



Mini-Circuits

CAVITY COAXIAL

Bandpass Filter

ZVBP-1992R5-S+

50 Ω

1992.5 MHz

SMA Female

KEY FEATURES

- Low Insertion Loss, 1.5 dB Typ.
- Good Return Loss, 20 dB Typ.
- High Rejection, 89 dB Typ.
- Stopband up to 5250 MHz
- Narrow Band Design, 0.25% Fractional Bandwidth

APPLICATIONS

- Test and Measurement
- Quantum Computing

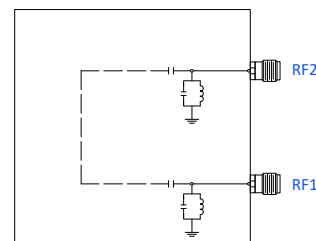
PRODUCT OVERVIEW

Mini-Circuits' ZVBP-1992R5-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 AT +25°C

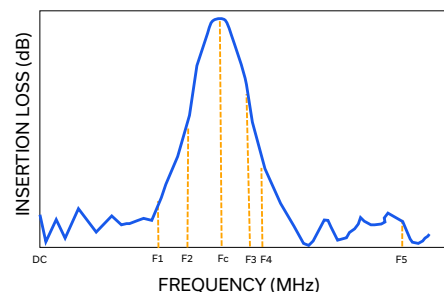
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	1992.5	—	MHz
	1 dB Bandwidth	—	—	5	—	—	MHz
	Insertion Loss	Fc	1992.5	—	1.5	2.0	dB
	Return Loss	Fc	1992.5	14	20	—	dB
Stopband, Lower	Rejection	DC-F1	DC - 1600	80	89	—	dB
		F1-F2	1600 - 1984	33	37	—	
Stopband, Upper	Rejection	F3-F4	2001 - 2300	33	36	—	dB
		F4-F5	2300 - 5250	80	87	—	

ABSOLUTE MAXIMUM RATINGS^{1,2}

Parameter	Ratings
Operating Temperature	+15°C to +35°C
Storage Temperature	-40°C to +85°C
Input Power ³	10 W max. at +25°C

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

TYPICAL FREQUENCY RESPONSE AT +25°C



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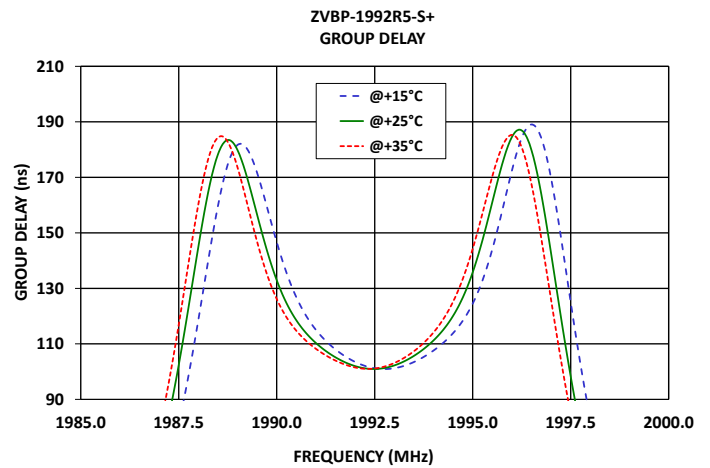
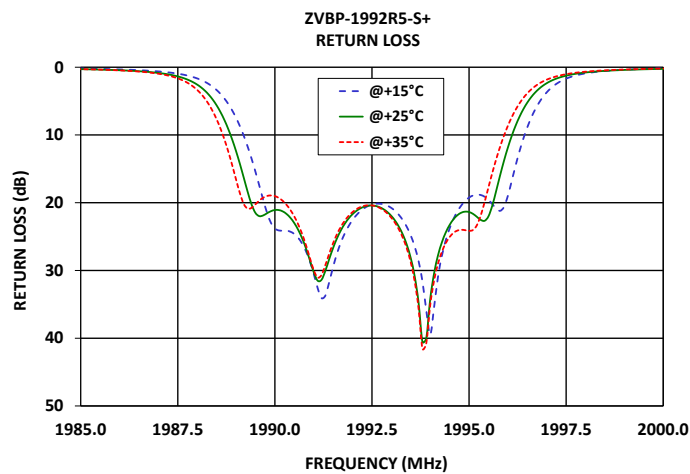
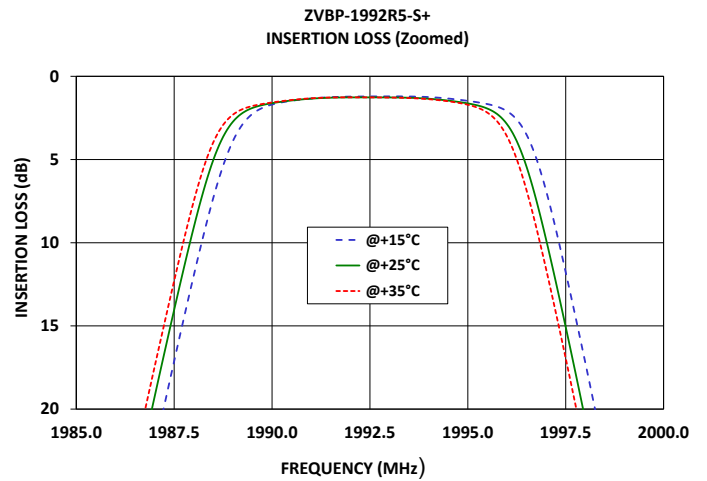
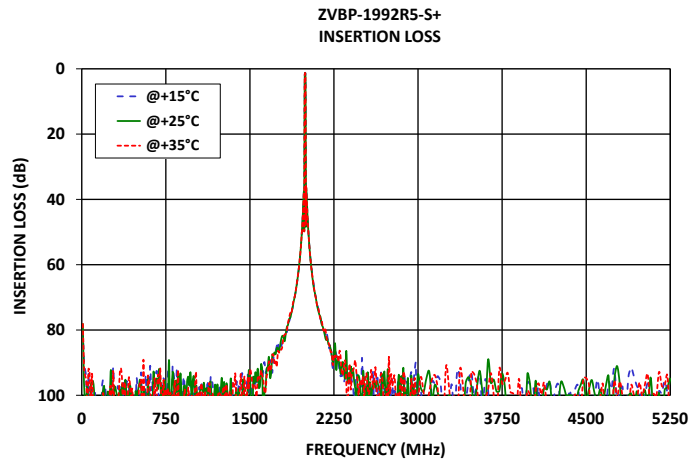
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50 Ω

1992.5 MHz

SMA Female

TYPICAL PERFORMANCE GRAPHS





CAVITY COAXIAL

Bandpass Filter

ZVBP-1992R5-S+

Mini-Circuits

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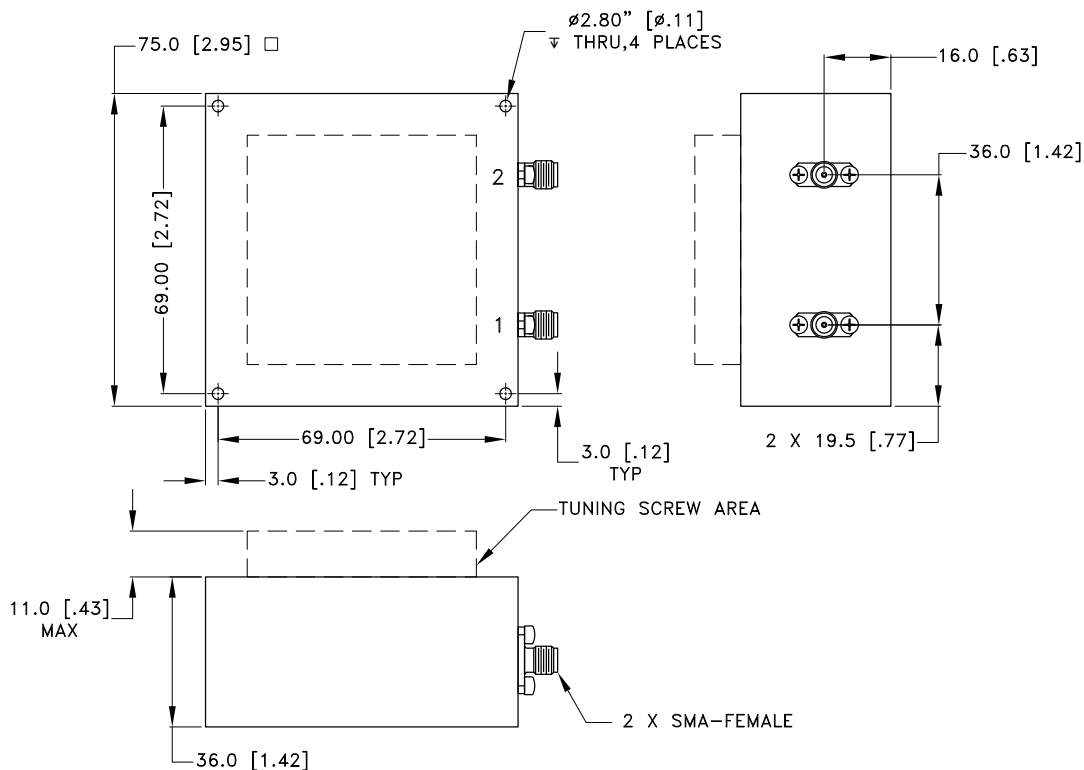
1992.5 MHz SMA Female

CONNECTOR DESCRIPTION

Function	Connector
RF1 ⁴	SMA Female
RF2 ⁴	SMA Female

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

CASE STYLE DRAWING



Unit Weight: 330 Grams.

Dimensions are in mm (inches). Tolerances: 1 Pl. ± 1.5 [0.06]; 2 Pl. ± 0.4 [0.016]

PRODUCT MARKING*: ZVBP-1992R5-S+

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





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Bandpass Filter

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50Ω

1992.5 MHz

SMA 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	BBU3795
RoHS Status	Compliant
Environmental Ratings	ENV144

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



Cavity Band Pass Filter

ZVBP-1992R5-S+

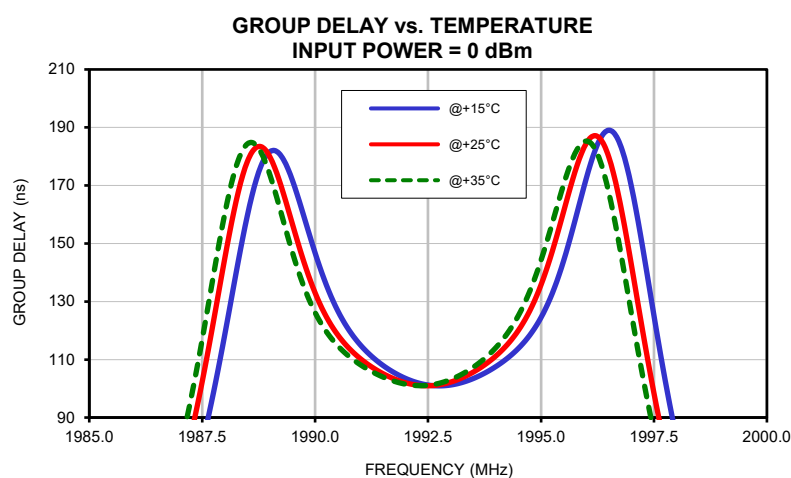
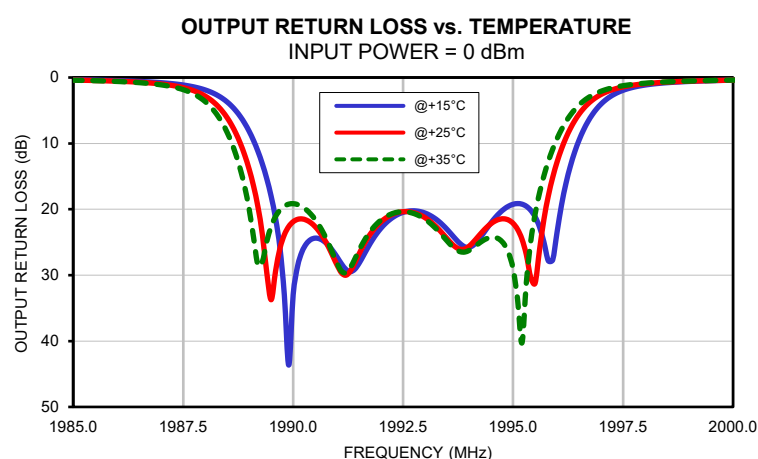
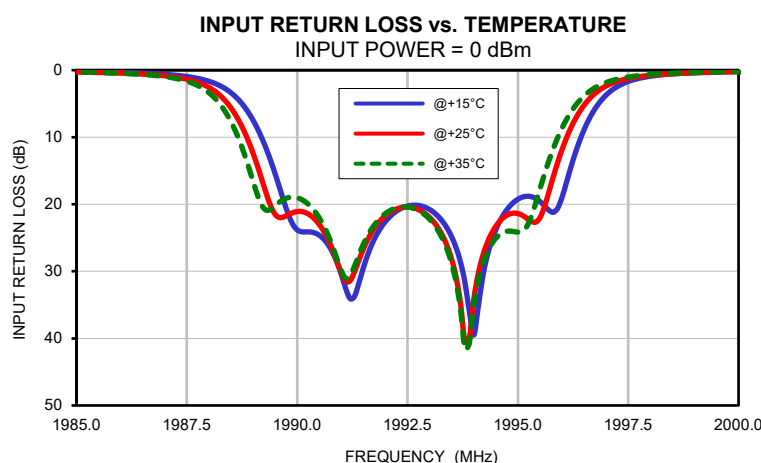
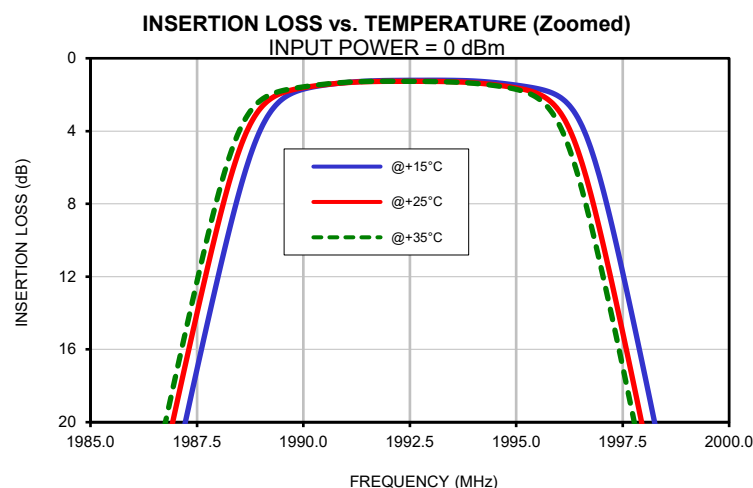
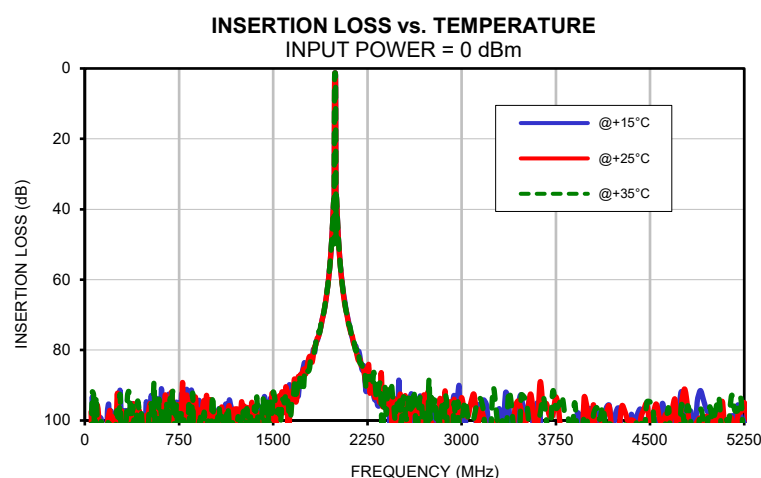
Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@+15°C	@+25°C	@+35°C	@+15°C	@+25°C	@+35°C	@+15°C	@+25°C	@+35°C
100.0	108.83	95.64	100.66	0.07	0.04	0.05	0.03	0.04	0.04
200.0	104.59	97.25	101.96	0.06	0.02	0.04	0.05	0.06	0.06
300.0	102.34	97.64	104.52	0.04	0.01	0.02	0.06	0.08	0.08
500.0	103.18	98.96	107.03	0.01	0.01	0.00	0.06	0.07	0.07
800.0	110.27	102.31	102.65	0.03	0.00	0.00	0.05	0.06	0.06
1000.0	96.32	94.25	110.55	0.05	0.00	0.02	0.05	0.06	0.06
1150.0	94.29	95.90	101.01	0.09	0.03	0.05	0.04	0.06	0.06
1200.0	97.42	100.37	107.20	0.11	0.04	0.06	0.04	0.06	0.06
1250.0	109.28	94.80	116.74	0.09	0.03	0.05	0.04	0.06	0.06
1300.0	103.65	99.20	101.78	0.13	0.05	0.08	0.04	0.06	0.06
1350.0	105.54	102.01	96.24	0.11	0.03	0.06	0.04	0.06	0.06
1400.0	97.21	98.29	107.26	0.14	0.06	0.09	0.04	0.06	0.06
1450.0	107.96	101.11	94.46	0.13	0.05	0.08	0.04	0.06	0.06
1500.0	102.12	93.53	92.02	0.13	0.05	0.08	0.04	0.06	0.06
1550.0	95.69	92.92	97.95	0.15	0.06	0.10	0.04	0.06	0.06
1600.0	95.15	90.41	92.38	0.13	0.04	0.08	0.04	0.06	0.06
1650.0	91.67	91.86	94.01	0.15	0.07	0.10	0.04	0.06	0.06
1700.0	93.12	87.52	87.50	0.14	0.06	0.09	0.04	0.06	0.06
1984.0	38.92	40.45	41.71	0.11	0.20	0.19	0.26	0.30	0.31
1986.0	35.34	30.84	28.60	0.32	0.44	0.46	0.48	0.56	0.60
1986.9	23.59	20.33	18.51	0.57	0.78	0.88	0.74	0.92	1.03
1987.9	12.97	10.02	8.39	1.46	2.23	2.87	1.68	2.46	3.14
1988.9	4.43	3.04	2.51	6.37	10.66	14.44	6.96	11.81	16.65
1990.0	1.70	1.61	1.57	23.81	21.08	19.03	32.97	21.89	19.15
1990.5	1.47	1.45	1.42	24.61	23.01	22.03	24.38	22.64	21.55
1991.0	1.33	1.34	1.32	30.48	30.25	29.94	27.27	28.50	28.24
1991.5	1.25	1.28	1.27	29.46	26.67	25.96	28.18	26.76	26.19
1992.0	1.22	1.27	1.26	22.55	21.69	21.38	22.85	21.88	21.62
1992.5	1.21	1.27	1.27	20.26	20.42	20.40	20.46	20.36	20.37
1993.0	1.21	1.27	1.28	20.78	21.96	22.23	20.58	21.29	21.52
1993.5	1.21	1.29	1.31	24.85	28.20	28.85	23.07	24.47	24.81
1994.0	1.25	1.35	1.37	39.50	34.21	35.09	25.77	25.61	26.24
1994.5	1.34	1.46	1.50	23.79	23.28	25.06	22.03	22.17	24.26
1995.0	1.48	1.63	1.71	19.25	21.38	24.15	19.24	22.14	29.06
1996.2	2.47	3.65	4.67	14.49	8.61	6.27	16.11	9.17	6.71
1997.0	6.88	9.82	11.59	3.71	2.36	1.84	4.02	2.57	2.08
1997.5	11.77	15.06	16.95	1.69	1.25	1.03	1.94	1.43	1.25
1998.0	17.20	20.64	22.64	0.91	0.78	0.66	1.14	0.94	0.87
1998.9	27.90	32.27	35.24	0.40	0.42	0.36	0.63	0.58	0.56
2001.0	39.10	37.83	37.17	0.08	0.15	0.11	0.31	0.31	0.31
2100.0	71.99	72.65	72.61	0.13	0.05	0.08	0.05	0.08	0.08
2200.0	84.14	84.35	83.86	0.11	0.03	0.06	0.05	0.07	0.07
2300.0	92.96	90.68	86.33	0.10	0.03	0.05	0.05	0.07	0.08
2400.0	94.21	91.17	98.26	0.09	0.02	0.04	0.05	0.08	0.08
2500.0	88.52	106.39	96.68	0.06	0.01	0.01	0.05	0.07	0.08
2600.0	92.65	95.89	97.99	0.02	0.04	0.02	0.06	0.08	0.08
2700.0	98.23	92.70	103.19	0.00	0.06	0.05	0.05	0.09	0.09
2800.0	100.76	106.26	99.69	0.00	0.06	0.05	0.06	0.09	0.09
2900.0	95.94	99.37	108.35	0.02	0.04	0.03	0.06	0.09	0.09
3000.0	102.74	93.48	101.48	0.03	0.03	0.02	0.06	0.10	0.10
3100.0	108.52	92.73	98.92	0.04	0.03	0.01	0.07	0.10	0.10
3200.0	95.90	104.20	109.90	0.04	0.02	0.01	0.07	0.09	0.10
3300.0	96.63	100.96	105.29	0.07	0.00	0.02	0.07	0.10	0.10
3400.0	111.25	108.94	96.80	0.11	0.04	0.06	0.08	0.10	0.11
3500.0	100.41	101.94	93.46	0.16	0.08	0.10	0.08	0.10	0.11
4000.0	96.66	96.87	100.22	0.37	0.28	0.31	0.09	0.12	0.12
4100.0	111.97	104.67	99.71	0.41	0.31	0.35	0.09	0.11	0.12
4200.0	102.66	104.03	101.94	0.44	0.34	0.38	0.09	0.11	0.12
5000.0	102.41	100.70	100.16	0.30	0.18	0.23	0.08	0.12	0.12
5250.0	106.63	94.89	109.57	0.21	0.11	0.15	0.08	0.11	0.12

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@+15°C	@+25°C	@+35°C
1990.0	146.71	132.96	126.16
1990.1	142.02	129.36	123.27
1990.2	137.66	126.14	120.73
1990.3	133.68	123.29	118.48
1990.4	130.07	120.76	116.50
1990.5	126.82	118.51	114.74
1990.6	123.91	116.50	113.16
1990.7	121.32	114.71	111.74
1990.8	119.00	113.09	110.46
1990.9	116.91	111.63	109.29
1991.0	115.04	110.31	108.21
1991.1	113.35	109.09	107.22
1991.2	111.82	107.98	106.31
1991.3	110.43	106.95	105.46
1991.4	109.15	106.01	104.69
1991.5	107.99	105.15	103.98
1991.6	106.91	104.36	103.33
1991.7	105.93	103.65	102.76
1991.8	105.04	103.01	102.26
1991.9	104.23	102.46	101.84
1992.0	103.50	101.99	101.50
1992.1	102.87	101.60	101.24
1992.2	102.31	101.30	101.08
1992.3	101.85	101.09	101.00
1992.4	101.48	100.97	101.02
1992.5	101.20	100.95	101.13
1992.6	101.02	101.02	101.34
1992.7	100.93	101.18	101.64
1992.8	100.93	101.44	102.04
1992.9	101.03	101.79	102.53
1993.0	101.22	102.23	103.11
1994.1	108.64	112.66	115.88
1994.2	109.77	114.23	117.84
1994.3	111.01	115.98	120.03
1994.4	112.37	117.92	122.47
1994.5	113.86	120.09	125.20
1994.6	115.52	122.53	128.26
1994.7	117.37	125.28	131.67
1994.8	119.46	128.37	135.47
1994.9	121.81	131.86	139.66
1995.0	124.49	135.76	144.24

Typical Performance Curves



BBU3795



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 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	-40°C to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except -40°C and +100°C