



CAVITY COAXIAL

Bandpass Filter

ZVBP-18R7G-S+

Mini-Circuits

50Ω 18.2 to 19.2 GHz SMA Female

KEY FEATURES

- Low Insertion Loss, 0.7 dB Typ.
- Good Return Loss, 22 dB Typ.
- High Rejection, 80 dB Typ.
- Wide Stopband up to 40 GHz
- Power Handling 5 Watts.



Generic photo used for illustration purposes only

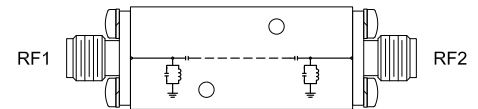
APPLICATIONS

- Ka Satellite Communications.

PRODUCT OVERVIEW

Mini-Circuits' ZVBP-18R7G-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.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	18.7	—	GHz
	Insertion Loss	F1-F2	18.2 - 19.2	—	0.7	1.0	dB
	Return Loss	F1-F2	18.2 - 19.2	15	22	—	dB
Stop Band, Lower	Rejection	DC-F3	DC - 15	70	86	—	dB
		F3-F4	15 - 17.2	38	44	—	
Stop Band, Upper	Rejection	F5-F6	20.2 - 22	38	44	—	dB
		F6-F7	22 - 40	70	79	—	

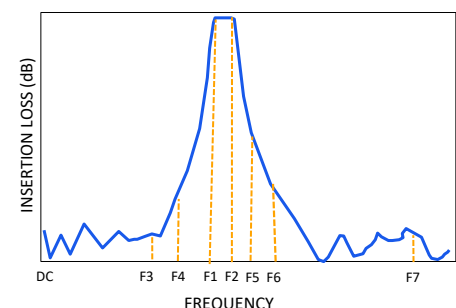
1. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

ABSOLUTE MAXIMUM RATINGS^{2,3}

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁴	5W 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



REV. OR
ECO-021240
ZVBP-18R7G-S+
EDU4744
URJ
240321





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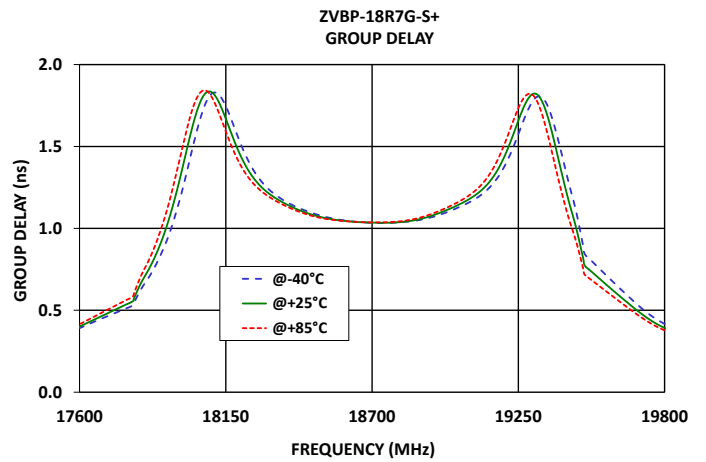
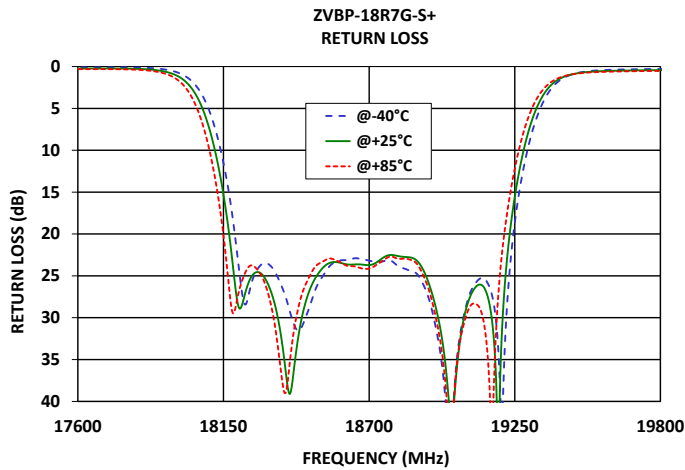
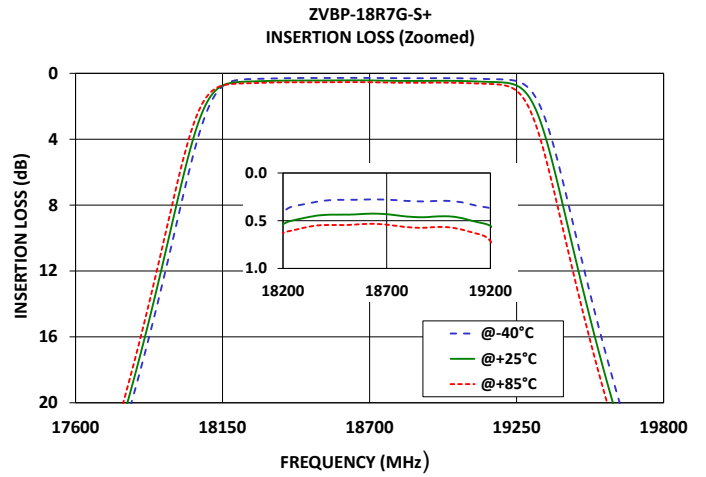
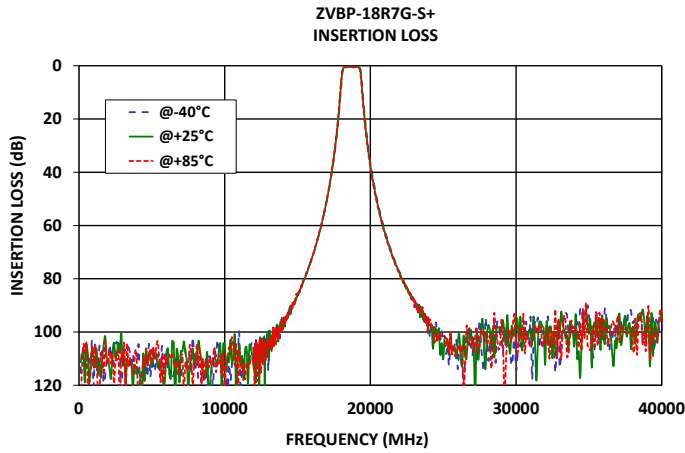
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TYPICAL PERFORMANCE GRAPHS





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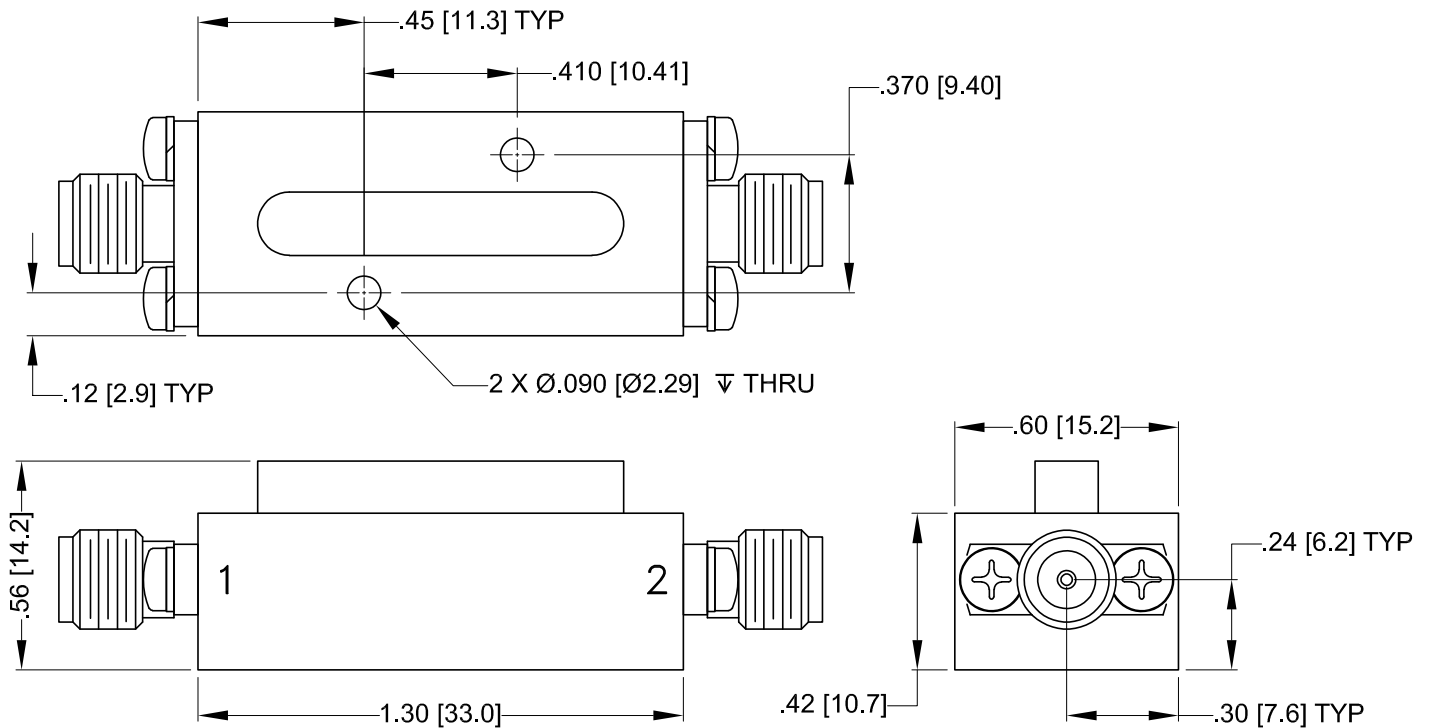
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CONNECTOR DESCRIPTION

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

CASE STYLE DRAWING



Unit Weight: 45 Grams.

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

PRODUCT MARKING*: ZVBP-18R7G-S+

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





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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	<p>Data</p> <p>Graphs</p> <p>S-Parameter (S2P Files) Data Set (.zip file)</p>
Case Style	ZY3595
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



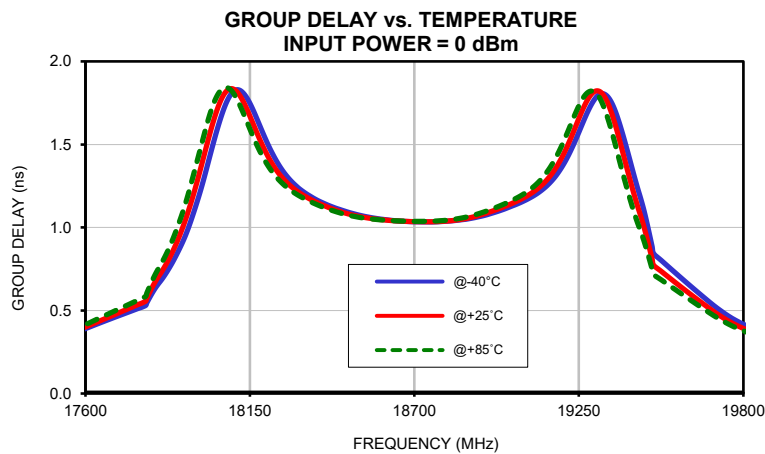
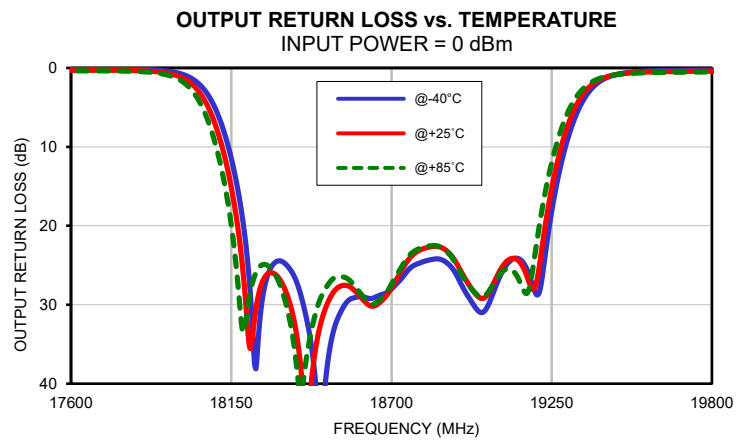
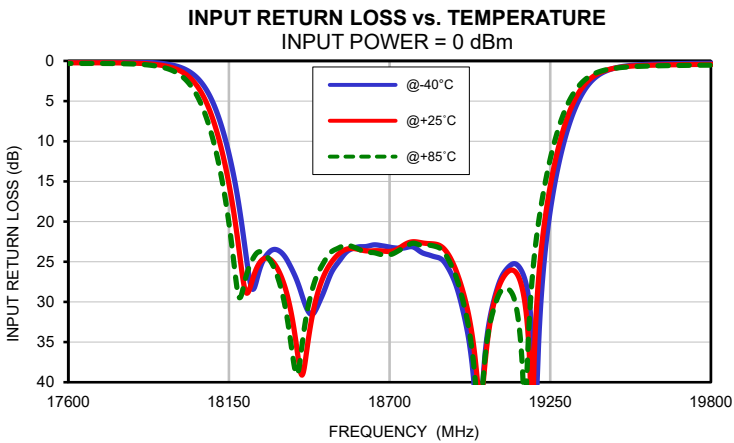
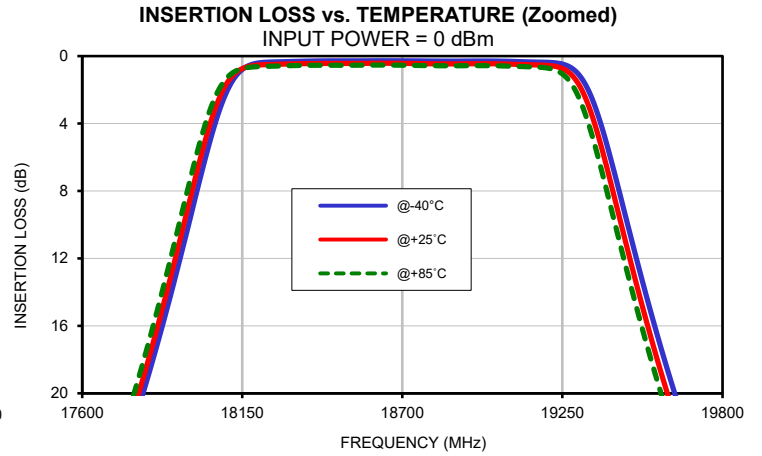
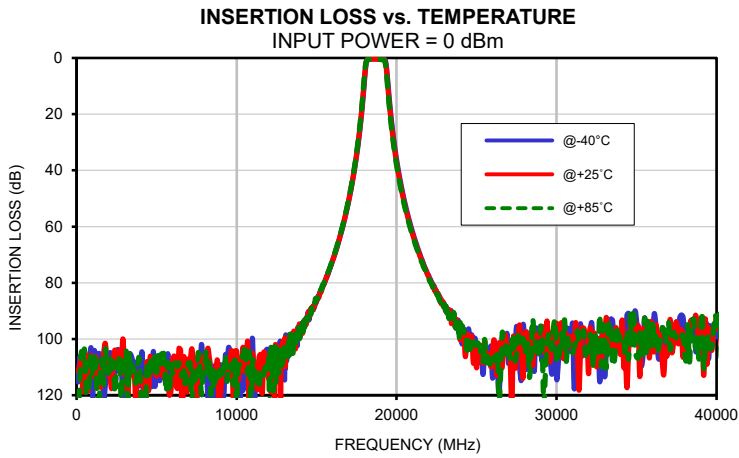
Typical Performance Data

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	115.30	111.37	129.36	0.00	0.02	0.03	0.00	0.01	0.02
200	106.34	109.78	114.31	0.02	0.03	0.04	0.02	0.03	0.04
400	105.65	118.93	107.85	0.05	0.06	0.07	0.05	0.06	0.07
600	108.33	108.00	119.81	0.06	0.08	0.10	0.06	0.08	0.09
1000	120.67	109.30	113.39	0.07	0.09	0.12	0.07	0.09	0.11
1200	108.87	106.32	110.52	0.07	0.09	0.12	0.07	0.10	0.12
1400	105.29	111.08	125.44	0.06	0.09	0.12	0.06	0.10	0.12
1600	108.48	109.78	107.24	0.06	0.09	0.12	0.06	0.10	0.12
1800	116.13	101.66	103.43	0.05	0.09	0.12	0.05	0.09	0.11
2000	110.99	110.23	112.16	0.05	0.08	0.11	0.05	0.09	0.11
2200	109.60	117.48	111.85	0.04	0.08	0.11	0.04	0.08	0.11
2400	112.30	103.95	119.37	0.04	0.08	0.11	0.03	0.08	0.10
2600	103.72	107.81	110.66	0.03	0.07	0.10	0.03	0.08	0.10
2800	105.44	107.77	124.97	0.03	0.07	0.10	0.02	0.07	0.09
3000	109.70	112.51	111.48	0.02	0.07	0.10	0.02	0.07	0.09
3200	106.92	119.77	121.51	0.02	0.06	0.09	0.01	0.06	0.09
3400	105.75	112.73	113.06	0.01	0.06	0.09	0.01	0.06	0.08
3600	113.80	111.66	112.13	0.01	0.06	0.09	0.00	0.06	0.08
3800	114.59	112.38	110.88	0.01	0.05	0.09	0.00	0.06	0.08
4000	110.63	115.81	115.11	0.00	0.05	0.08	0.00	0.06	0.08
4200	124.51	117.22	122.36	0.00	0.05	0.08	0.00	0.06	0.08
4400	114.59	108.29	109.85	0.00	0.05	0.09	0.00	0.06	0.08
4600	111.43	106.25	106.62	0.00	0.05	0.09	0.00	0.06	0.08
4800	104.42	108.01	109.81	0.00	0.05	0.09	0.00	0.06	0.09
6000	108.50	107.85	112.28	0.03	0.09	0.13	0.04	0.11	0.14
7000	117.51	107.16	108.49	0.07	0.13	0.18	0.08	0.16	0.20
8000	113.48	109.38	112.09	0.09	0.16	0.20	0.11	0.19	0.23
9000	109.18	119.25	109.90	0.07	0.15	0.19	0.08	0.16	0.21
10000	115.79	104.25	123.33	0.02	0.10	0.15	0.02	0.11	0.15
11000	100.30	104.97	107.77	0.05	0.04	0.09	0.05	0.04	0.09
12000	107.93	114.18	111.87	0.09	0.00	0.06	0.10	0.00	0.05
13000	114.62	106.34	104.62	0.08	0.01	0.08	0.09	0.01	0.06
14000	96.46	97.40	96.07	0.01	0.08	0.15	0.04	0.06	0.12
15000	86.40	85.92	85.83	0.07	0.17	0.24	0.05	0.15	0.22
17200	45.27	44.93	44.47	0.16	0.29	0.36	0.18	0.32	0.39
18200	0.42	0.54	0.63	21.91	27.61	28.07	22.31	29.87	32.17
18700	0.28	0.43	0.54	23.18	23.72	24.13	28.01	27.89	27.40
19200	0.37	0.55	0.71	42.55	32.78	22.84	28.77	26.81	21.81
19365	3.14	4.25	5.52	3.76	3.05	2.46	3.69	2.99	2.40
19650	20.79	22.17	23.34	0.36	0.49	0.58	0.32	0.46	0.55
19850	30.33	31.55	32.53	0.28	0.42	0.50	0.26	0.41	0.49
20200	42.86	43.89	44.71	0.20	0.34	0.42	0.20	0.35	0.42
22000	77.42	77.84	78.34	0.13	0.02	0.09	0.10	0.06	0.13
23000	88.61	87.96	87.71	0.22	0.07	0.02	0.20	0.04	0.05
24000	97.26	97.04	97.16	0.22	0.07	0.04	0.22	0.06	0.04
25000	103.02	110.29	101.74	0.12	0.03	0.15	0.16	0.01	0.11
26000	113.96	104.02	106.50	0.03	0.19	0.31	0.02	0.12	0.25
27000	108.80	101.81	102.42	0.18	0.34	0.46	0.13	0.27	0.40
28000	101.02	100.87	105.06	0.27	0.44	0.55	0.25	0.41	0.53
29000	101.81	99.63	95.36	0.24	0.43	0.51	0.29	0.48	0.58
30000	114.11	94.51	107.92	0.09	0.30	0.37	0.22	0.43	0.51
31000	94.60	100.38	105.33	0.08	0.13	0.22	0.04	0.28	0.35
32000	106.08	112.36	104.49	0.21	0.01	0.12	0.19	0.06	0.16
33000	113.25	100.26	100.31	0.24	0.06	0.10	0.39	0.17	0.05
34000	97.92	105.37	98.46	0.16	0.00	0.18	0.41	0.25	0.09
35000	93.50	100.68	106.43	0.02	0.14	0.30	0.31	0.19	0.02
37000	97.10	99.97	94.07	0.13	0.30	0.46	0.05	0.13	0.33
38000	96.63	98.05	104.67	0.75	1.03	1.07	0.28	0.49	0.79
39000	98.34	93.89	99.72	0.25	0.48	0.64	0.39	0.55	0.74
40000	95.38	92.65	94.36	0.28	0.54	0.68	0.56	0.78	0.95

Typical Performance Data

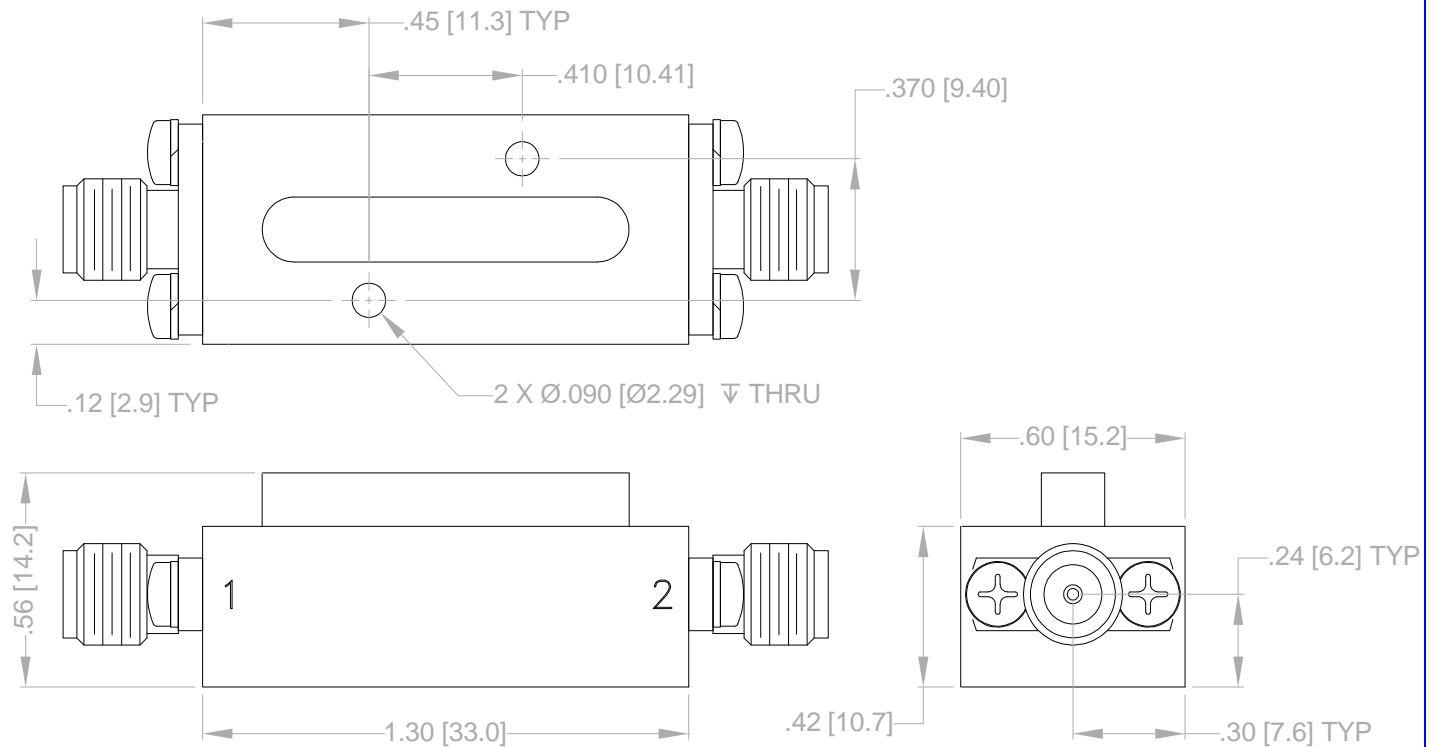
FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
18200	1.54	1.46	1.40
18250	1.37	1.32	1.28
18300	1.26	1.23	1.21
18325	1.22	1.20	1.18
18350	1.19	1.17	1.16
18375	1.16	1.15	1.14
18400	1.14	1.13	1.12
18425	1.12	1.11	1.10
18450	1.11	1.10	1.09
18475	1.09	1.08	1.08
18550	1.06	1.06	1.05
18525	1.07	1.06	1.06
18550	1.06	1.06	1.05
18525	1.07	1.06	1.06
18550	1.06	1.06	1.05
18575	1.05	1.05	1.05
18600	1.05	1.05	1.04
18650	1.04	1.04	1.04
18700	1.03	1.04	1.04
18900	1.06	1.06	1.07
18950	1.08	1.09	1.10
19000	1.11	1.13	1.14
19005	1.11	1.13	1.15
19010	1.12	1.13	1.15
19020	1.12	1.14	1.16
19050	1.15	1.16	1.19
19060	1.15	1.17	1.20
19070	1.16	1.18	1.21
19090	1.18	1.21	1.23
19100	1.19	1.22	1.25
19105	1.20	1.22	1.26
19115	1.21	1.24	1.27
19125	1.22	1.25	1.29
19135	1.24	1.27	1.31
19145	1.25	1.29	1.34
19150	1.26	1.30	1.35
19160	1.28	1.32	1.38
19175	1.32	1.36	1.43
19190	1.36	1.41	1.48
19200	1.39	1.45	1.52

Typical Performance Curves



Outline Dimensions

ZY3595



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

Notes:

1. Case Material: Brass.
2. Case Finish: Powder coated.
3. Unit Weight: 45 Grams.
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



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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