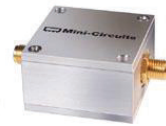


Coaxial High Pass Filter

ZFHP-0R50-S+

50Ω 0.50 to 750 MHz



Generic photo used for illustration purposes only

CASE STYLE: H16

The Big Deal

- Low insertion loss
- High rejection
- Connectorized package

Product Overview

ZFHP-0R50-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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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



Coaxial High Pass Filter

50Ω 0.50 to 750 MHz

ZFHP-0R50-S+



Generic photo used for illustration purposes only

CASE STYLE: H16

Connectors	Model
SMA-FEMALE	ZFHP-0R50-S+
BRACKET (OPTION "B")	

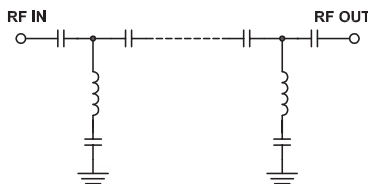
Features

- Wide band, 0.50 MHz to 750 MHz
- High rejection
- Connectorized package

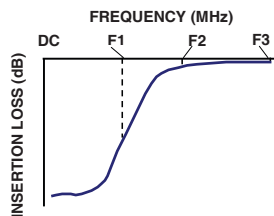
Applications

- 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-0.25	25	59	dB
	VSWR	DC-F1	DC-0.25	-	40	:1
Pass Band	Insertion Loss	F2-F3	0.50-750	-	0.7	dB
	VSWR	F2-F3	0.50-750	-	1.3	:1

Maximum Ratings

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

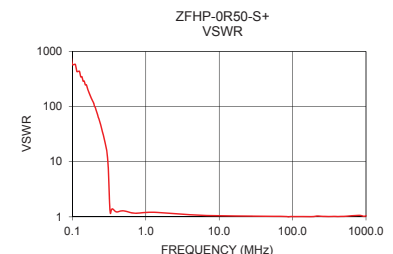
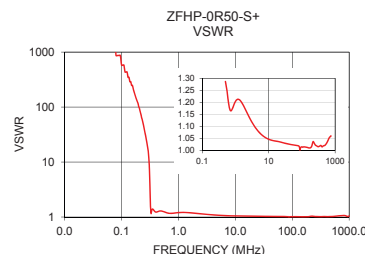
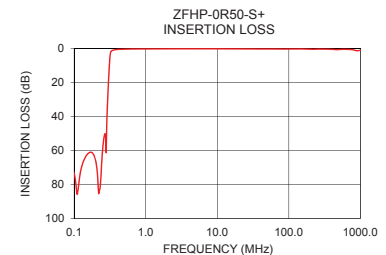
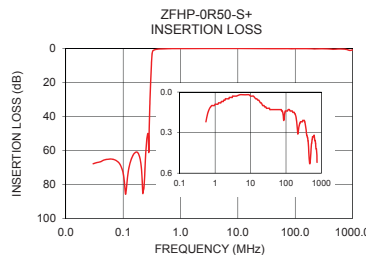
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
0.030	67.84	1737.18
0.250	59.57	40.41
0.290	36.17	17.39
0.300	22.02	12.26
0.305	16.08	9.79
0.315	5.87	3.65
0.320	3.10	2.01
0.400	0.41	1.23
0.450	0.30	1.27
0.500	0.25	1.29
1.000	0.09	1.20
10.000	0.03	1.05
50.000	0.13	1.02
100.000	0.14	1.02
250.000	0.23	1.02
350.000	0.24	1.02
500.000	0.46	1.02
600.000	0.33	1.04
700.000	0.42	1.06
750.000	0.52	1.06

+RoHS Compliant

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



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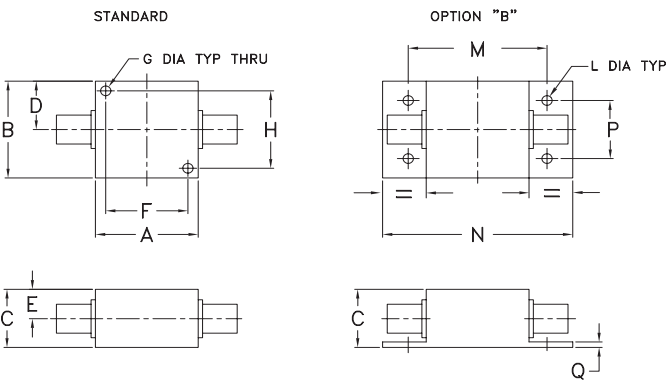
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Page 2 of 3

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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Coaxial High Pass Filter

ZFHP-0R50-S+

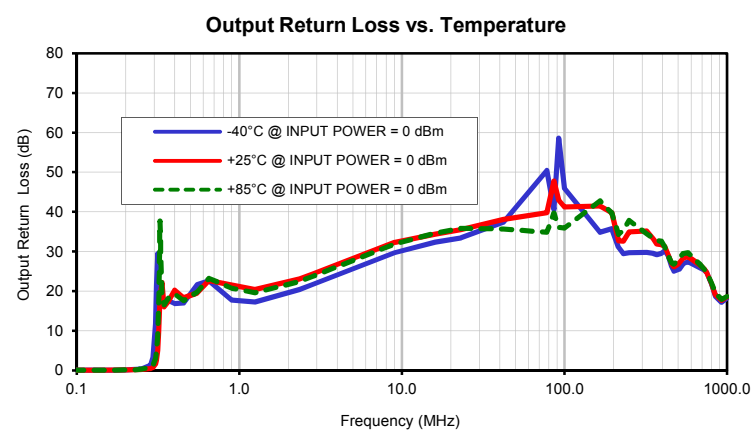
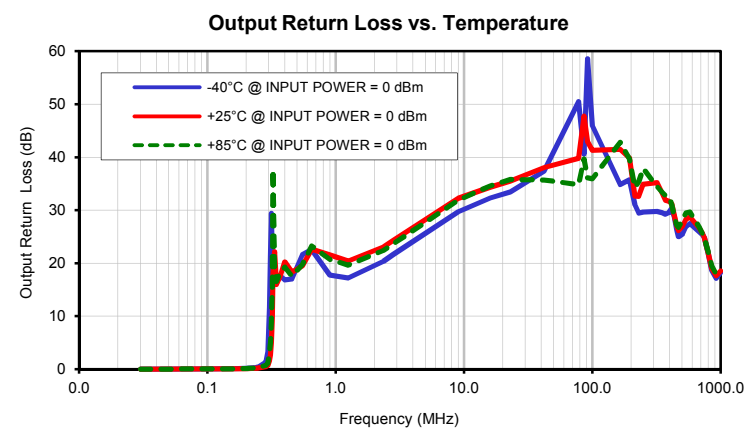
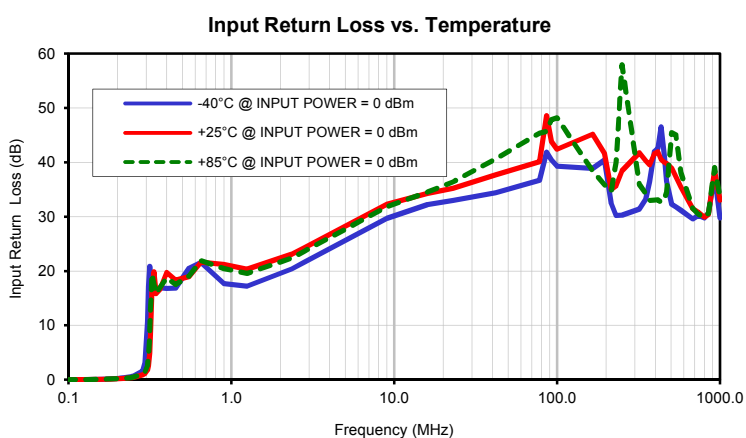
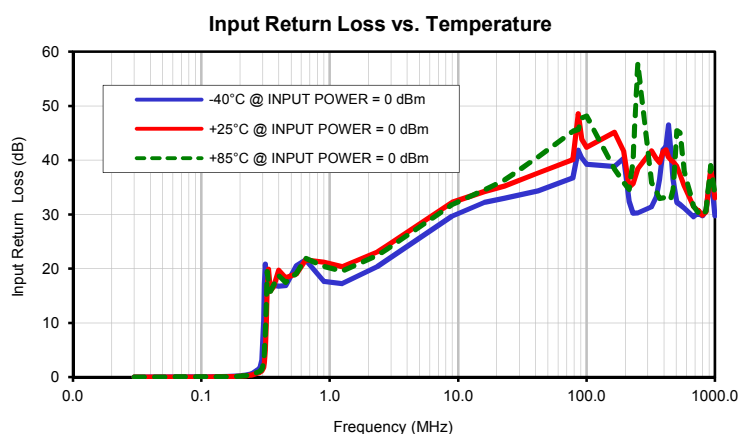
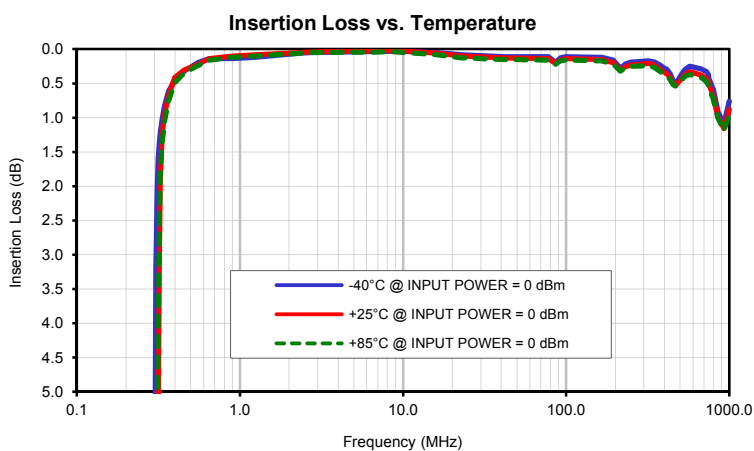
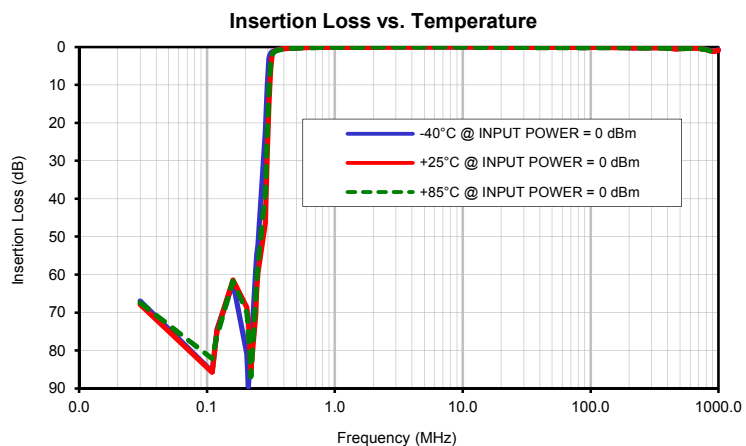
Typical Performance Data

FREQ. (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
0.030	66.97	67.84	67.41	0.01	0.01	0.01	0.00	0.00	0.01
0.110	85.61	85.75	82.23	0.04	0.03	0.04	0.04	0.03	0.03
0.120	74.50	74.84	76.11	0.05	0.04	0.05	0.04	0.03	0.04
0.160	62.12	61.44	61.72	0.11	0.08	0.09	0.08	0.05	0.07
0.205	80.85	68.59	69.86	0.26	0.18	0.21	0.15	0.10	0.13
0.210	89.53	72.08	74.26	0.29	0.20	0.22	0.16	0.11	0.14
0.220	80.60	85.21	86.90	0.35	0.24	0.27	0.20	0.13	0.16
0.240	58.69	70.70	67.20	0.54	0.35	0.40	0.30	0.17	0.24
0.245	54.91	64.44	61.76	0.61	0.39	0.45	0.34	0.19	0.26
0.250	52.16	59.57	57.55	0.68	0.43	0.50	0.39	0.21	0.29
0.285	22.26	46.52	38.76	1.60	0.89	1.07	1.33	0.48	0.74
0.295	10.21	28.70	24.10	3.09	1.13	1.42	3.17	0.71	1.16
0.305	3.19	16.08	12.15	10.59	1.78	2.59	11.67	1.59	2.84
0.310	2.10	10.51	7.32	17.23	2.64	4.36	21.50	2.65	4.92
0.315	1.61	5.87	4.10	20.86	4.88	8.06	29.42	5.03	8.95
0.320	1.36	3.10	2.51	18.66	9.49	13.81	20.17	9.73	16.11
0.325	1.21	1.89	1.82	16.97	16.79	19.48	17.66	18.23	37.65
0.334	1.01	1.22	1.35	15.97	19.88	17.54	16.66	22.16	19.10
0.345	0.83	0.96	1.07	16.11	15.87	15.83	17.01	16.01	16.51
0.365	0.61	0.67	0.75	16.94	16.63	17.00	17.68	17.27	18.12
0.400	0.45	0.41	0.49	16.78	19.71	18.71	16.83	20.24	19.26
0.455	0.32	0.30	0.35	16.87	18.30	17.50	17.00	18.26	17.56
0.550	0.20	0.22	0.24	20.52	18.99	19.11	21.59	19.50	19.76
0.650	0.14	0.14	0.16	21.59	21.63	21.90	22.55	22.64	23.22
0.900	0.14	0.10	0.12	17.68	21.22	20.42	17.74	21.53	20.71
1.250	0.12	0.08	0.10	17.23	20.35	19.55	17.21	20.38	19.59
2.350	0.06	0.05	0.06	20.39	23.09	22.41	20.36	23.07	22.39
2.800	0.05	0.04	0.05	21.61	24.28	23.62	21.59	24.25	23.59
9.000	0.03	0.02	0.04	29.70	32.25	31.81	29.70	32.24	31.85
16.000	0.05	0.06	0.08	32.23	34.25	34.53	32.32	34.36	34.58
23.000	0.08	0.10	0.13	32.97	35.22	36.39	33.44	35.48	35.82
42.000	0.11	0.13	0.15	34.38	37.67	40.64	37.38	38.05	35.68
78.000	0.11	0.14	0.16	36.70	40.10	45.33	50.45	39.81	34.86
86.000	0.19	0.21	0.22	41.86	48.58	45.67	40.57	47.75	39.69
92.000	0.13	0.16	0.17	40.45	43.88	47.83	58.57	42.94	36.08
100.000	0.11	0.14	0.16	39.28	42.38	48.16	45.93	41.27	35.93
165.000	0.12	0.15	0.17	38.87	45.16	38.37	34.82	41.47	42.79
195.000	0.16	0.20	0.22	40.37	41.63	35.87	35.72	39.82	39.68
215.000	0.28	0.31	0.32	32.43	35.00	34.62	31.04	32.65	34.30
230.000	0.22	0.26	0.28	30.22	35.63	39.85	29.46	32.59	35.39
250.000	0.19	0.23	0.25	30.26	38.43	57.93	29.65	34.92	37.83
320.000	0.17	0.21	0.24	31.41	41.72	35.91	29.77	35.17	34.45
350.000	0.19	0.24	0.27	33.21	40.26	34.21	29.55	33.20	33.41
370.000	0.22	0.28	0.31	36.46	39.54	32.96	29.23	31.87	32.79
395.000	0.27	0.33	0.36	41.97	41.57	33.05	29.53	31.70	32.60
415.000	0.29	0.36	0.39	42.56	41.92	33.10	30.28	31.24	31.08
435.000	0.36	0.42	0.45	46.52	40.53	32.61	28.80	29.04	28.72
455.000	0.46	0.51	0.52	41.25	40.00	33.07	26.23	26.91	27.08
470.000	0.50	0.53	0.54	36.49	39.79	34.46	25.01	26.13	26.76
505.000	0.38	0.44	0.46	32.25	38.91	45.47	25.52	27.01	28.22
535.000	0.30	0.37	0.40	31.80	37.36	45.06	26.84	28.25	29.47
575.000	0.25	0.33	0.37	31.16	35.38	38.03	27.45	28.74	29.65
680.000	0.29	0.38	0.42	29.58	31.44	31.50	25.88	26.64	26.81
725.000	0.33	0.43	0.48	30.08	30.89	30.61	25.32	25.53	25.48
745.000	0.37	0.48	0.53	30.02	30.58	30.31	24.84	24.84	24.82
750.000	0.42	0.52	0.57	30.11	30.61	30.33	24.58	24.57	24.59
800.000	0.58	0.68	0.73	29.77	29.89	29.84	21.87	21.91	22.16
850.000	0.90	0.98	1.00	30.69	30.47	30.63	18.68	19.02	19.48
925.000	1.09	1.16	1.19	37.64	38.45	39.04	17.16	17.62	17.90
1000.000	0.76	0.88	0.96	29.74	33.06	33.67	18.21	18.56	18.61

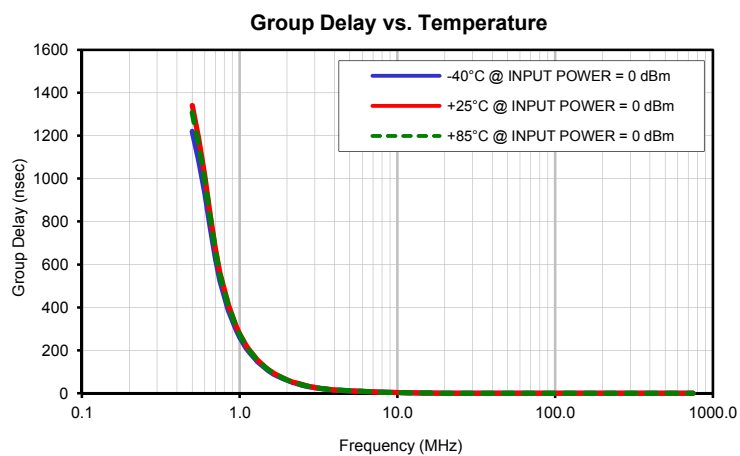
Typical Performance Data

FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
0.500	1218.99	1339.36	1306.70
0.550	1084.87	1186.45	1159.56
0.600	933.83	1015.78	994.59
0.650	772.68	833.85	819.53
0.700	630.71	677.68	667.03
0.750	526.08	564.00	555.39
0.850	384.20	411.40	405.10
0.950	294.41	314.57	309.77
1.000	261.51	278.87	275.21
1.100	210.72	224.46	221.55
1.150	191.10	203.36	200.81
1.300	146.49	155.23	153.18
1.450	116.21	122.77	121.47
1.550	100.78	106.52	105.18
1.650	88.68	93.61	92.32
1.750	78.32	82.56	81.93
1.850	69.91	73.73	73.01
2.050	56.59	59.64	59.10
2.150	51.27	54.17	53.38
2.200	49.18	51.63	51.15
2.250	47.04	49.33	48.94
2.450	39.53	41.45	41.08
2.700	32.48	33.98	33.73
2.850	29.17	30.53	30.12
2.950	27.43	28.68	28.34
3.000	26.24	27.74	27.32
3.250	22.54	23.50	23.32
3.450	20.11	20.93	20.80
3.850	16.01	16.87	16.77
6.000	8.89	9.30	9.14
8.000	4.97	5.21	5.15
10.000	3.09	3.27	3.22
14.000	1.66	1.74	1.70
23.000	0.73	0.73	0.69
24.000	0.68	0.68	0.65
25.000	0.65	0.65	0.62
31.000	0.51	0.52	0.50
37.000	0.44	0.45	0.43
41.000	0.41	0.42	0.40
42.000	0.40	0.42	0.39
43.000	0.40	0.42	0.40
49.000	0.39	0.39	0.38
70.000	0.35	0.35	0.34
77.000	0.37	0.38	0.36
84.000	0.32	0.24	0.17
85.000	0.23	0.15	0.12
86.000	0.10	0.08	0.07
87.000	0.00	0.04	0.07
89.000	0.01	0.13	0.19
90.000	0.11	0.22	0.25
92.000	0.33	0.35	0.33
96.000	0.39	0.38	0.35
100.000	0.34	0.34	0.32
210.000	0.23	0.23	0.21
245.000	0.31	0.30	0.28
440.000	0.27	0.27	0.24
455.000	0.21	0.22	0.21
675.000	0.33	0.33	0.31
735.000	0.33	0.34	0.32
750.000	0.32	0.32	0.30

Typical Performance Curves



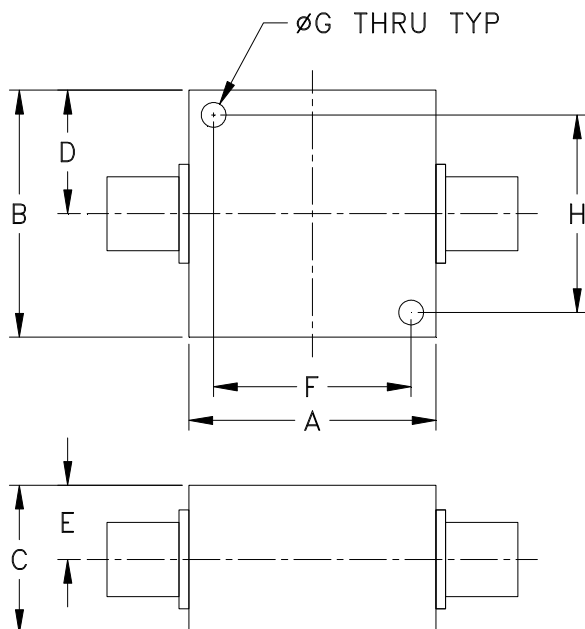
Typical Performance Curves



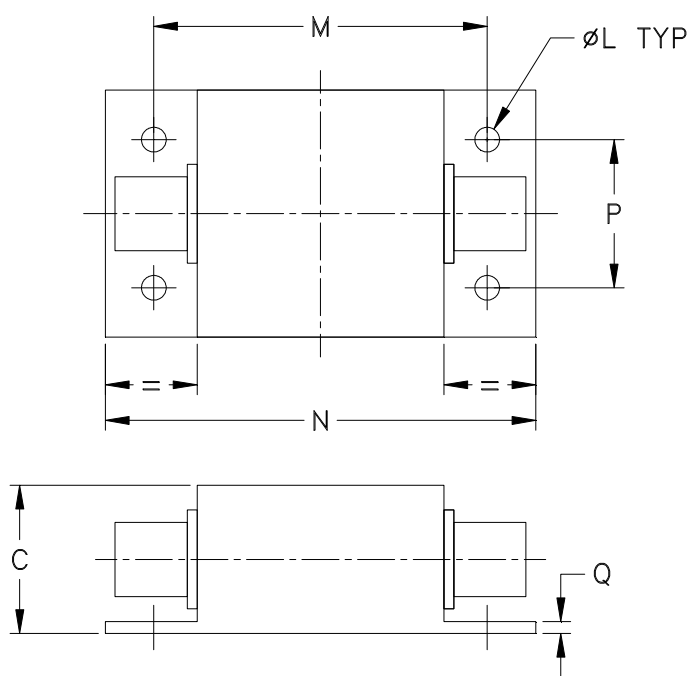
Outline Dimensions

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)	.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.



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



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