



CAVITY COAXIAL

Bandpass Filter

ZVBP-3R25G-S+

50Ω

3000 to 3500 MHz SMA-Female

KEY FEATURES

- Low Insertion Loss of 0.3 dB Typ.
- Good Return Loss of 19 dB Typ.
- Good Rejection, 61 dB Typ.
- Stopband up to 7800 MHz

APPLICATIONS

- Test & Measurement Equipment
- R&D Lab, Production, and OTA Test Systems

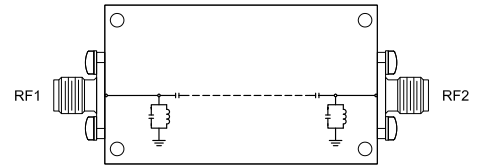
PRODUCT OVERVIEW

Mini-Circuits' ZVBP-3R25G-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 SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	3250	—	MHz
	Insertion Loss	F1-F2	3000 - 3500	—	0.3	0.7	dB
	Return Loss	F1-F2	3000 - 3500	14	19	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 2200	55	61	—	dB
		F3-F4	2200 - 2600	35	40	—	
		F4-F5	2600 - 2850	10	16	—	
Stop Band, Upper	Rejection	F6-F7	3650 - 3800	10	16	—	dB
		F7-F8	3800 - 4100	25	32	—	
		F8-F9	4100 - 7800	45	51	—	

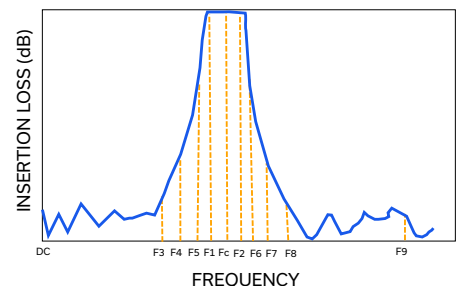
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS^{2,3}

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁴	25 W 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





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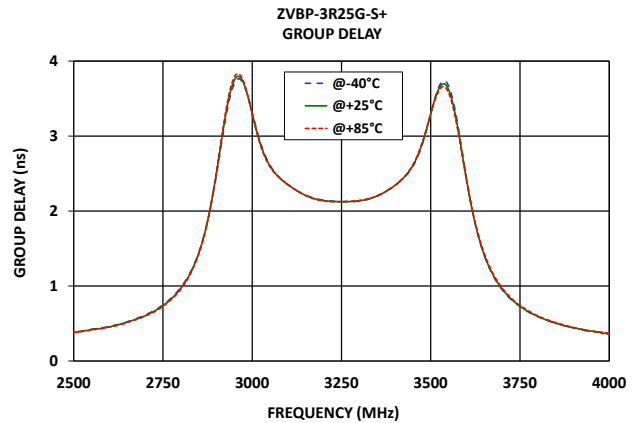
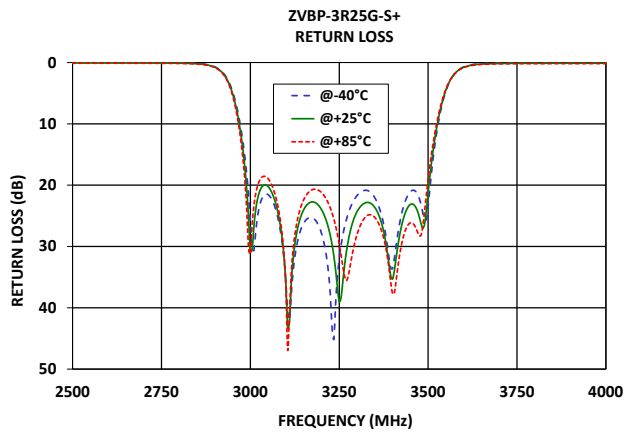
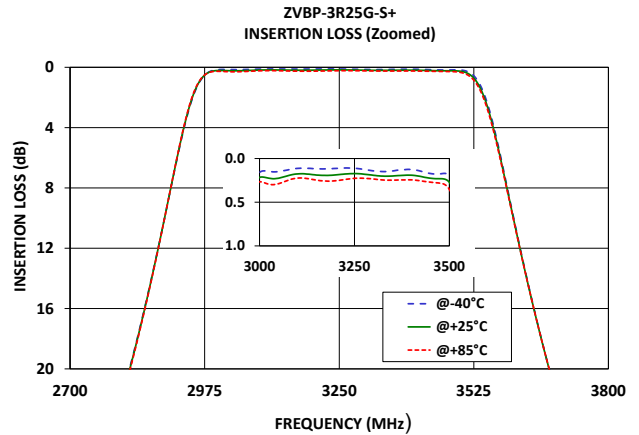
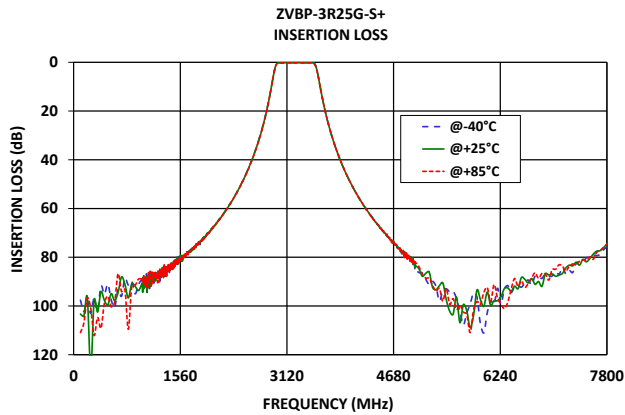
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TYPICAL PERFORMANCE GRAPHS





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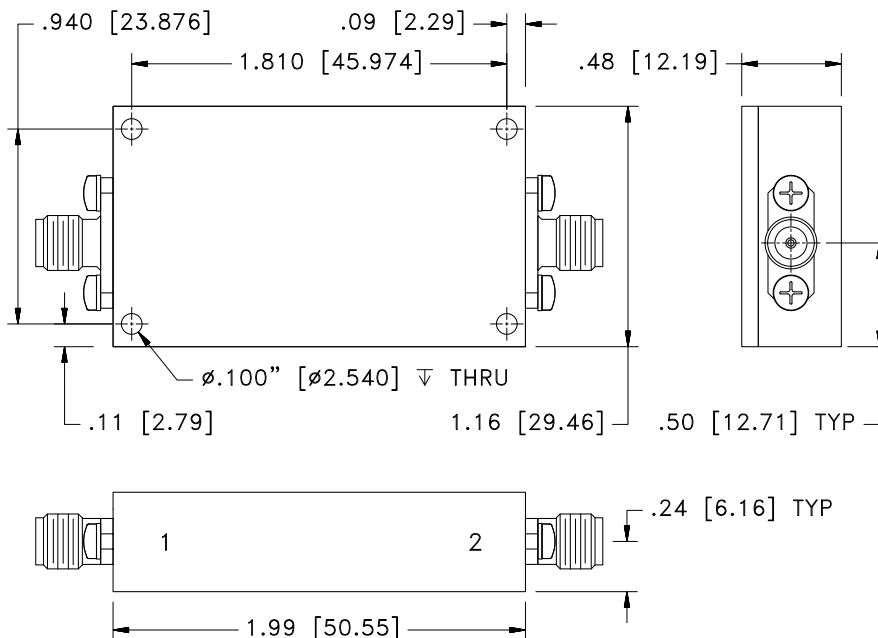
50Ω

3000 to 3500 MHz SMA-Female

CONNECTOR DESCRIPTION

Function	Marking on Unit	Connector
RF1 ¹	1	SMA-Female
RF2 ¹	2	SMA-Female

CASE STYLE DRAWING



Dimensions are in inches [mm]
 Tolerances: 2Pl.±.10 [2.54]; 3 PL.±.015 [.381]
 Unit weight: 87 Grams

PRODUCT MARKING*: ZVBP-3R25G-S+

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



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3000 to 3500 MHz SMA-Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

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Performance Data & Graphs	<p>Data</p> <p>Graphs</p> <p>S-Parameter (S2P Files) Data Set (.zip file)</p>
Case Style	YM3241
RoHS Status	Compliant
Environmental Ratings	ENV46

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



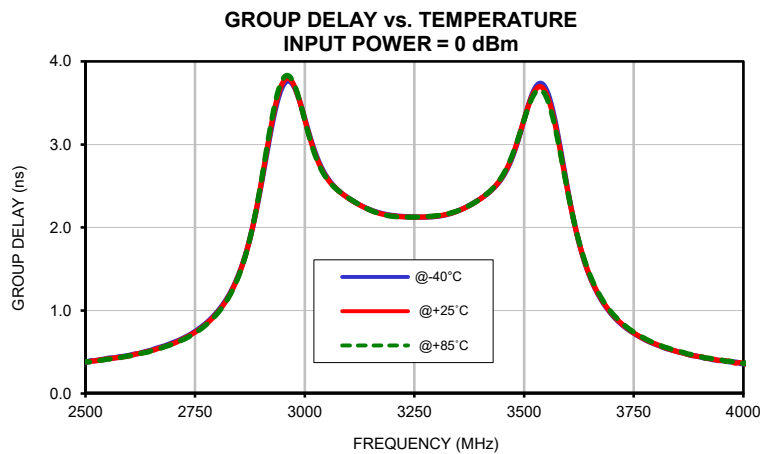
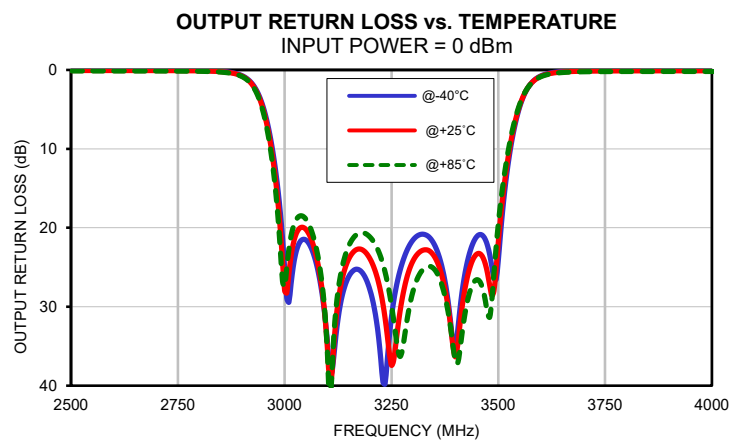
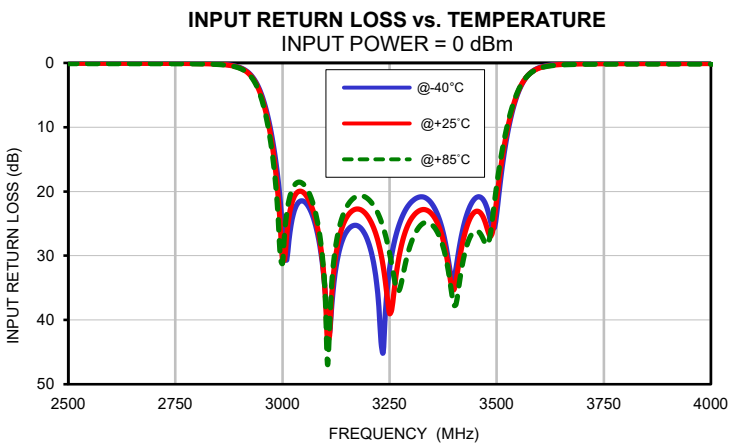
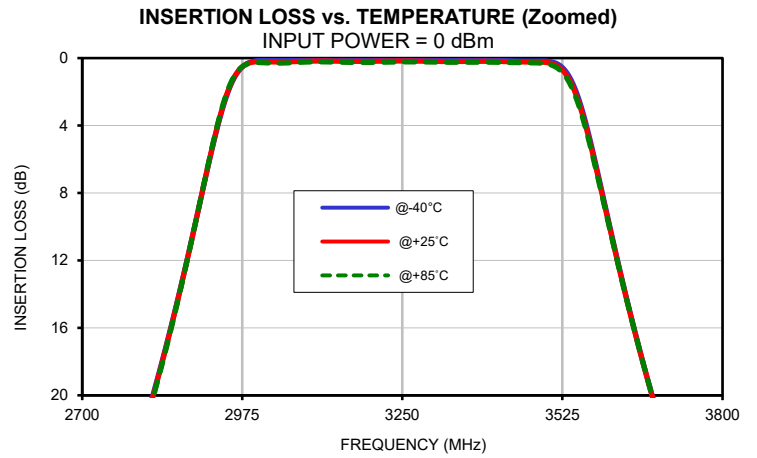
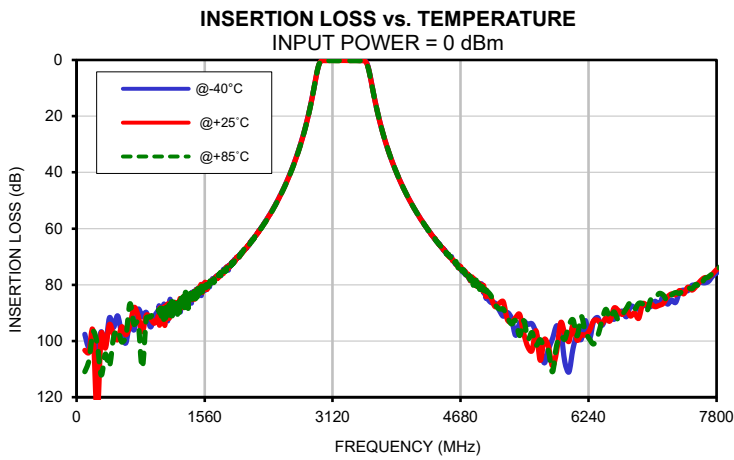
Typical Performance Data

FREQ. (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	97.62	103.32	110.92	0.01	0.02	0.02	0.03	0.03	0.04
150	102.32	104.08	106.95	0.00	0.02	0.03	0.04	0.04	0.06
200	97.72	96.51	96.69	0.00	0.03	0.03	0.04	0.05	0.06
250	103.08	126.18	100.79	0.01	0.03	0.04	0.04	0.05	0.06
300	96.69	97.44	112.10	0.01	0.03	0.04	0.05	0.06	0.07
350	101.96	102.53	104.68	0.01	0.04	0.04	0.05	0.06	0.07
400	91.76	94.13	109.12	0.01	0.03	0.05	0.05	0.06	0.08
450	95.19	97.73	98.84	0.01	0.04	0.05	0.05	0.06	0.08
500	91.04	99.56	95.97	0.01	0.04	0.05	0.05	0.06	0.08
600	100.71	97.80	98.52	0.01	0.04	0.05	0.05	0.06	0.09
700	96.04	88.09	94.13	0.00	0.04	0.05	0.05	0.06	0.09
800	91.39	96.72	109.56	0.00	0.04	0.05	0.04	0.07	0.09
900	95.00	91.96	91.51	0.00	0.04	0.05	0.04	0.07	0.09
1000	88.85	90.78	89.08	0.00	0.04	0.06	0.04	0.07	0.09
1100	89.78	90.40	88.50	0.00	0.04	0.06	0.04	0.06	0.09
1200	86.25	89.79	87.50	0.00	0.04	0.06	0.04	0.06	0.09
1300	85.22	84.20	85.17	0.00	0.04	0.06	0.04	0.06	0.09
1400	86.55	84.59	86.63	0.01	0.03	0.06	0.03	0.06	0.09
1500	81.29	81.61	81.79	0.01	0.04	0.06	0.02	0.05	0.09
1800	74.75	74.97	75.09	0.02	0.03	0.07	0.02	0.06	0.10
2000	69.29	69.25	68.97	0.02	0.04	0.07	0.02	0.06	0.11
2100	65.91	65.72	65.63	0.02	0.04	0.08	0.02	0.06	0.11
2200	61.71	61.72	61.98	0.01	0.04	0.09	0.02	0.07	0.12
2300	57.46	57.62	57.78	0.01	0.05	0.10	0.02	0.07	0.12
2400	52.66	52.73	52.85	0.01	0.05	0.11	0.02	0.07	0.12
2500	47.11	47.19	47.28	0.01	0.05	0.11	0.02	0.07	0.12
2600	40.53	40.65	40.76	0.01	0.06	0.11	0.02	0.07	0.13
2720	30.80	30.93	31.05	0.00	0.07	0.12	0.03	0.08	0.14
2820	20.17	20.26	20.36	0.06	0.12	0.17	0.09	0.14	0.19
2850	16.28	16.35	16.42	0.13	0.20	0.24	0.17	0.22	0.27
2890	10.47	10.48	10.49	0.49	0.55	0.60	0.51	0.57	0.62
2940	3.13	3.04	2.97	3.22	3.45	3.64	3.24	3.45	3.64
3000	0.16	0.22	0.27	25.88	30.80	31.20	25.11	27.96	27.45
3050	0.15	0.23	0.29	21.55	20.23	18.94	21.56	20.22	18.93
3100	0.11	0.18	0.22	35.90	36.26	36.54	34.38	35.18	35.73
3150	0.12	0.19	0.25	26.21	24.01	22.38	26.18	23.96	22.30
3250	0.11	0.17	0.23	32.00	39.00	29.61	31.33	37.41	29.80
3300	0.14	0.19	0.23	21.69	24.32	28.05	21.57	24.24	28.13
3350	0.14	0.20	0.25	22.05	23.63	25.26	22.08	23.60	25.23
3400	0.13	0.19	0.24	33.59	35.31	37.72	35.15	36.34	37.03
3450	0.17	0.23	0.27	21.06	23.15	26.15	21.09	23.32	26.58
3500	0.19	0.27	0.36	23.46	21.23	19.05	24.17	21.87	19.58
3560	3.21	3.42	3.58	3.19	3.11	3.06	3.23	3.15	3.09
3610	10.54	10.64	10.69	0.51	0.59	0.64	0.54	0.60	0.66
3650	16.29	16.33	16.33	0.17	0.25	0.31	0.19	0.26	0.32
3690	21.32	21.34	21.31	0.08	0.16	0.22	0.10	0.17	0.24
3800	32.38	32.38	32.35	0.02	0.11	0.18	0.04	0.12	0.19
3900	40.16	40.16	40.14	0.01	0.10	0.18	0.03	0.11	0.19
4000	46.61	46.58	46.59	0.01	0.10	0.18	0.03	0.11	0.19
4100	52.10	52.10	52.05	0.00	0.10	0.18	0.03	0.11	0.19
4300	61.07	61.13	61.04	0.01	0.09	0.18	0.03	0.11	0.20
4500	68.31	68.33	68.30	0.01	0.09	0.18	0.03	0.11	0.20
4700	75.06	74.83	74.69	0.00	0.09	0.18	0.03	0.11	0.20
5000	84.56	83.34	82.15	0.01	0.09	0.17	0.04	0.12	0.20
5500	94.10	102.12	99.31	0.01	0.10	0.17	0.04	0.11	0.19
6000	111.04	100.17	94.45	0.01	0.09	0.15	0.04	0.11	0.17
6500	91.65	92.89	91.97	0.01	0.07	0.12	0.04	0.10	0.15
7000	87.71	86.87	85.04	0.02	0.05	0.09	0.01	0.07	0.12
7500	80.22	81.89	81.36	0.05	0.03	0.06	0.01	0.06	0.10
7800	75.77	74.60	74.62	0.06	0.01	0.05	0.02	0.04	0.09

Typical Performance Data

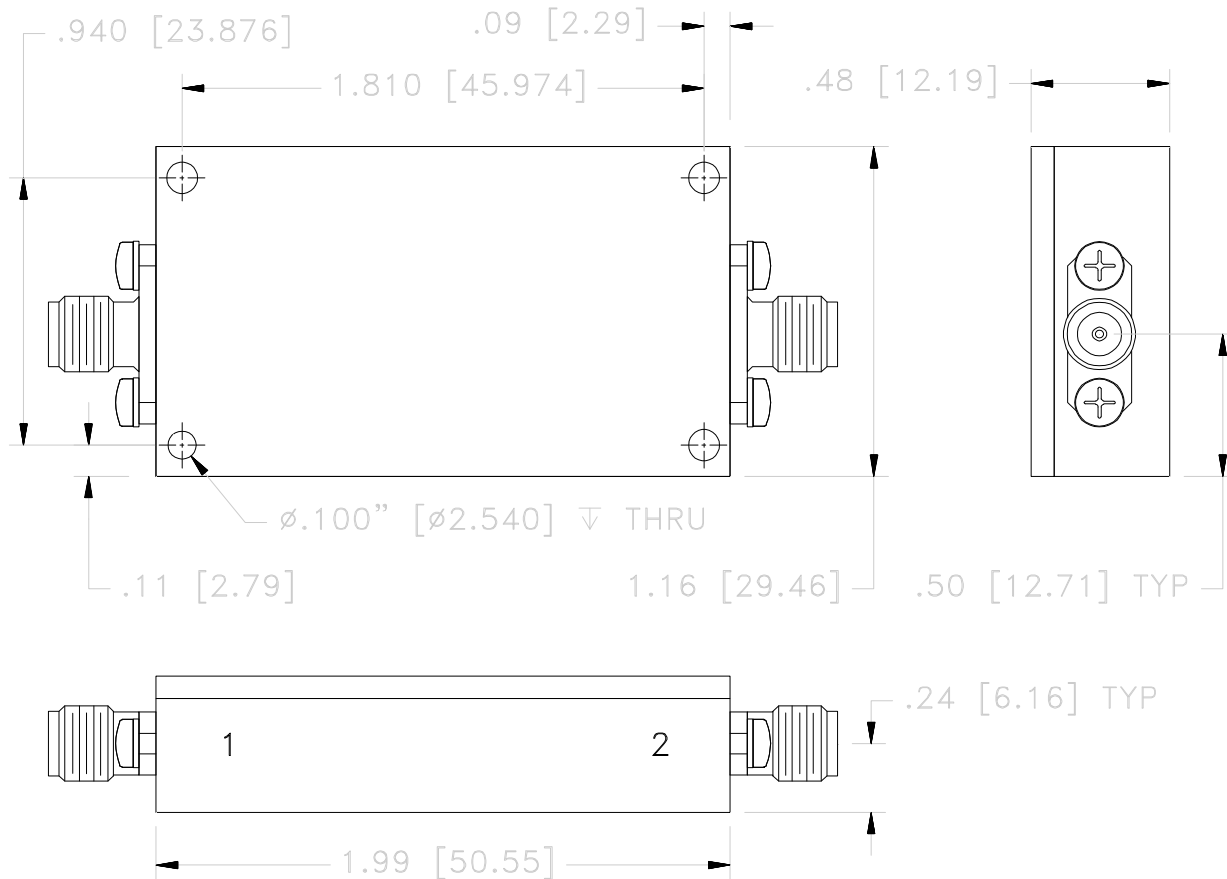
FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
3000	3.31	3.30	3.29
3010	3.13	3.11	3.10
3020	2.96	2.94	2.92
3030	2.82	2.80	2.78
3040	2.70	2.69	2.67
3050	2.61	2.60	2.59
3060	2.54	2.53	2.52
3070	2.48	2.47	2.47
3080	2.43	2.43	2.43
3090	2.39	2.39	2.39
3100	2.35	2.35	2.35
3110	2.32	2.32	2.32
3120	2.29	2.29	2.29
3130	2.26	2.26	2.26
3140	2.23	2.23	2.23
3150	2.21	2.21	2.21
3160	2.19	2.19	2.19
3170	2.18	2.17	2.17
3180	2.16	2.16	2.15
3190	2.15	2.15	2.14
3200	2.14	2.14	2.13
3210	2.14	2.13	2.13
3220	2.13	2.13	2.13
3230	2.13	2.13	2.12
3240	2.13	2.13	2.12
3250	2.13	2.12	2.13
3260	2.12	2.13	2.13
3270	2.12	2.13	2.13
3280	2.13	2.13	2.13
3290	2.13	2.13	2.14
3300	2.13	2.14	2.14
3310	2.14	2.14	2.15
3320	2.15	2.15	2.16
3330	2.16	2.17	2.17
3340	2.18	2.18	2.19
3350	2.20	2.20	2.20
3360	2.22	2.22	2.23
3370	2.25	2.25	2.25
3400	2.35	2.34	2.34
3450	2.60	2.61	2.62
3500	3.30	3.30	3.30

Typical Performance Curves



Outline Dimensions

YM3241



Dimensions are in inches [mm]. Tolerances: 2 Pl. $\pm .10$ [2.54]; 3 Pl. $\pm .015$ [.381]

Notes:

1. Case material: Brass.
2. Case Finish: Powder coated.
3. 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

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 Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 40°C, 96 hours; Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103, Condition B
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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	50g, 11ms half-sine, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition A