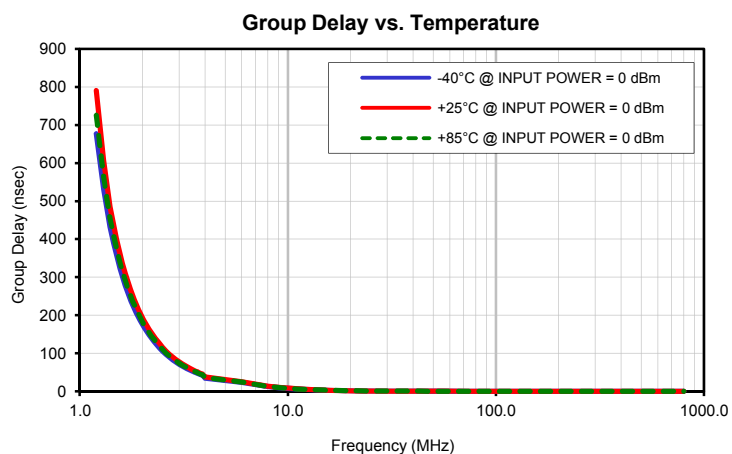
Typical Performance Data

FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
1.200	677.01	790.23	726.14
1.300	531.14	606.12	563.54
1.400	431.26	485.10	454.05
1.500	359.14	400.80	376.05
1.600	303.44	337.69	317.23
1.700	260.41	289.39	271.87
1.800	226.38	250.73	236.24
1.900	198.47	219.72	206.97
2.000	175.61	194.10	183.08
2.100	156.72	173.31	163.51
2.200	140.89	155.28	146.67
2.300	127.42	140.33	132.83
2.400	115.67	127.65	120.61
2.500	105.56	116.42	110.11
2.600	96.81	106.27	100.70
2.700	89.28	97.85	92.88
2.800	82.67	90.51	85.88
2.900	76.90	83.83	79.88
3.000	71.45	77.95	74.10
3.100	66.77	72.81	69.46
3.200	62.39	67.94	64.85
3.300	58.84	63.81	60.96
3.400	55.27	60.19	57.54
3.500	52.21	56.49	53.99
3.600	49.15	53.48	51.15
3.700	46.58	50.34	48.21
3.800	43.90	47.51	45.67
3.900	41.76	45.13	43.47
4.000	34.85	37.84	36.42
6.000	23.69	25.75	24.74
8.000	12.73	13.73	13.13
9.000	9.68	10.48	9.98
11.000	6.23	6.74	6.39
13.000	4.39	4.71	4.49
16.000	2.93	3.09	2.94
25.000	1.25	1.25	1.21
31.000	0.86	0.87	0.85
37.000	0.67	0.68	0.68
47.000	0.53	0.52	0.52
50.000	0.50	0.50	0.49
55.000	0.46	0.45	0.45
70.000	0.42	0.40	0.39
73.000	0.40	0.39	0.39
83.000	0.37	0.34	0.33
91.000	0.33	0.34	0.34
96.000	0.38	0.35	0.35
140.000	0.31	0.30	0.30
175.000	0.32	0.30	0.30
245.000	0.29	0.28	0.28
365.000	0.32	0.30	0.29
425.000	0.24	0.22	0.22
445.000	0.16	0.17	0.18
475.000	0.27	0.26	0.26
510.000	0.32	0.30	0.29
550.000	0.30	0.28	0.28
685.000	0.32	0.30	0.29
705.000	0.28	0.26	0.25
730.000	0.25	0.24	0.24
745.000	0.22	0.22	0.23
800.000	0.27	0.26	0.25

Typical Performance Curves



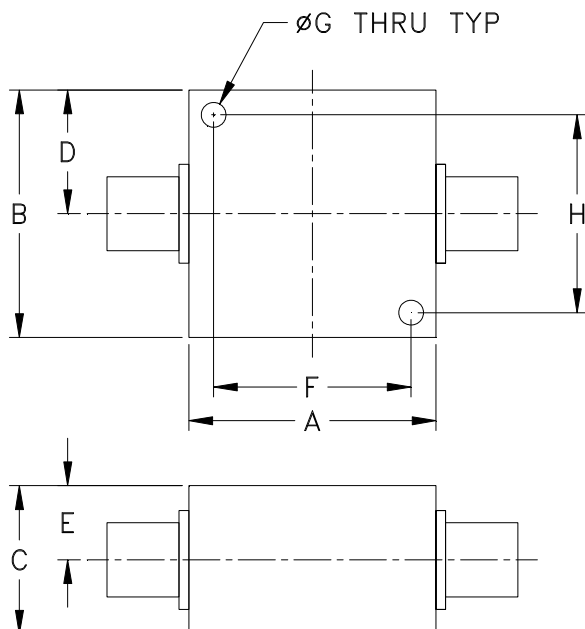
Typical Performance Curves



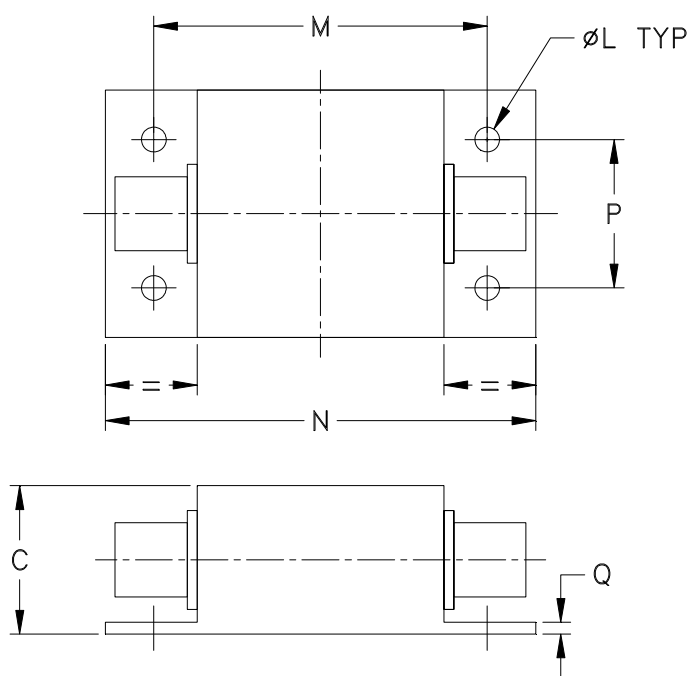
Outline Dimensions

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)	.750 (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.



ISO 9001 ISO 14001 CERTIFIED

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS





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
Humidity	90 to 95% RH, 40°C, 96 hours; Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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	50g, 11ms half-sine, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition A