BULKHEAD

Adapter

24FPM-24F+

50Ω DC to 50 GHz 2.4 mm-Female to 2.4 mm-Female

THE BIG DEAL

- Ultra-Wideband, DC-50 GHz
- Flat Response
- Low Insertion Loss, 0.11 dB
- Excellent VSWR, 1.04:1



Generic photo used for illustration purposes only

Model No.	24FPM-24F+
Case Style	DJ3008
Connectors	2.4 mm-F to 2.4 mm-F

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- 5G mmW,
- KA/KU band
- Satellite Communications

PRODUCT OVERVIEW

Mini-Circuits' 24FPM-24F+ is a wideband bulkhead adapter supporting a wide range of applications from DC to 50 GHz. This model provides excellent VSWR, low insertion loss, and flat response versus frequency. The 24FPM-24F+ features passivated stainless steel construction and measures only 0.77" in length.

KEY FEATURES

Features	Advantages
Wideband, DC to 50 GHz	Wide frequency range provides application flexibility and makes this model ideal for broadband and multi-band use.
Excellent VSWR, 1.04:1	Provides good matching for 50Ω systems and minimizes signal reflections across wide frequency range.
Low insertion loss, 0.11 dB	Provides excellent signal power transmission from input to output.
Passivated stainless steel construction	Stands up to wear and tear in demanding environments and provides excellent reliability.
Very wide operating temperature range, -55 to +100˚C	Withstands extreme operating conditions and is suitable for use near high power componentry where heat rise is common

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range	—	DC	—	50	GHz
Insertion Loss	DC-10	—	0.05	0.2	dB
	10-20	—	0.08	0.2	
	20-40	—	0.11	0.2	
	40-50	—	0.13	0.25	
VSWR	DC-10	—	1.01	1.2	:1
	10-20	—	1.01	1.2	
	20-40	—	1.04	1.2	
	40-50	—	1.04	1.2	

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C

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

BULKHEAD

Adapter

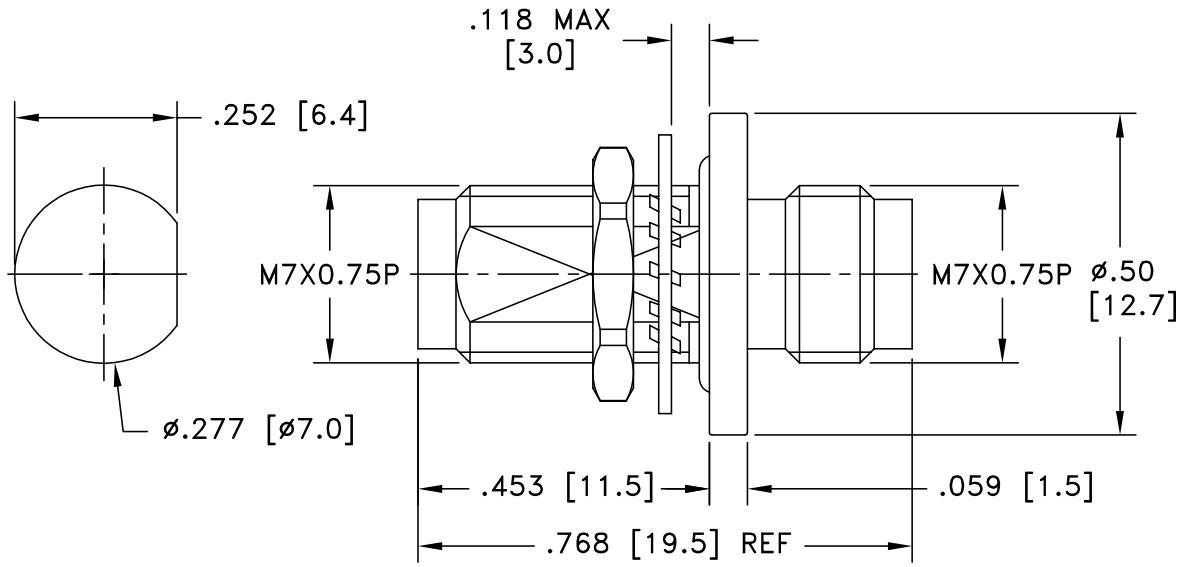
24FPM-24F+

50Ω DC to 50 GHz 2.4 mm-Female to 2.4 mm-Female

COAXIAL CONNECTIONS

Connector 1	2.4 mm-F
Connector 2	2.4 mm-F

OUTLINE DRAWING



Weight: 4.8 grams
Dimensions are in inches [mm]

OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	wt
0.362	0.276	--	0.720	--	grams
9.20	7.00	--	18.30	--	5.0

BULKHEAD

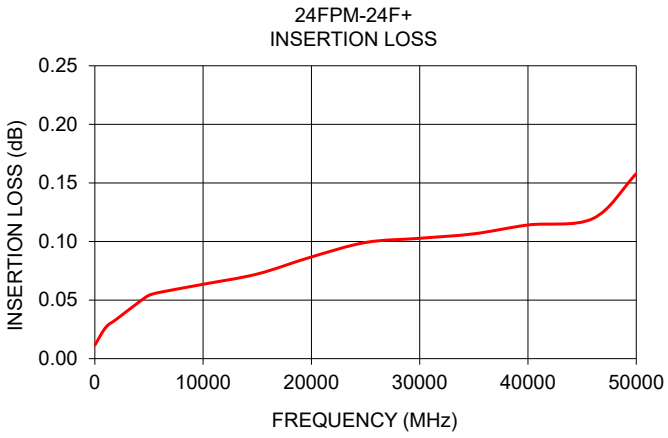
Adapter

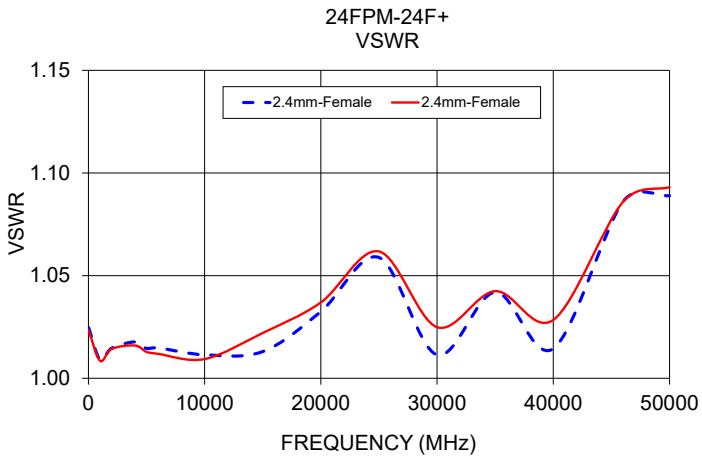
24FPM-24F+

50Ω DC to 50 GHz 2.4 mm-Female to 2.4 mm-Female

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	
		2.4 mm-Female	2.4 mm-Male
10	0.01	1.02	1.02
100	0.01	1.00	1.00
500	0.02	1.01	1.01
2000	0.03	1.01	1.01
4000	0.05	1.02	1.02
6000	0.06	1.01	1.01
10000	0.06	1.01	1.01
15000	0.07	1.01	1.02
20000	0.09	1.03	1.04
25000	0.10	1.06	1.06
30000	0.10	1.01	1.02
35000	0.11	1.04	1.04
40000	0.11	1.01	1.03
46000	0.12	1.09	1.09
50000	0.16	1.09	1.09





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/terms/viewterm.html

Adaptor 2.4mm-Female to 2.4mm-Female 24FPM-24F+

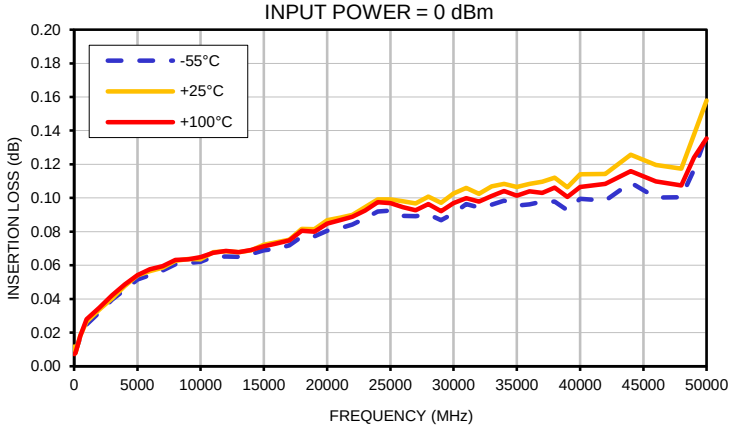
Typical Performance Data

FREQ.	INSERTION LOSS			2.4mm-Female 1 VSWR			2.4mm-Female 2 VSWR		
(MHz)	(dB)			(:1)			(:1)		
	@-55˚C	@25°C	@+100°C	@-55˚C	@25°C	@+100°C	@-55˚C	@25°C	@+100°C
10	0.01	0.01	0.01	1.02	1.02	1.02	1.02	1.02	1.02
100	0.01	0.01	0.01	1.00	1.00	1.00	1.00	1.00	1.00
500	0.02	0.02	0.02	1.01	1.01	1.01	1.01	1.01	1.01
1000	0.02	0.03	0.03	1.01	1.01	1.01	1.01	1.01	1.01
2000	0.03	0.03	0.03	1.01	1.01	1.02	1.01	1.01	1.02
3000	0.04	0.04	0.04	1.02	1.02	1.02	1.02	1.02	1.02
4000	0.05	0.05	0.05	1.02	1.02	1.02	1.02	1.02	1.02
5000	0.05	0.05	0.05	1.01	1.01	1.02	1.01	1.01	1.01
6000	0.05	0.06	0.06	1.01	1.01	1.02	1.01	1.01	1.01
7000	0.06	0.06	0.06	1.01	1.01	1.01	1.01	1.01	1.01
8000	0.06	0.06	0.06	1.00	1.00	1.00	1.01	1.00	1.00
9000	0.06	0.06	0.06	1.01	1.01	1.01	1.01	1.01	1.00
10000	0.06	0.06	0.06	1.01	1.01	1.01	1.01	1.01	1.01
11000	0.07	0.07	0.07	1.01	1.01	1.01	1.01	1.02	1.01
12000	0.07	0.07	0.07	1.02	1.02	1.02	1.01	1.02	1.02
13000	0.07	0.07	0.07	1.02	1.02	1.02	1.02	1.02	1.02
14000	0.07	0.07	0.07	1.02	1.01	1.01	1.01	1.02	1.02
15000	0.07	0.07	0.07	1.02	1.01	1.01	1.01	1.02	1.02
16000	0.07	0.07	0.07	1.02	1.01	1.01	1.01	1.02	1.02
17000	0.07	0.08	0.07	1.02	1.01	1.01	1.01	1.02	1.02
18000	0.08	0.08	0.08	1.03	1.02	1.02	1.02	1.03	1.03
19000	0.08	0.08	0.08	1.03	1.02	1.03	1.02	1.03	1.03
20000	0.08	0.09	0.08	1.04	1.03	1.04	1.03	1.04	1.04
21000	0.08	0.09	0.09	1.05	1.04	1.05	1.04	1.05	1.05
22000	0.08	0.09	0.09	1.05	1.05	1.05	1.05	1.05	1.06
23000	0.09	0.09	0.09	1.05	1.05	1.06	1.05	1.06	1.06
24000	0.09	0.10	0.10	1.06	1.06	1.06	1.06	1.06	1.06
25000	0.09	0.10	0.10	1.06	1.06	1.06	1.06	1.06	1.06
26000	0.09	0.10	0.09	1.06	1.06	1.06	1.06	1.06	1.06
27000	0.09	0.10	0.09	1.06	1.05	1.05	1.05	1.05	1.05
28000	0.09	0.10	0.10	1.05	1.04	1.04	1.04	1.04	1.04
29000	0.09	0.10	0.09	1.04	1.02	1.03	1.03	1.03	1.03
30000	0.09	0.10	0.10	1.03	1.01	1.01	1.02	1.02	1.02
31000	0.10	0.11	0.10	1.02	1.01	1.00	1.00	1.02	1.02
32000	0.09	0.10	0.10	1.02	1.01	1.01	1.01	1.03	1.02
33000	0.10	0.11	0.10	1.03	1.03	1.02	1.03	1.03	1.03
34000	0.10	0.11	0.10	1.04	1.04	1.04	1.04	1.04	1.04
35000	0.10	0.11	0.10	1.04	1.04	1.04	1.04	1.04	1.04
36000	0.10	0.11	0.10	1.04	1.04	1.04	1.04	1.04	1.04
37000	0.10	0.11	0.10	1.04	1.04	1.04	1.04	1.04	1.04
38000	0.10	0.11	0.11	1.03	1.04	1.03	1.04	1.03	1.03
39000	0.09	0.11	0.10	1.03	1.03	1.02	1.02	1.03	1.03
40000	0.10	0.11	0.11	1.02	1.01	1.01	1.01	1.03	1.03
42000	0.10	0.11	0.11	1.03	1.02	1.03	1.02	1.03	1.03
44000	0.11	0.13	0.12	1.05	1.05	1.05	1.04	1.05	1.05
46000	0.10	0.12	0.11	1.09	1.09	1.08	1.08	1.09	1.09
48000	0.10	0.12	0.11	1.09	1.08	1.08	1.08	1.09	1.08
49000	0.12	0.14	0.12	1.09	1.08	1.07	1.09	1.09	1.08
50000	0.14	0.16	0.14	1.10	1.09	1.09	1.09	1.09	1.08

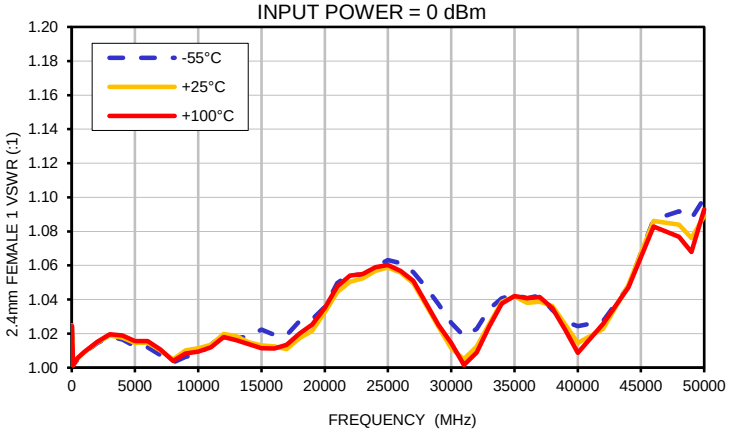
Adaptor 2.4mm-Female to 2.4mm-Female 24FPM-24F+

Typical Performance Curves

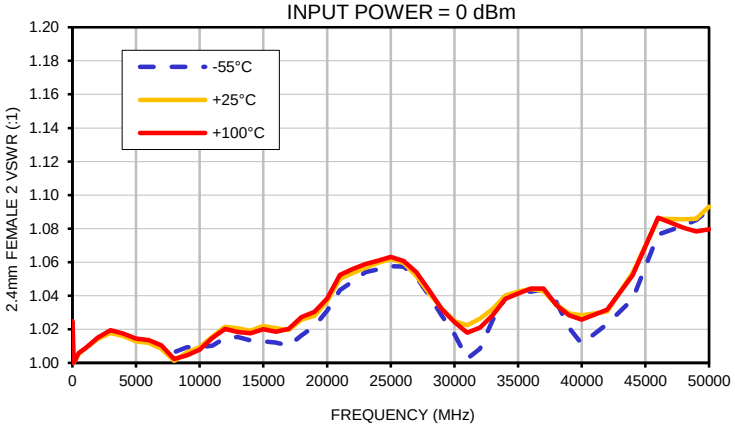
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



2.4mm Female 1 VSWR vs. TEMPERATURE
INPUT POWER = 0 dBm

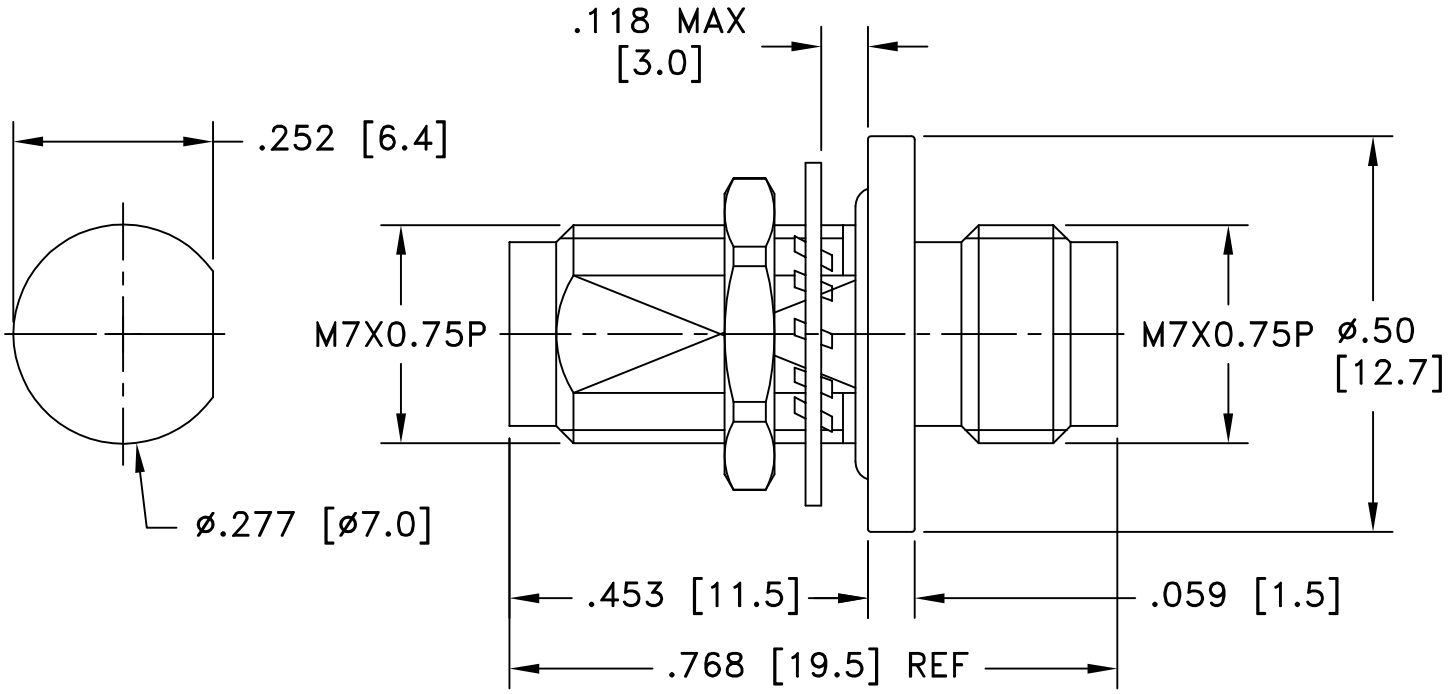


2.4mm Female 2 VSWR vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style DJ

Outline Dimensions DJ3008



Weight: 4.8 grams

Dimensions are in inches (mm). Tolerances: 2 Pl.± .03; 3 Pl. ± .015

Notes:
1. Case material: Stainless Steel.
2. Finish: Passivation.

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Environmental Specifications **ENV106**

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 or -55° to 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, conditionB-3,except over -55° to 100°C
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12

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