



Mini-Circuits

LTCC COAXIAL

Bandpass Filter

ZBFHK-K1272+

50Ω 11.9 to 12.8 GHz 2.92mm Female

KEY FEATURES

- Low Insertion Loss, 3.8 dB Typ.
- Return Loss, 10 dB Typ.
- Stopband Rejection, 90 dB Typ.
- Broadband Connectorized Package
- Power Handling: 1 Watts

APPLICATIONS

- Ku Band Satellite

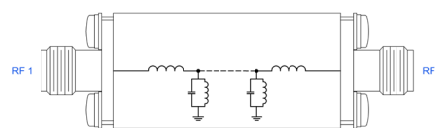
PRODUCT OVERVIEW

ZBFHK-K1272+ is a 50Ω band pass filter built in broad band connectorized package. Covering 11.9-12.8 GHz bandwidth, these units offer good matching within the passband and good rejection in stopband. ZBFHK-K1272+ offer low insertion loss, and excellent power handling capability. It handles up to 1 W RF input power and provides a wide operating temperature range from -55°C to 125°C.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency ²	—	—	—	12.3	—	GHz
	Insertion Loss	F1-F2	11.9 - 12.8	—	3.8	5.0	dB
	Return Loss	F1-F2	11.9 - 12.8	—	10	—	dB
Stopband, Lower	Rejection	DC-F3	0.1 - 8.6	70	80	—	dB
Stopband, Upper	Rejection	F4-F5	16.7 - 18	70	90	—	dB
		F5-F6	18 - 31	70	80	—	
		F6-F7	31 - 38	55	70	—	

1. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

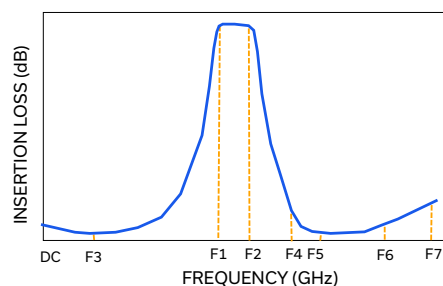
2. Typical variation $\pm 5\%$

ABSOLUTE MAXIMUM RATINGS³

Parameter	Ratings
Operating Temperature	-55°C to +125°C
Storage Temperature	-55°C to +125°C
Input Power	1 W

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

TYPICAL FREQUENCY RESPONSE



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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. OR
ECO-029018
EDU4810
ZBFHK-K1272+
MCINU
260326

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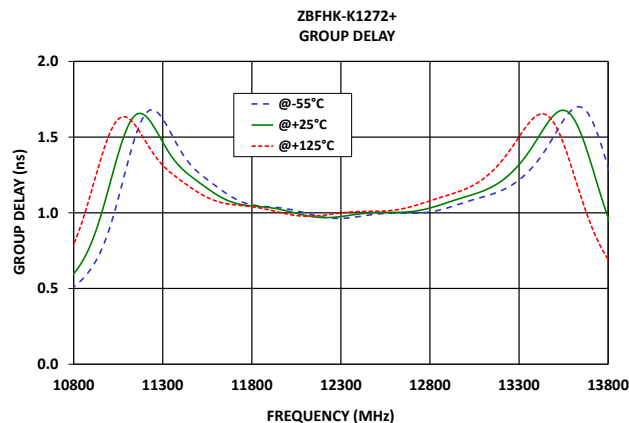
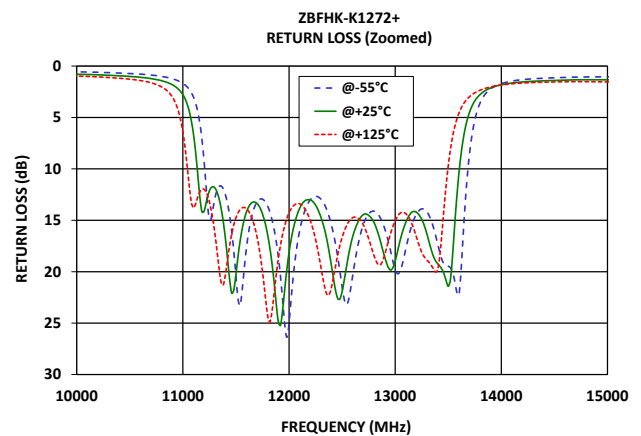
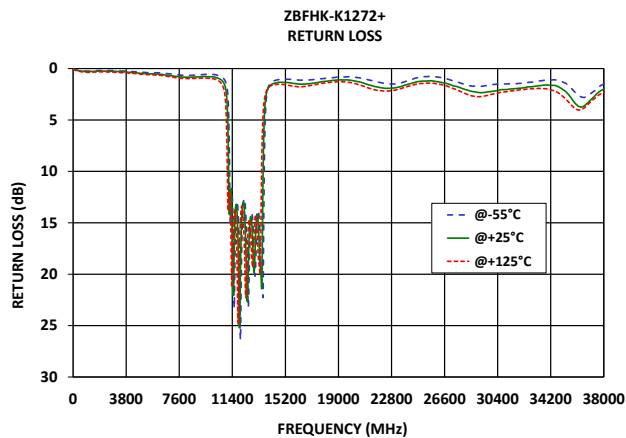
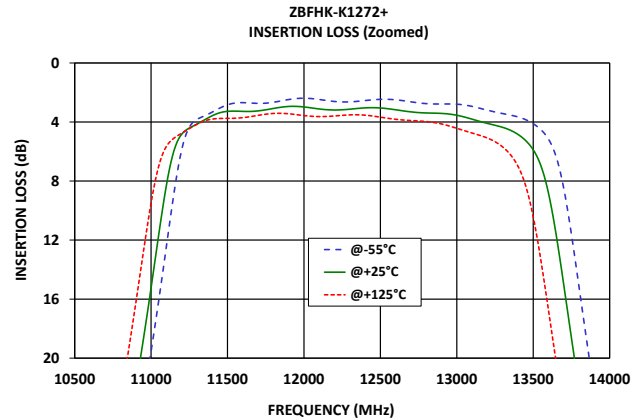
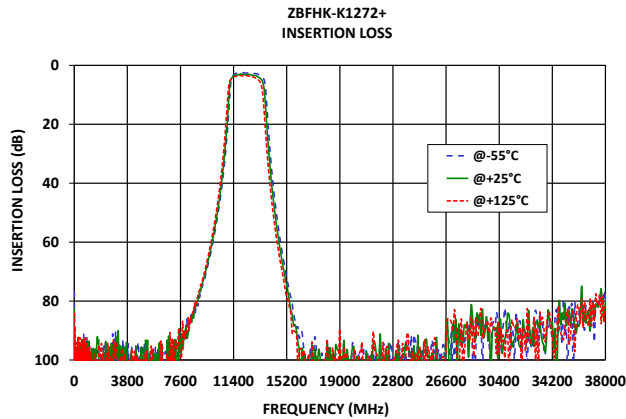
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TYPICAL PERFORMANCE GRAPHS





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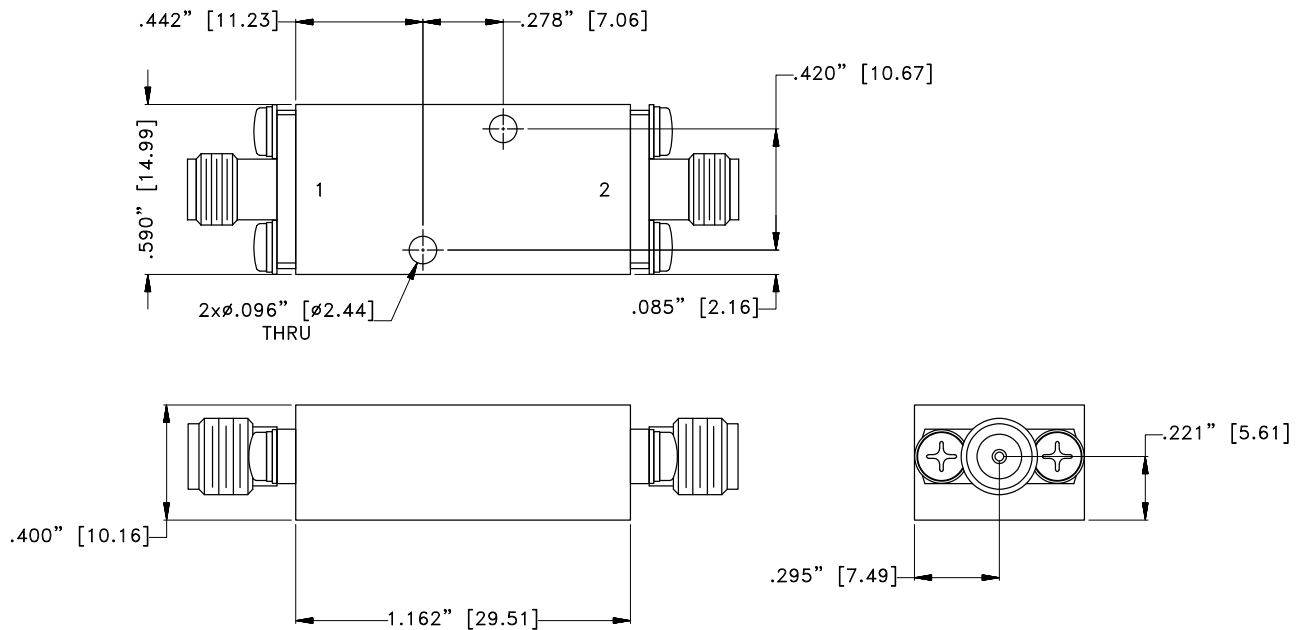
50Ω 11.9 to 12.8 GHz 2.92mm Female

CONNECTOR DESCRIPTION

Function	Connector
RF1 ⁴	2.92mm Female
RF2 ⁴	2.92mm Female

4. This filter is bi-directional, RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

CASE STYLE DRAWING



Weight: 37 grams

Dimensions are in inches (mm). Tolerances: 2Pl ± .030 [.76]; 3Pl ± .015 [.38]

PRODUCT MARKING*: ZBFHK-K1272+

*Marking may contain other features or characters for internal lot control.



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50Ω 11.9 to 12.8 GHz 2.92mm Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	BBW3851
RoHS Status	Compliant
Environmental Ratings	ENV124

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-Circuits' 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



Coaxial Band Pass Filter

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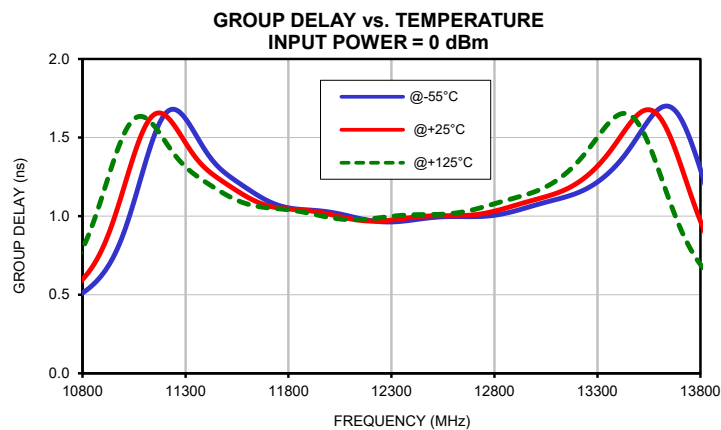
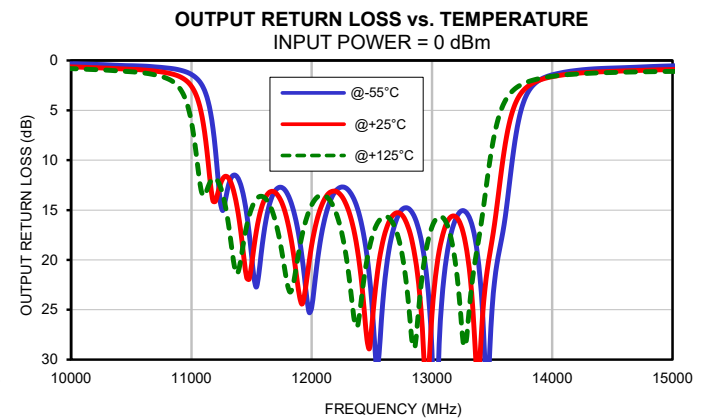
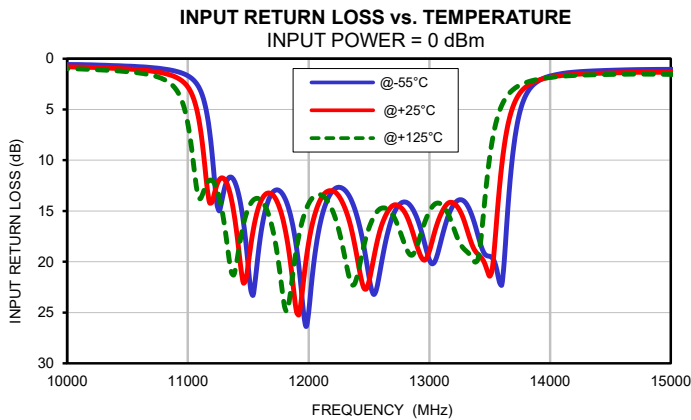
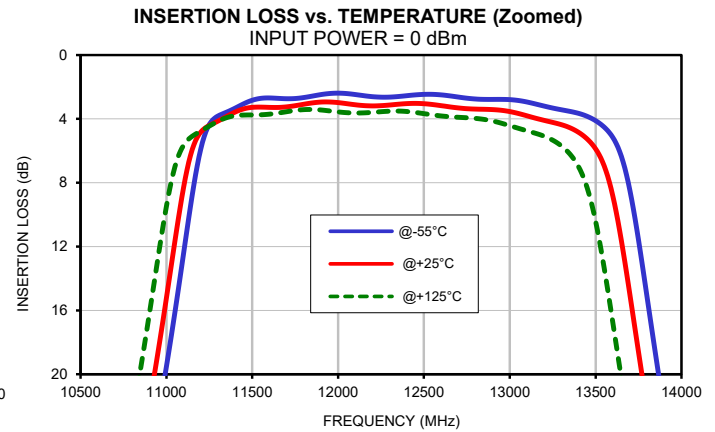
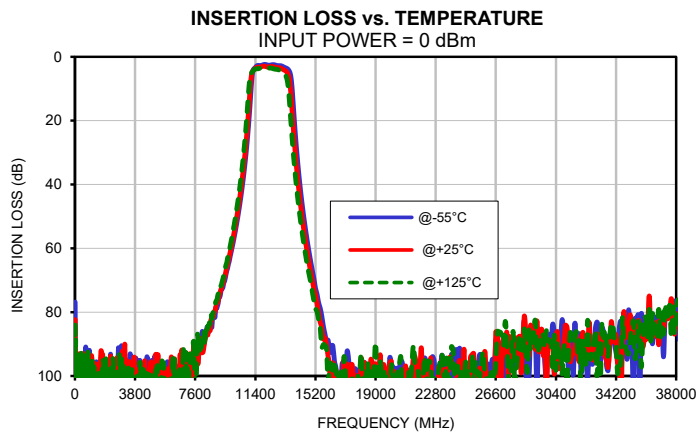
Typical Performance Data

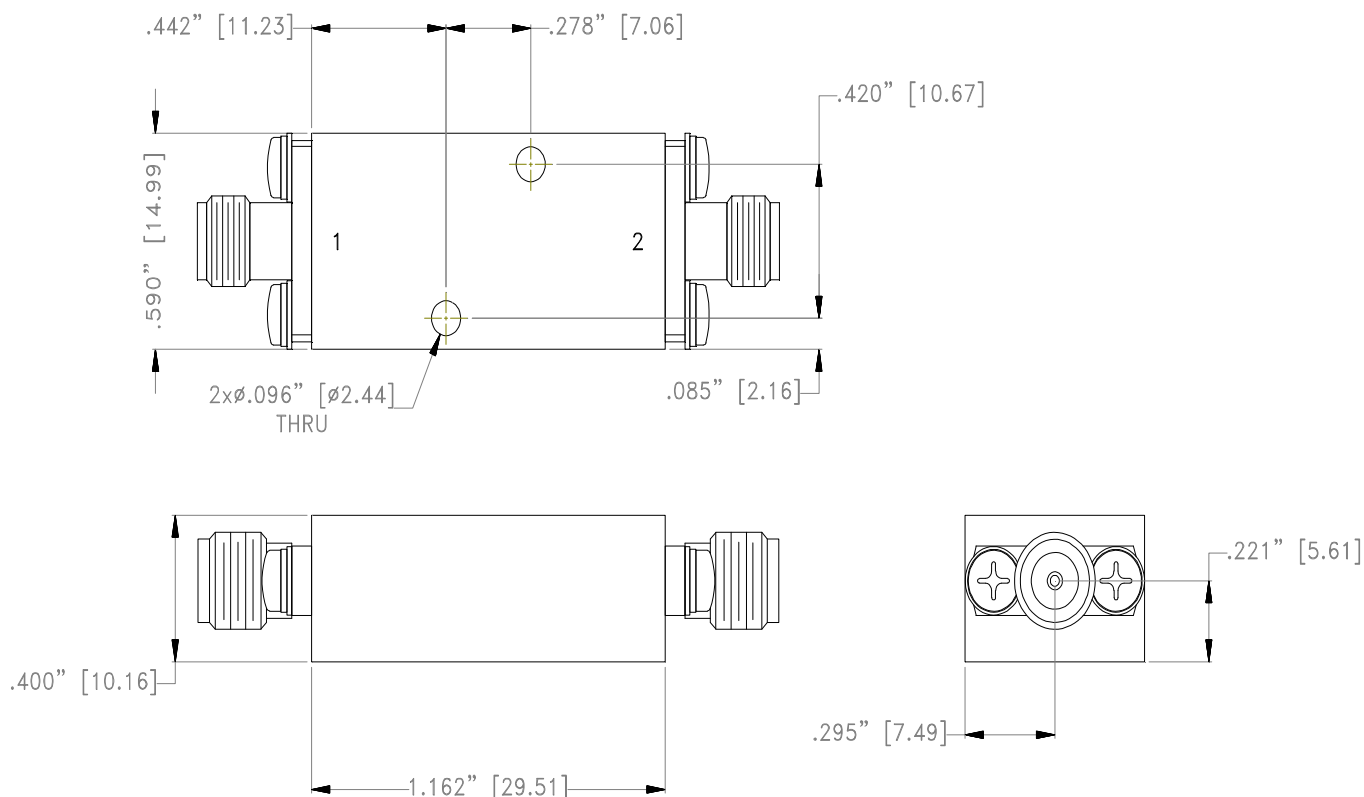
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10	76.86	82.37	84.04	0.02	0.04	0.06	0.03	0.05	0.07
100	99.40	111.19	99.72	0.07	0.08	0.13	0.02	0.05	0.10
500	95.37	99.36	108.72	0.19	0.22	0.29	0.12	0.17	0.23
1000	109.35	101.66	102.04	0.24	0.29	0.36	0.15	0.22	0.28
1500	106.10	96.44	97.91	0.21	0.27	0.34	0.08	0.17	0.23
2000	105.43	105.63	104.76	0.18	0.24	0.32	0.06	0.15	0.22
2500	108.45	99.70	100.39	0.18	0.25	0.33	0.06	0.16	0.22
3000	100.88	92.18	94.45	0.19	0.26	0.34	0.05	0.17	0.24
3500	93.38	98.52	111.66	0.24	0.32	0.40	0.08	0.20	0.27
4000	100.53	102.15	104.74	0.28	0.36	0.45	0.07	0.21	0.28
4500	107.40	101.02	99.20	0.32	0.41	0.49	0.15	0.30	0.37
5000	96.53	102.62	99.90	0.36	0.47	0.55	0.19	0.34	0.41
5500	101.71	99.58	95.27	0.39	0.51	0.60	0.17	0.35	0.43
6000	95.89	102.34	105.18	0.41	0.55	0.64	0.16	0.34	0.43
6500	97.26	109.88	101.42	0.45	0.60	0.70	0.21	0.40	0.50
7000	98.65	95.72	92.58	0.52	0.68	0.80	0.24	0.45	0.55
7500	97.37	89.61	89.31	0.60	0.77	0.90	0.33	0.54	0.64
8000	89.59	88.20	90.70	0.66	0.84	0.97	0.37	0.59	0.70
8600	83.13	82.23	80.72	0.65	0.83	0.96	0.31	0.56	0.68
9000	78.12	76.98	75.54	0.62	0.81	0.95	0.34	0.60	0.72
9500	69.35	68.29	66.26	0.56	0.77	0.92	0.30	0.58	0.72
10000	58.15	56.71	54.46	0.57	0.80	0.98	0.33	0.64	0.82
10740	33.72	30.76	26.28	0.92	1.30	1.75	0.69	1.13	1.57
10920	24.47	20.66	14.87	1.30	1.94	3.36	1.01	1.72	3.10
11000	19.53	15.23	9.49	1.68	2.78	6.42	1.40	2.58	6.14
11100	12.43	8.30	5.66	3.02	6.63	13.79	2.75	6.41	13.59
11840	2.59	3.01	3.41	14.96	19.23	23.85	14.68	18.70	22.83
11900	2.48	2.95	3.44	18.62	24.93	18.69	18.04	23.71	18.76
12000	2.39	2.98	3.56	25.04	18.15	14.28	24.78	18.53	14.50
12100	2.47	3.11	3.63	16.01	13.83	13.40	16.34	14.07	13.53
12500	2.46	3.05	3.67	21.47	21.93	16.67	24.25	26.64	17.81
12600	2.50	3.17	3.82	20.35	16.57	14.74	23.08	17.73	15.66
12720	2.66	3.33	3.91	14.89	14.38	15.90	15.54	15.28	17.74
12300	2.64	3.13	3.52	12.94	14.68	19.53	12.94	14.84	20.73
12400	2.55	3.04	3.54	15.49	19.44	21.51	15.66	20.67	25.25
12500	2.46	3.05	3.67	21.47	21.93	16.67	24.25	26.64	17.81
12600	2.50	3.17	3.82	20.35	16.57	14.74	23.08	17.73	15.66
12800	2.75	3.39	3.97	14.11	15.20	18.41	14.81	16.65	23.75
13620	5.55	9.85	18.16	20.02	8.63	4.12	14.74	7.65	3.82
13780	13.73	20.74	28.75	4.12	2.98	2.44	3.63	2.77	2.22
13940	24.96	30.92	37.60	1.96	1.98	1.94	1.68	1.79	1.70
14000	28.68	34.27	40.52	1.71	1.82	1.84	1.44	1.62	1.59
15000	66.89	69.80	73.49	1.05	1.34	1.54	0.54	0.91	1.10
16000	88.80	93.86	101.78	1.09	1.48	1.75	0.58	1.02	1.26
16700	100.42	106.58	99.33	1.11	1.50	1.71	0.66	1.11	1.31
17000	106.74	94.86	94.51	1.10	1.46	1.64	0.67	1.11	1.27
18000	97.74	105.16	98.72	0.96	1.25	1.41	0.57	0.97	1.12
19000	100.67	96.29	89.46	0.82	1.11	1.28	0.41	0.81	0.98
20000	96.50	95.43	96.63	0.82	1.16	1.40	0.44	0.87	1.10
24000	107.74	97.36	100.36	1.17	1.52	1.72	0.94	1.44	1.69
24500	93.72	102.82	99.61	0.94	1.33	1.54	0.80	1.34	1.60
25000	106.45	94.22	107.33	0.81	1.22	1.45	0.76	1.29	1.56
28000	91.94	89.10	92.23	1.52	2.00	2.38	0.71	1.20	1.47
30000	86.91	88.82	89.40	1.56	2.22	2.49	1.30	2.14	2.55
31000	90.66	84.17	89.94	1.50	2.04	2.25	1.69	2.41	2.70
32000	99.17	94.60	107.75	1.44	1.91	2.06	1.27	1.80	1.99
33000	83.09	86.98	100.01	1.29	1.74	1.96	0.79	1.28	1.52
34000	88.65	87.41	83.91	1.11	1.61	2.00	0.47	1.01	1.37
35000	79.25	86.29	93.08	1.29	1.97	2.64	0.40	1.11	1.60
38000	80.20	80.62	81.16	1.50	1.99	2.31	1.48	2.15	2.46

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
11900	1.04	1.03	1.02
11920	1.04	1.03	1.01
11940	1.04	1.03	1.01
11960	1.03	1.02	1.00
11980	1.03	1.02	1.00
12000	1.03	1.01	0.99
12020	1.02	1.01	0.99
12040	1.02	1.00	0.98
12060	1.01	0.99	0.98
12080	1.00	0.99	0.98
12100	1.00	0.98	0.98
12120	0.99	0.98	0.98
12140	0.99	0.97	0.98
12160	0.98	0.97	0.98
12180	0.98	0.97	0.98
12200	0.97	0.97	0.98
12220	0.97	0.97	0.99
12240	0.97	0.97	0.99
12260	0.96	0.97	0.99
12280	0.96	0.97	1.00
12300	0.96	0.98	1.00
12320	0.96	0.98	1.00
12340	0.97	0.98	1.00
12360	0.97	0.99	1.01
12380	0.97	0.99	1.01
12400	0.98	0.99	1.01
12420	0.98	0.99	1.01
12440	0.98	1.00	1.01
12460	0.99	1.00	1.01
12480	0.99	1.00	1.01
12500	0.99	1.00	1.01
12520	0.99	1.00	1.01
12540	1.00	1.00	1.01
12560	1.00	1.00	1.01
12580	1.00	1.00	1.02
12600	1.00	1.00	1.02
12700	1.00	1.01	1.04
12720	1.00	1.01	1.05
12780	1.00	1.03	1.07
12800	1.01	1.03	1.08

Typical Performance Curves





Dimensions are in inches [mm]. Tolerances: 2 Pl $\pm .030$ [.76]; 3 Pl $\pm .015$ [.38]

Notes:

1. Case material: Brass alloy.
2. Case finish:
 - a. Case & Cover of the units-Gold plating.
3. Unit weight: 37g
4. 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



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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.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 125° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 125° C Ambient Environment	Individual Model Data Sheet