



Mini-Circuits

(CERAMIC RESONATOR) COAXIAL

Bandpass Filter

ZCBP4-434-75-F+

75Ω 433 to 435 MHz F Female/Male

KEY FEATURES

- Narrow Band Design with Fast Roll-off
- High Rejection, 70 dB Typ.
- Good Insertion Loss, 3.8 dB Typ.

APPLICATIONS

- Cable TV
- ISM Band
- Medical Communication

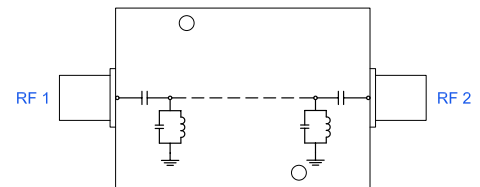
PRODUCT OVERVIEW

All our coaxial-ceramic resonator filters are built with rugged construction. Excellent repeatability across units is achieved through precise tuning and process control.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	434	—	MHz
	Insertion Loss	F1-F2	433 - 435	—	3.8	4.5	dB
	Return Loss	F1-F2	433 - 435	12	16	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 380	60	70	—	dB
		F3-F4	380 - 423	20	29	—	
Stopband, Upper	Rejection	F5-F6	444 - 500	20	27	—	dB
		F6-F7	500 - 1000	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.

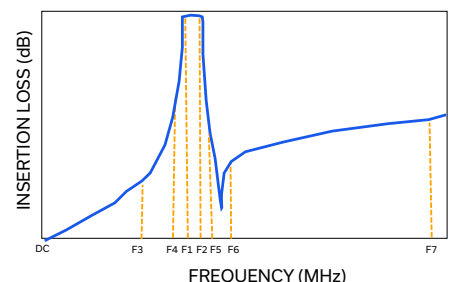
ABSOLUTE MAXIMUM RATINGS²

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ³	10 W at +25°C

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

3. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 2 W at +85°C.

TYPICAL FREQUENCY RESPONSE



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REV. A
ECO-027931
ZCBP4-434-75-F+
EDU5199
URJ
25121110

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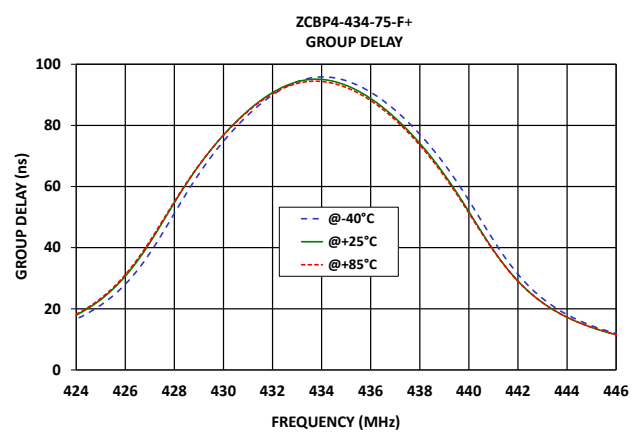
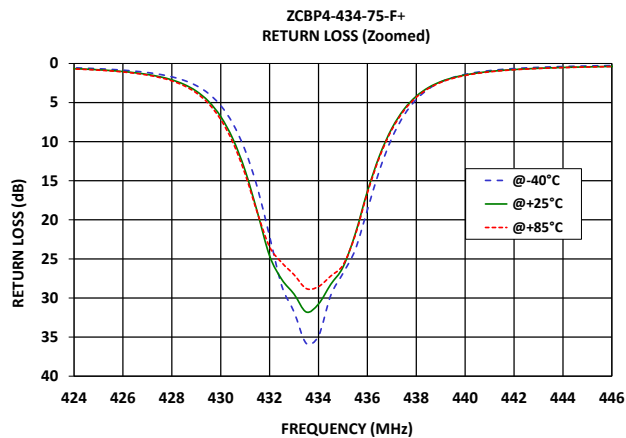
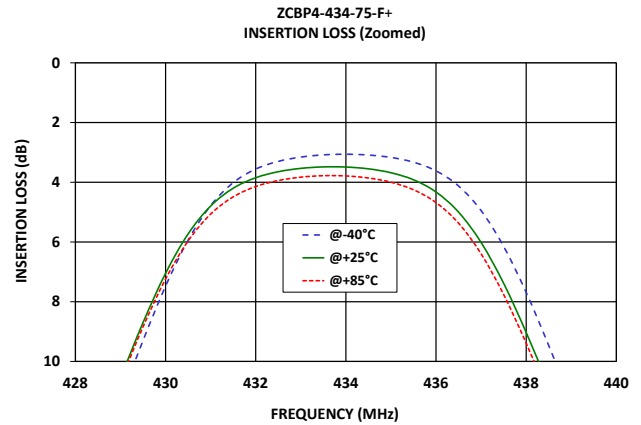
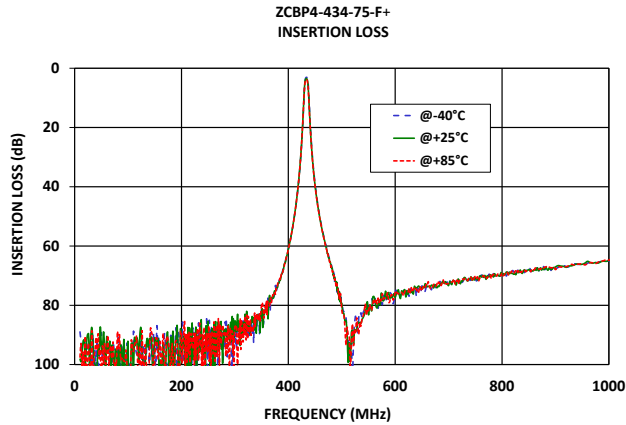
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TYPICAL PERFORMANCE GRAPHS





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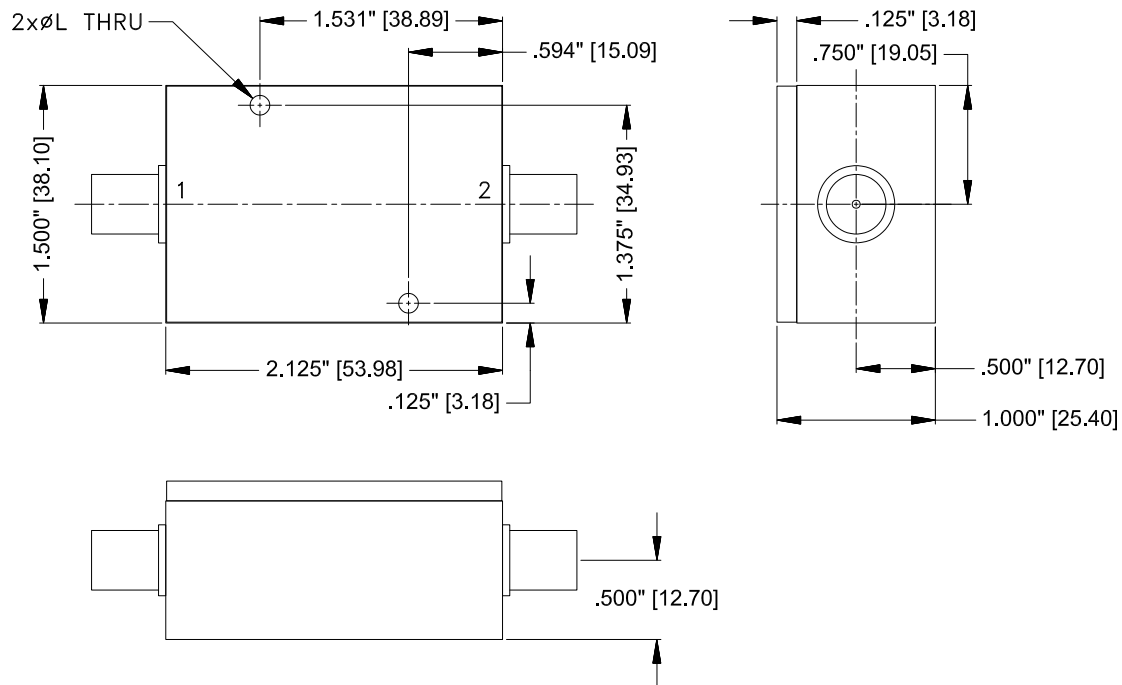
75Ω 433 to 435 MHz F Female/Male

CONNECTOR DESCRIPTION

Function	Connector
RF1 ⁴	F Female
RF2 ⁴	F Male

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

CASE STYLE DRAWING



Weight: 130 grams

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

PRODUCT MARKING*: ZCBP4-434-75-F+

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





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Bandpass Filter

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	VQ2072
RoHS Status	Compliant
Environmental Ratings	ENV125

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



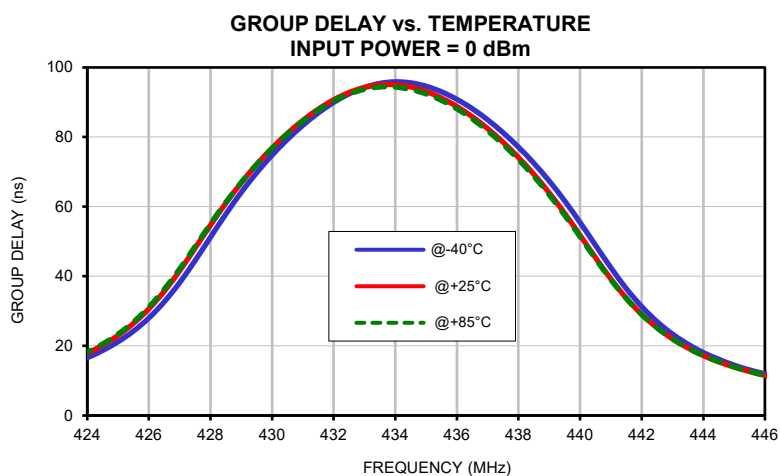
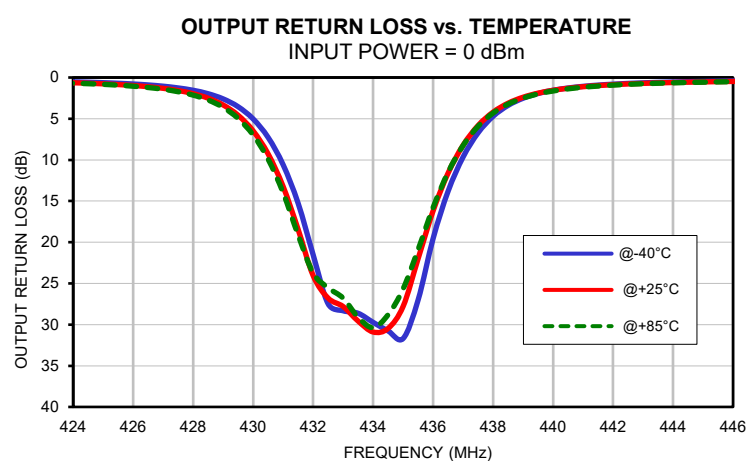
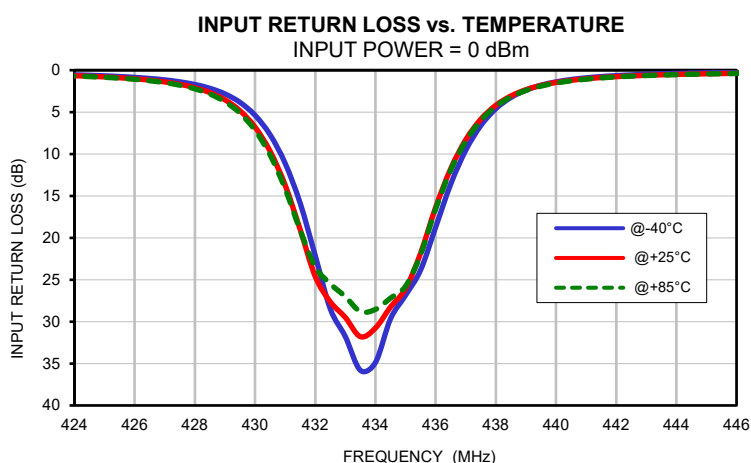
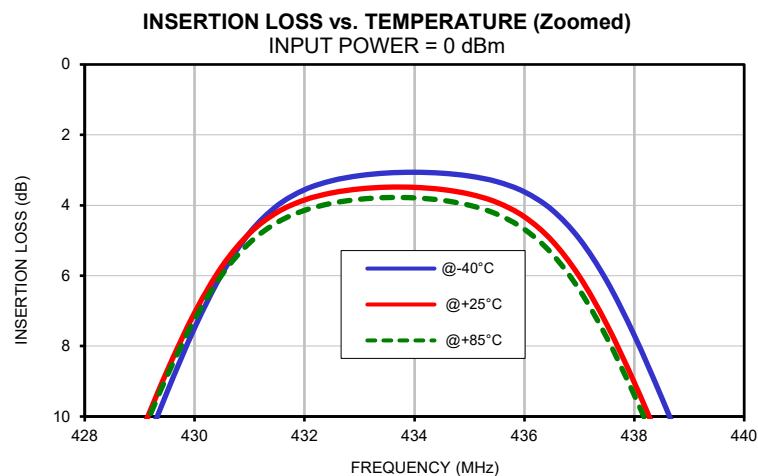
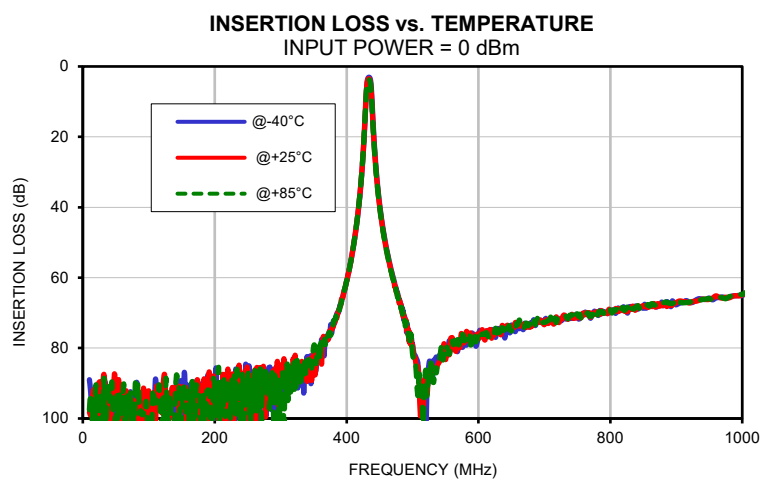
Typical Performance Data

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
10.0	88.98	98.20	97.50	0.00	0.00	0.00	0.00	0.00	0.00
20.0	95.70	100.08	90.42	0.00	0.00	0.00	0.00	0.00	0.00
40.0	100.96	100.85	90.81	0.00	0.01	0.00	0.01	0.01	0.01
50.0	89.20	93.49	106.88	0.00	0.01	0.00	0.00	0.01	0.01
80.0	96.12	105.43	88.79	0.00	0.01	0.00	0.01	0.01	0.01
100.0	95.68	92.75	101.27	0.00	0.02	0.01	0.01	0.02	0.03
150.0	95.91	91.11	98.11	0.01	0.03	0.00	0.03	0.05	0.05
200.0	99.07	90.63	89.98	0.01	0.04	0.02	0.06	0.08	0.09
210.0	101.09	100.94	99.26	0.01	0.04	0.02	0.05	0.08	0.08
220.0	91.40	85.95	92.91	0.02	0.04	0.02	0.06	0.08	0.09
230.0	106.55	96.36	87.86	0.01	0.04	0.03	0.07	0.09	0.10
240.0	92.20	96.02	104.65	0.01	0.05	0.03	0.08	0.10	0.11
250.0	91.24	86.71	93.24	0.00	0.05	0.04	0.09	0.11	0.12
260.0	97.03	107.25	96.17	0.00	0.05	0.04	0.09	0.11	0.13
270.0	89.03	94.69	85.66	0.00	0.05	0.05	0.10	0.12	0.13
280.0	88.11	91.93	89.57	0.00	0.06	0.04	0.10	0.13	0.14
300.0	89.87	85.29	87.15	0.01	0.06	0.05	0.11	0.14	0.15
380.0	72.27	73.95	72.77	0.04	0.11	0.11	0.16	0.19	0.20
400.0	61.07	61.03	60.90	0.09	0.15	0.16	0.19	0.22	0.24
423.0	30.58	30.13	30.18	0.47	0.56	0.60	0.45	0.55	0.59
426.0	22.29	21.66	21.69	0.86	1.03	1.09	0.79	0.97	1.06
428.0	15.23	14.48	14.54	1.71	2.09	2.22	1.55	1.96	2.14
430.0	7.48	7.05	7.24	5.38	6.79	7.17	5.03	6.49	6.98
433.0	3.16	3.53	3.83	31.79	29.50	27.02	28.32	27.81	26.79
433.5	3.08	3.49	3.78	35.81	31.79	28.79	28.63	29.58	29.12
434.0	3.06	3.49	3.79	34.88	30.77	28.54	29.73	30.90	30.37
434.5	3.09	3.55	3.86	29.67	28.26	27.19	30.77	30.46	28.79
435.0	3.17	3.68	4.00	26.86	26.07	25.79	31.69	27.79	25.66
435.5	3.33	3.92	4.25	23.85	21.83	22.00	27.00	21.99	20.89
436.0	3.62	4.33	4.68	18.74	16.37	16.57	19.54	16.18	15.79
440.0	15.12	16.38	16.65	1.39	1.47	1.53	1.55	1.55	1.64
442.0	21.80	22.82	23.05	0.65	0.77	0.80	0.81	0.87	0.92
444.0	27.24	28.10	28.30	0.39	0.51	0.53	0.55	0.61	0.65
446.0	31.76	32.49	32.68	0.26	0.38	0.39	0.42	0.48	0.51
450.0	38.93	39.52	39.68	0.15	0.26	0.26	0.30	0.35	0.38
460.0	51.21	51.63	51.77	0.08	0.18	0.18	0.22	0.26	0.28
470.0	59.49	60.08	60.12	0.08	0.16	0.17	0.20	0.24	0.26
480.0	66.35	67.27	66.80	0.08	0.15	0.17	0.19	0.23	0.25
500.0	78.86	79.27	81.62	0.09	0.16	0.18	0.17	0.21	0.23
520.0	104.27	88.35	86.26	0.09	0.17	0.18	0.16	0.21	0.22
540.0	82.49	84.17	83.68	0.11	0.19	0.20	0.16	0.20	0.22
560.0	80.32	77.01	78.08	0.13	0.20	0.23	0.16	0.20	0.22
580.0	78.42	77.50	77.54	0.15	0.22	0.24	0.14	0.19	0.21
600.0	76.59	77.37	75.74	0.16	0.23	0.25	0.13	0.18	0.20
620.0	74.73	77.20	75.18	0.18	0.25	0.27	0.13	0.17	0.19
640.0	77.16	74.13	74.47	0.20	0.26	0.30	0.11	0.16	0.18
660.0	73.98	73.70	73.30	0.22	0.28	0.31	0.10	0.15	0.17
680.0	72.75	73.59	71.89	0.23	0.30	0.32	0.09	0.14	0.16
700.0	72.74	73.34	72.69	0.25	0.31	0.35	0.08	0.13	0.15
720.0	72.42	71.95	71.68	0.27	0.33	0.37	0.06	0.11	0.14
740.0	71.58	71.16	70.82	0.29	0.35	0.38	0.05	0.10	0.12
760.0	70.12	70.17	70.48	0.31	0.36	0.39	0.03	0.08	0.11
780.0	70.33	69.90	71.04	0.33	0.37	0.41	0.02	0.08	0.10
800.0	69.64	69.94	69.12	0.35	0.39	0.43	0.01	0.07	0.09
820.0	68.26	69.29	69.10	0.36	0.42	0.44	0.00	0.05	0.07
840.0	68.47	68.44	68.14	0.37	0.42	0.45	0.01	0.04	0.06
900.0	67.71	67.07	67.97	0.42	0.47	0.49	0.02	0.02	0.05
920.0	66.99	67.20	66.95	0.43	0.48	0.51	0.03	0.02	0.04
950.0	65.80	66.16	65.91	0.45	0.49	0.52	0.03	0.02	0.04
1000.0	65.08	64.86	64.77	0.47	0.50	0.54	0.01	0.03	0.05

Typical Performance Data

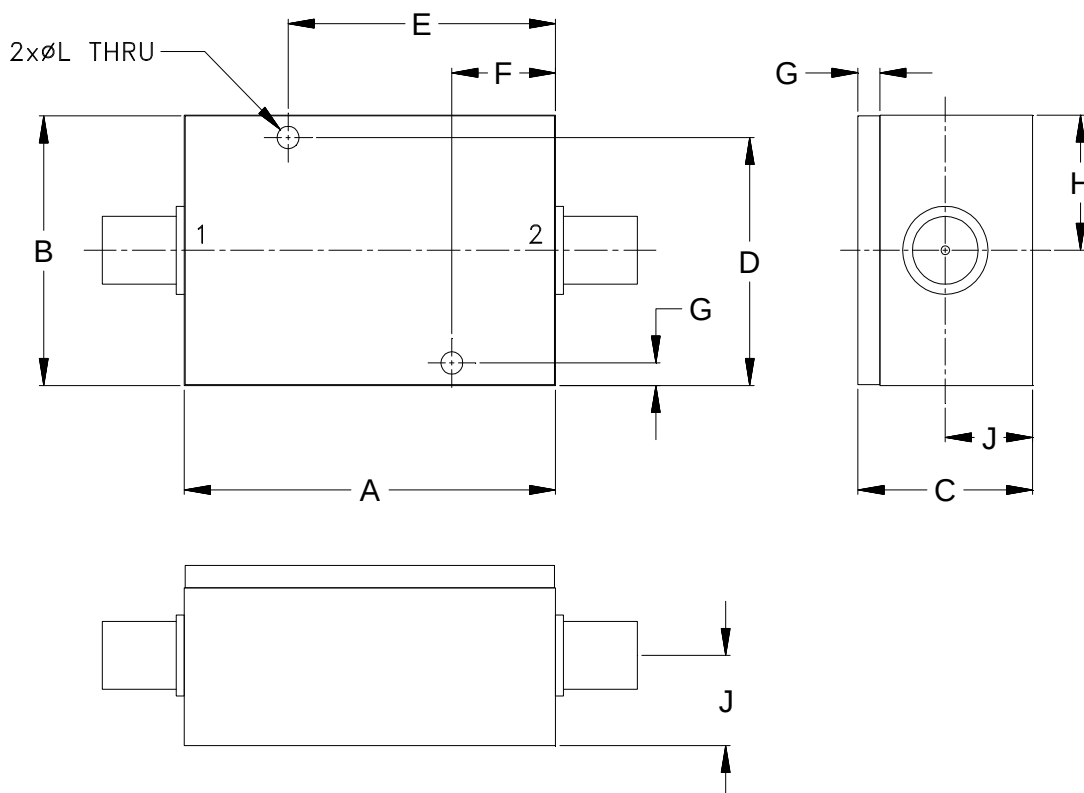
FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
430.0	74.80	76.83	76.78
430.5	79.34	81.06	80.94
431.0	83.38	84.80	84.61
431.5	86.93	88.03	87.76
432.0	89.95	90.71	90.36
432.5	92.41	92.80	92.36
433.0	94.26	94.26	93.72
433.5	95.43	95.01	94.39
434.0	95.87	95.04	94.36
434.5	95.58	94.38	93.68
435.0	94.61	93.09	92.39
435.5	93.01	91.21	90.53
436.0	90.84	88.78	88.12
436.5	88.15	85.85	85.20
437.0	84.95	82.41	81.78
437.5	81.25	78.50	77.88
438.0	77.10	74.13	73.53
438.5	72.48	69.29	68.70
439.0	67.35	63.93	63.38
439.5	61.66	58.07	57.55
440.0	55.46	51.76	51.33

Typical Performance Curves



Outline Dimensions

VQ2072



CASE#	A	B	C	D	E	F	G	H	J	WT. GRAMS
VQ2072	2.125 (53.98)	1.500 (38.10)	1.000 (25.40)	1.375 (34.93)	1.531 (38.89)	0.594 (15.09)	0.125 (3.18)	0.750 (19.05)	0.500 (12.70)	130

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
3. 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



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	-40° to 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet