



CAVITY COAXIAL

# Bandpass Filter

ZVBP-323-S+

50Ω 300 to 346 MHz SMA Female

## KEY FEATURES

- Low Insertion Loss, 0.2dB Typ.
- Good Return Loss, 22dB Typ.
- Great Rejection, 80dB Typ.
- Wide Stopband up to 1500MHz

## APPLICATIONS

- Test & Measurement
- Lab Use

## PRODUCT OVERVIEW

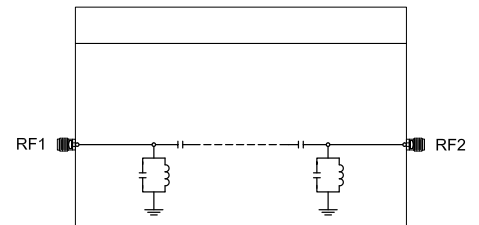
Mini-Circuits' ZVBP-323-S+ is a coaxial cavity filter designed by implementing resonant structures with very high Q and are ideal for narrow-band, high-selectivity applications.

Mini-Circuits' coaxial cavity filters feature a special protective assembly to prevent accidental de-tuning that would otherwise require expensive replacement or return to factory for re-tuning. Precise machining allows realization of cavity filters with small form factors for applications where size is critical.



Generic photo used for illustration purposes only

## FUNCTIONAL DIAGRAM



## ELECTRICAL SPECIFICATIONS<sup>1</sup> AT +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Center Frequency	—	—	—	323	—	MHz
Passband	Insertion Loss	F1-F2	—	0.2	0.6	dB
	Return Loss	F1-F2	300 - 346	16	22	dB
Stop Band, Lower	Rejection	DC-F3	DC - 253	45	52	dB
Stop Band, Upper	Rejection	F4-F5	393 - 500	58	64	dB
		F5-F6	500 - 1500	80	90	dB

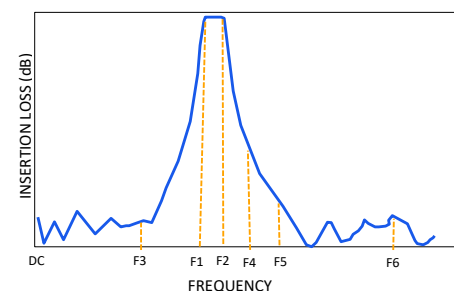
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

## ABSOLUTE MAXIMUM RATINGS<sup>2,3</sup>

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power <sup>4</sup>	50W at +25°C

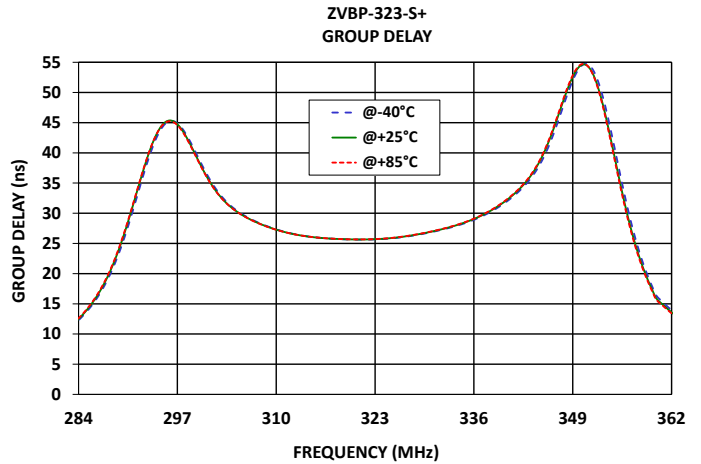
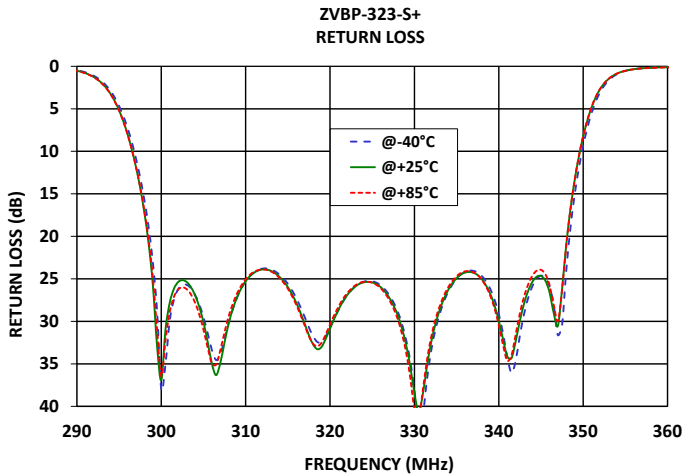
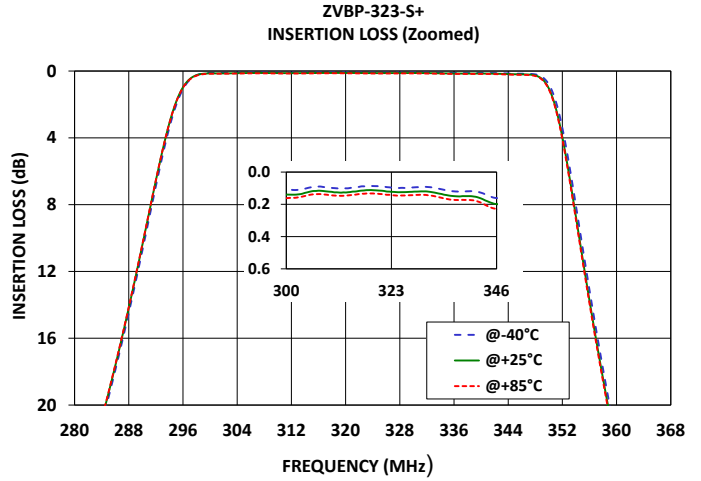
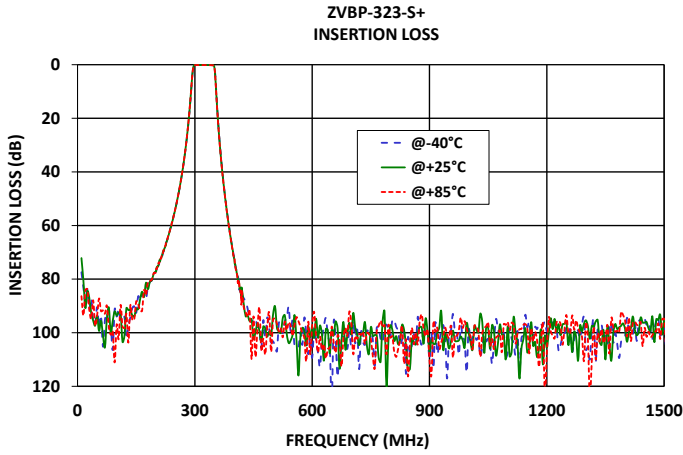
2. Permanent damage may occur if any of these limits are exceeded.
3. Input and output ports are DC short to ground.
4. Power rating applies only to signals within the passband.

## TYPICAL FREQUENCY RESPONSE AT +25°C





### TYPICAL PERFORMANCE GRAPHS



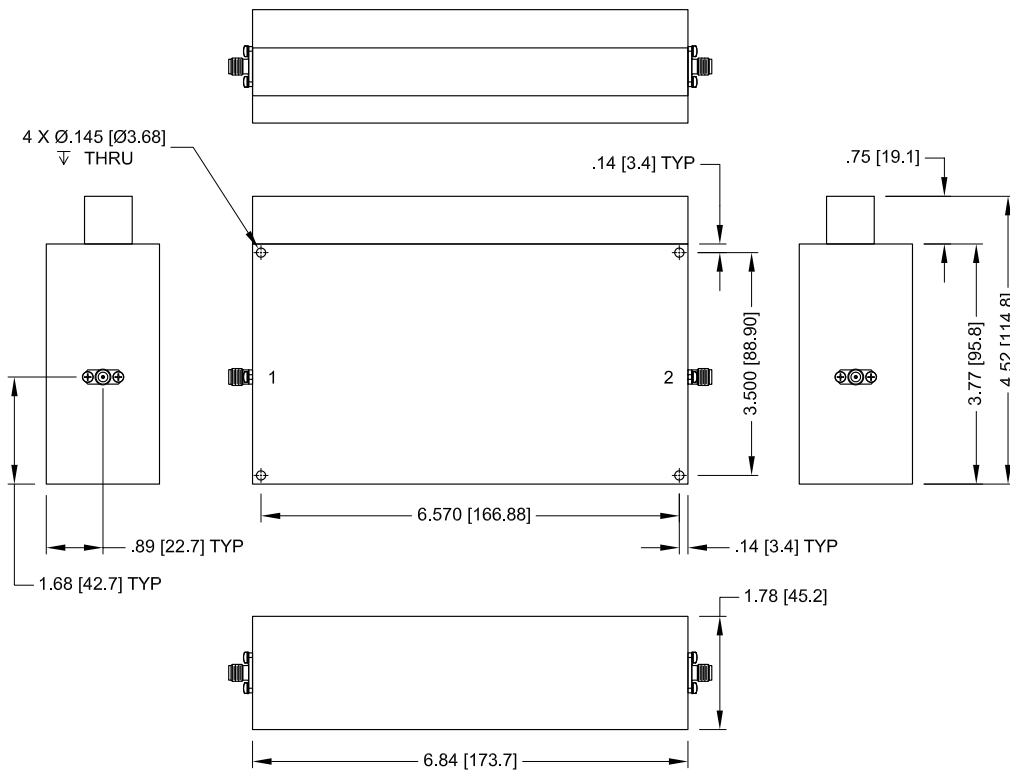


# Bandpass Filter

### CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 <sup>1</sup>	1	SMA Female
RF2 <sup>1</sup>	2	SMA Female

### CASE STYLE DRAWING



Unit Weight: 725 Grams.  
 Dimensions are in inches (mm). Tolerances: 2 Pl. ± .100; 3 Pl. ± .015

### PRODUCT MARKING\*: ZVBP-323-S+

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



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Mini-Circuits

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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	ZQ3557
RoHS Status	Compliant
Environmental Ratings	ENV77T1

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](http://www.minicircuits.com/terms/viewterm.html)



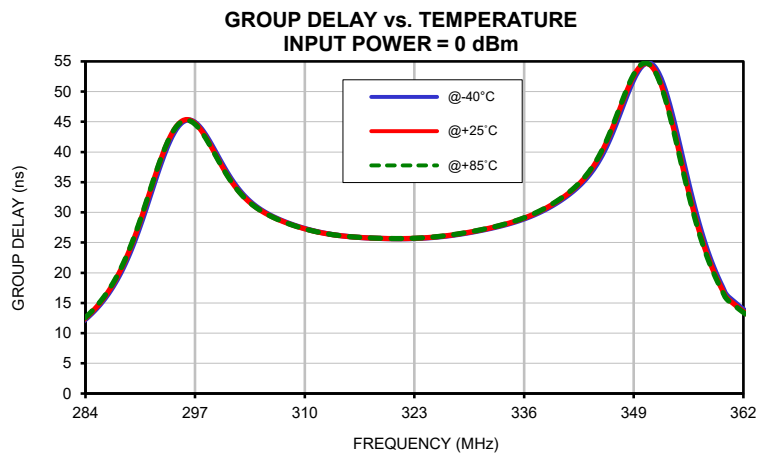
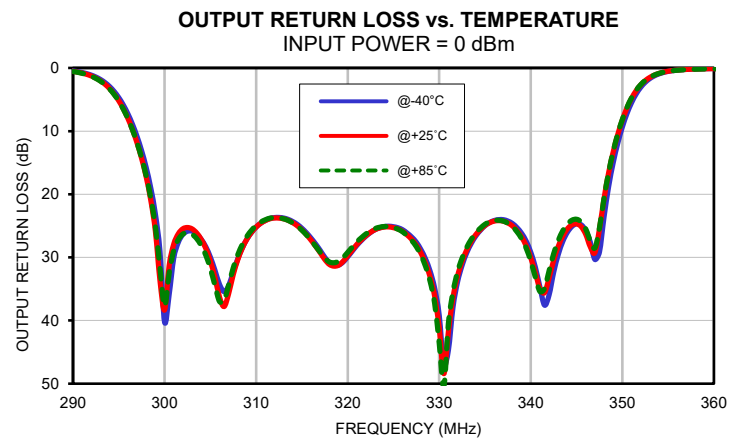
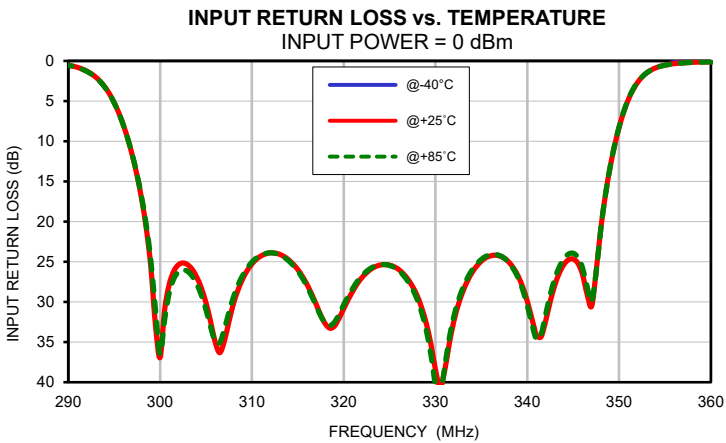
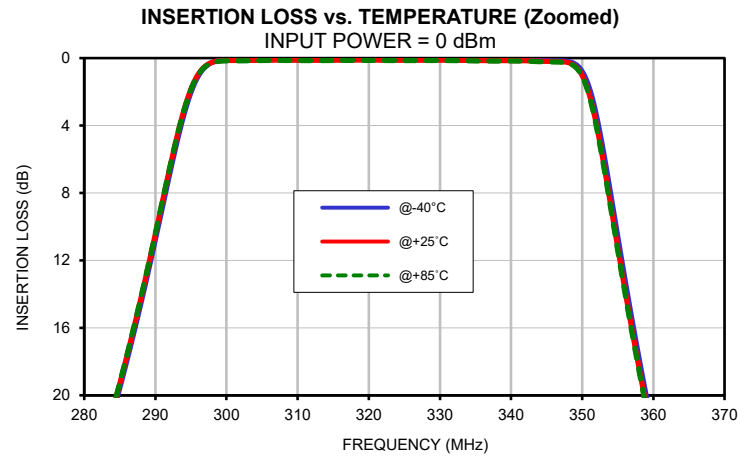
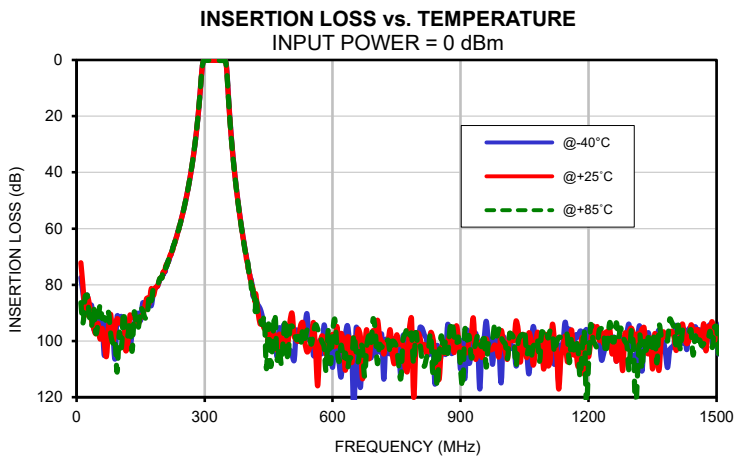
## Typical Performance Data

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
100	93.98	93.61	97.01	0.02	0.00	0.00	0.00	0.00	0.01
120	94.10	101.09	98.23	0.02	0.01	0.00	0.01	0.00	0.00
140	90.84	93.50	95.24	0.02	0.01	0.01	0.01	0.01	0.00
160	87.88	87.49	91.71	0.02	0.01	0.00	0.01	0.01	0.00
180	82.90	83.81	81.05	0.02	0.01	0.00	0.01	0.01	0.00
200	77.27	77.18	77.65	0.02	0.01	0.00	0.01	0.01	0.00
220	69.65	69.21	69.13	0.02	0.01	0.00	0.01	0.00	0.01
253	51.87	51.88	51.83	0.01	0.00	0.01	0.00	0.01	0.01
277	30.54	30.36	30.32	-0.01	0.03	0.04	0.02	0.03	0.04
300	0.11	0.14	0.16	-37.97	36.93	36.49	40.24	38.34	37.73
323	0.10	0.12	0.14	-25.88	25.90	25.77	25.60	25.60	25.43
346	0.16	0.20	0.23	-25.83	26.53	25.68	25.74	26.34	25.50
352	3.42	3.97	4.09	-3.07	2.70	2.66	3.08	2.69	2.66
359	20.06	20.60	20.77	-0.11	0.14	0.15	0.12	0.13	0.16
393	65.75	65.90	66.08	0.01	0.01	0.02	0.00	0.01	0.03
400	71.71	72.18	71.98	0.01	0.00	0.02	0.01	0.01	0.03
420	85.60	83.29	84.33	0.02	0.00	0.01	0.01	0.00	0.02
440	94.84	95.67	91.52	0.02	0.00	0.01	0.01	0.00	0.02
460	97.97	96.45	98.75	0.02	0.00	0.01	0.01	0.00	0.02
480	101.57	98.49	108.15	0.02	0.00	0.01	0.01	0.00	0.02
500	103.17	93.18	95.06	0.02	0.00	0.01	0.01	0.00	0.02
540	90.33	103.84	96.07	0.02	0.00	0.01	0.01	0.01	0.03
560	105.41	103.07	94.19	0.02	0.01	0.02	0.01	0.01	0.03
580	94.33	99.27	102.05	0.02	0.01	0.02	0.01	0.01	0.03
600	109.40	97.63	97.23	0.02	0.00	0.02	0.01	0.01	0.03
620	112.77	97.27	101.46	0.02	0.00	0.01	0.01	0.01	0.03
640	100.73	99.06	105.94	0.02	0.00	0.01	0.01	0.01	0.03
660	102.47	95.76	107.41	0.03	0.00	0.01	0.01	0.01	0.03
680	101.51	96.01	101.83	0.03	0.00	0.01	0.01	0.01	0.03
700	104.97	100.66	96.34	0.03	0.00	0.01	0.01	0.01	0.03
720	113.61	104.67	100.49	0.03	0.00	0.01	0.01	0.01	0.03
740	99.21	104.86	100.11	0.03	0.00	0.02	0.01	0.01	0.03
760	112.31	100.88	113.27	0.03	0.00	0.02	0.01	0.02	0.04
780	103.57	95.83	98.02	0.02	0.01	0.02	0.01	0.02	0.04
800	101.38	97.30	101.83	0.02	0.01	0.02	0.01	0.02	0.04
820	99.32	104.37	105.96	0.02	0.01	0.02	0.01	0.02	0.04
840	115.38	105.23	102.38	0.02	0.01	0.03	0.01	0.02	0.04
860	100.49	103.83	104.31	0.02	0.01	0.03	0.00	0.02	0.04
880	104.41	98.04	93.18	0.02	0.01	0.03	0.00	0.02	0.05
900	110.07	107.12	110.14	0.03	0.01	0.02	0.01	0.02	0.04
950	100.34	105.89	101.87	0.03	0.01	0.02	0.01	0.02	0.04
1000	98.90	100.01	100.24	0.03	0.00	0.02	0.01	0.02	0.04
1050	102.08	98.23	96.20	0.03	0.01	0.03	0.01	0.02	0.05
1100	107.43	97.62	96.01	0.03	0.01	0.04	0.01	0.03	0.05
1150	98.02	107.31	97.91	0.02	0.02	0.04	0.01	0.03	0.06
1200	99.50	105.63	107.56	0.02	0.02	0.04	0.00	0.03	0.06
1250	98.24	95.95	93.38	0.03	0.01	0.04	0.01	0.03	0.06
1255	100.36	104.61	99.94	0.03	0.01	0.04	0.01	0.03	0.06
1300	106.40	95.39	96.14	0.03	0.02	0.04	0.01	0.03	0.06
1350	101.06	109.98	101.82	0.02	0.02	0.05	0.01	0.03	0.07
1380	104.06	98.63	99.25	0.02	0.02	0.05	0.00	0.03	0.07
1400	101.50	98.47	95.36	0.02	0.02	0.05	0.00	0.04	0.07
1420	100.69	93.92	96.25	0.02	0.02	0.05	0.00	0.03	0.07
1430	103.09	100.97	96.99	0.02	0.02	0.05	0.00	0.03	0.07
1450	94.88	96.26	98.21	0.02	0.02	0.05	0.01	0.03	0.07
1460	14.00	98.30	99.60	0.02	0.02	0.05	0.01	0.03	0.07
1470	102.30	93.91	100.94	0.02	0.02	0.05	0.01	0.03	0.07
1480	95.28	94.95	99.45	0.02	0.02	0.05	0.01	0.03	0.07
1490	101.05	93.28	102.34	0.02	0.02	0.05	0.01	0.03	0.07
1500	98.12	95.32	94.86	0.02	0.02	0.05	0.01	0.03	0.07

## Typical Performance Data

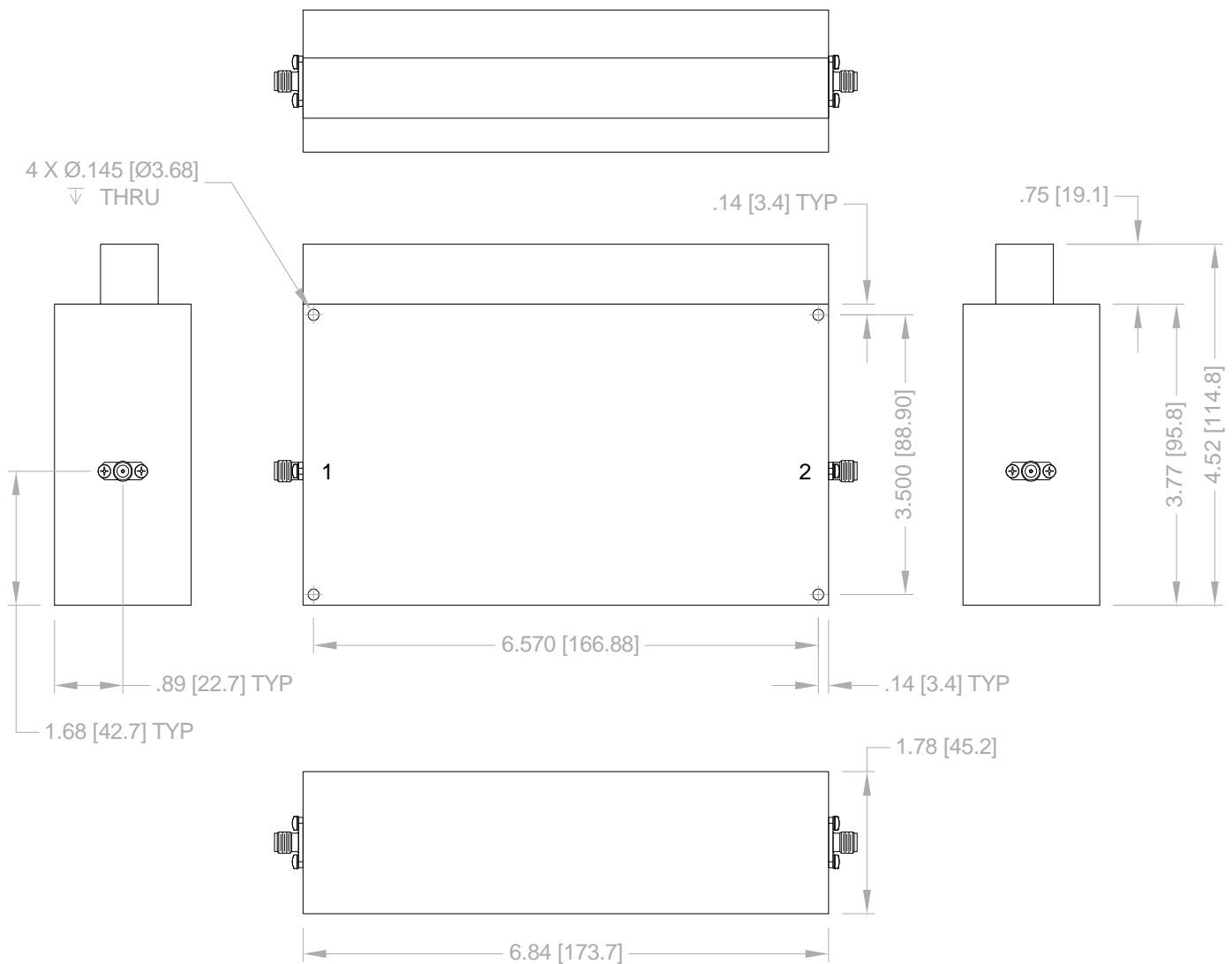
FREQ.  (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
300.0	38.57	38.10	37.98
303.0	32.52	32.26	32.22
305.0	30.27	30.12	30.10
307.0	28.82	28.72	28.70
309.0	27.76	27.70	27.68
310.0	27.33	27.28	27.26
311.0	26.96	26.92	26.91
312.0	26.65	26.62	26.61
313.0	26.39	26.37	26.37
314.0	26.19	26.17	26.18
315.0	26.03	26.02	26.02
316.0	25.90	25.90	25.91
317.0	25.81	25.81	25.82
318.0	25.74	25.74	25.75
319.0	25.68	25.69	25.70
320.0	25.65	25.66	25.67
321.0	25.63	25.65	25.66
322.0	25.64	25.67	25.68
323.0	25.67	25.70	25.72
324.0	25.73	25.77	25.79
325.0	25.82	25.87	25.89
326.0	25.95	26.00	26.03
327.0	26.11	26.17	26.20
328.0	26.30	26.36	26.40
329.0	26.52	26.59	26.62
330.0	26.77	26.84	26.88
332.0	27.33	27.42	27.46
333.0	27.66	27.76	27.80
334.0	28.02	28.13	28.18
335.0	28.43	28.56	28.61
336.0	28.91	29.05	29.11
337.0	29.46	29.62	29.68
338.0	30.09	30.27	30.35
339.0	30.82	31.03	31.11
340.0	31.65	31.89	31.98
341.0	32.61	32.87	32.98
342.0	33.71	34.03	34.14
343.0	35.04	35.42	35.55
344.0	36.69	37.17	37.33
345.0	38.82	39.45	39.65
346.0	41.59	42.37	42.62

## Typical Performance Curves



## Outline Dimensions

ZQ3557



Dimensions are in inches [mm]. Tolerances: 2 Pl.  $\pm .100$ ; 3 Pl.  $\pm .015$

### Notes:

1. Case material: Aluminum.
2. Case Finish: Powder coated over silver plating.
3. Unit Weight: 725 grams.
4. Refer to the individual model data sheet for the type of connectors available.

**Mini-Circuits®**  
ISO 9001 ISO 14001 CERTIFIED

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RF/IF MICROWAVE COMPONENTS





# Environmental Specifications ENV77T1

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	-30° to 70°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-30° to 70° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C