

# Matching Pad

## Z7550R-FMSF+

50/75Ω

DC to 2500 MHz

### The Big Deal

- Excellent matching VSWR, 1.2:1 typical
- 0.25W Power Handling
- SMA-F (50Ω) to F-Type-M (75Ω) Connectors



CASE STYLE: H16

### Product Overview

Mini-Circuits' Z7550R-FMSF+ is a coaxial 50/75Ω resistive matching pad covering the DC to 2500 MHz frequency range, supporting impedance matching in a wide range of systems including CATV, broadband networks, and more. This model is ideal for 50/75Ω impedance matching in systems where minimizing mismatch and signal reflections is a priority. The matching pad handles RF input power up to 0.25W and comes housed in a rugged, compact aluminium alloy case (1.25 x 1.25 x 0.75") with SAM-F (50Ω) to F-Type-M(75Ω) connectors.

### Key Features

Feature	Advantages
Wideband, DC to 2500 MHz	Supports a wide variety of applications including CATV and DOCSIS® 3.1 systems and equipment.
Excellent matching VSWR, 1.2:1 typ.	Enables excellent signal power transmission from input to output, minimizing over all systems losses.
0.25W power handling	Supports a range of systems power requirements.
Compact size, 1.25 x 1.25 x 0.75"	Accommodates tight space requirements for crowded systems layouts.
SMA-F (50Ω) to Type-M (75Ω) connectors	Supports connections between components with different connector types.

#### 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-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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Matching Pad

## Z7550R-FMSF+

50/75Ω DC to 2500 MHz

### Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

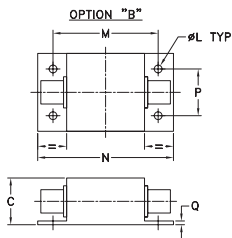
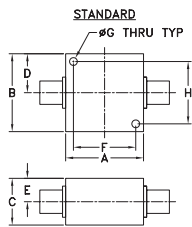
Permanent damage may occur if any of these limits are exceeded.

### Coaxial Connections

Input SMA-Female

Output F-Male

### Outline Drawing

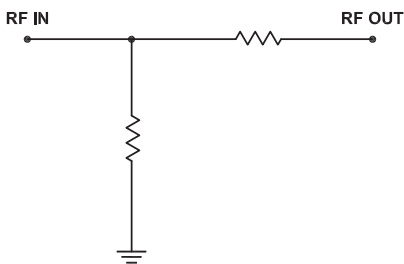


### Outline Dimensions (inch mm)

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

### Functional Schematic



### Features

- Minimum loss pad
- Wideband coverage, DC-2500MHz
- Connectorized package

### Applications

- Impedance matching
- Cable / CATV & Broadband Fiber Networks



CASE STYLE: H16

Connectors Model

75Ω F-M Z7550R-FMSF+

50Ω S-F

### +RoHS Compliant

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

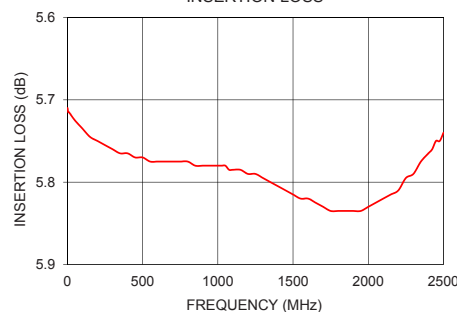
### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range	-	DC	-	2500	MHz
Insertion Loss	10	-	5.7	6.0	dB
	950-2500	-	5.9	6.3	
VSWR	10	-	-	1.2	:1
	950-2500	-	-	1.6	
Power	DC-2500	-	-	0.25	W

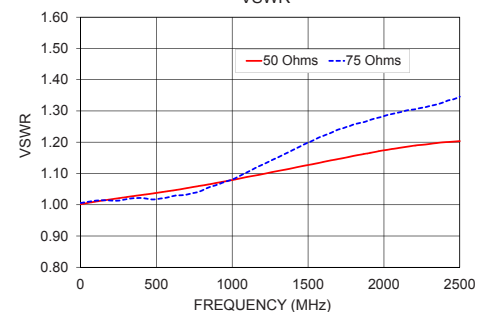
### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	VSWR	
		50 Ω	75 Ω
10	5.72	1.00	1.01
50	5.73	1.01	1.01
100	5.74	1.01	1.01
250	5.76	1.02	1.01
950	5.78	1.07	1.07
1500	5.82	1.13	1.20
2000	5.83	1.17	1.28
2150	5.82	1.19	1.30
2300	5.79	1.19	1.32
2500	5.74	1.20	1.35

Z7550R-FMSF+  
INSERTION LOSS



Z7550R-FMSF+  
VSWR



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# Matching Transformer

# Z7550R-FMSF+

## Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS (50Ω)	OUTPUT RETURN LOSS (75Ω)
(MHz)	(dB)	(dB)	(dB)
1.00	5.71	60.98	51.20
5.00	5.72	59.71	50.53
10.00	5.72	58.87	49.95
50.00	5.73	50.55	46.69
100.00	5.74	46.08	43.81
150.00	5.75	43.34	43.02
200.00	5.75	41.43	43.53
220.00	5.76	40.71	43.87
240.00	5.76	40.10	43.92
250.00	5.76	39.74	43.67
265.00	5.76	39.35	43.08
270.00	5.76	39.16	42.78
275.00	5.76	39.02	42.57
290.00	5.76	38.70	41.74
300.00	5.76	38.44	41.24
320.00	5.77	37.94	40.39
340.00	5.77	37.48	39.88
375.00	5.77	36.76	39.48
395.00	5.77	36.43	39.41
400.00	5.77	36.33	39.48
425.00	5.77	35.90	39.94
440.00	5.77	35.65	40.50
465.00	5.77	35.24	41.42
480.00	5.77	34.99	41.54
500.00	5.77	34.65	41.11
515.00	5.77	34.40	40.61
545.00	5.78	33.93	39.75
560.00	5.78	33.71	39.27
595.00	5.78	33.22	37.87
600.00	5.78	33.15	37.68
645.00	5.78	32.54	36.61
650.00	5.78	32.49	36.59
680.00	5.78	32.04	36.38
730.00	5.78	31.35	35.06
785.00	5.78	30.68	33.66
840.00	5.78	30.08	31.55
850.00	5.78	29.98	31.27
935.00	5.78	29.03	29.39
940.00	5.78	29.00	29.28
945.00	5.78	28.93	29.16
950.00	5.78	28.89	29.05
955.00	5.78	28.85	28.97
960.00	5.78	28.79	28.88
985.00	5.78	28.54	28.50
995.00	5.78	28.45	28.34
1000.00	5.78	28.41	28.23
1050.00	5.78	27.90	27.12
1100.00	5.79	27.41	26.10
1150.00	5.79	27.02	25.16
1200.00	5.79	26.63	24.40
1400.00	5.81	25.14	21.88
1500.00	5.82	24.48	20.88
1700.00	5.83	23.33	19.38
1900.00	5.84	22.37	18.50
2000.00	5.83	21.93	18.12
2050.00	5.83	21.75	17.95
2100.00	5.82	21.59	17.81
2150.00	5.82	21.43	17.65
2300.00	5.80	21.17	17.44
2500.00	5.79	21.06	17.31



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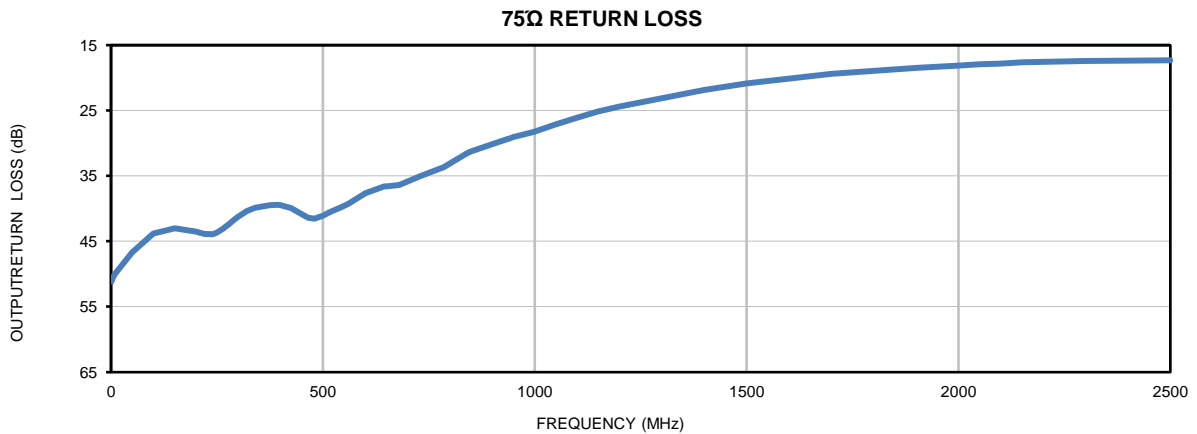


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IF/RF MICROWAVE COMPONENTS

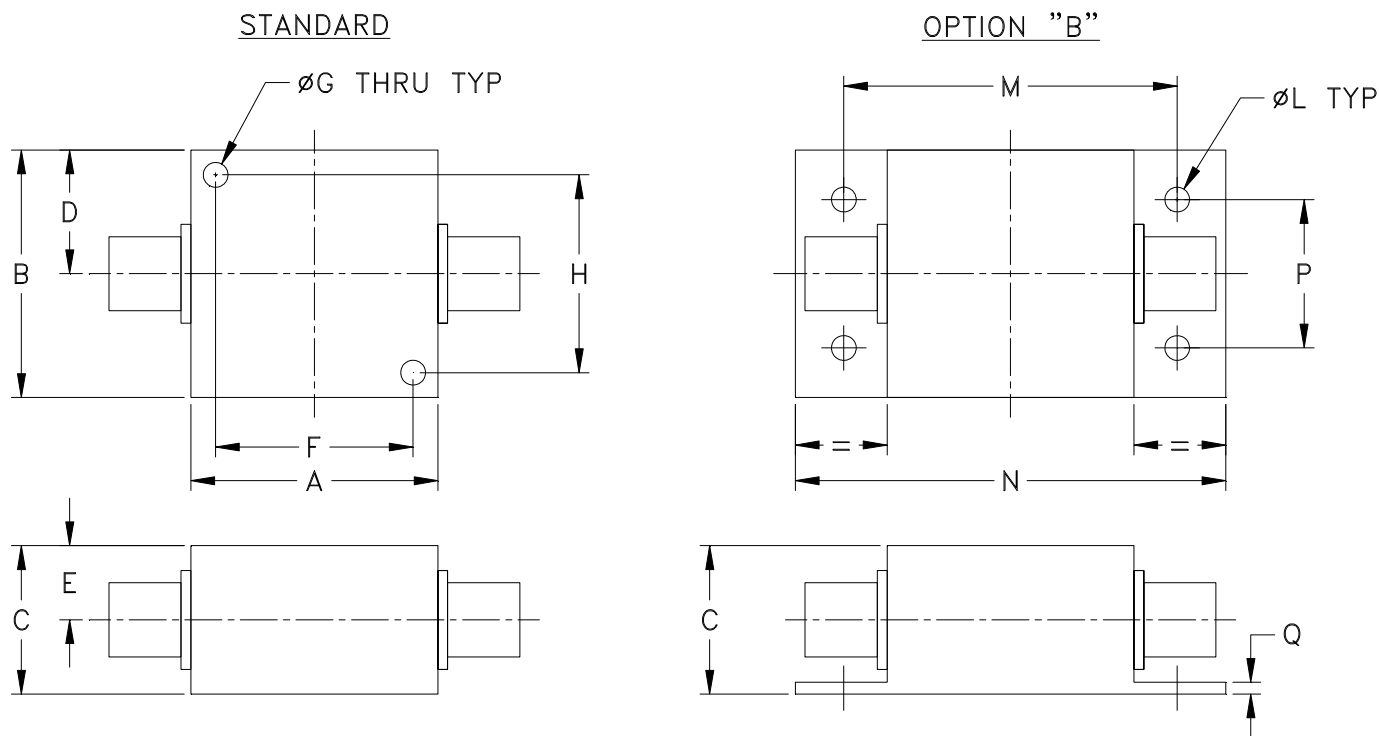
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## Typical Performance Curves



## Outline Dimensions

H16



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.

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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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