

# Coaxial Bandpass Filter

## ZABP-598-S+

50Ω 410 to 785 MHz



Generic photo used for illustration purposes only  
CASE STYLE: UU1842

### The Big Deal

- High rejection
- Good VSWR
- Connectorized package

### Product Overview

ZABP-598-S+ is a 50Ω bandpass filter with a rugged connectorized package covering the passband of 410 to 785 MHz. The bandpass filter offers good matching within the passband and provides high rejection. This filter has miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across lots and consistent performance across temperature.

### Key Features

Feature	Advantages
High rejection	ZABP-598-S+ has sharper transition and rejects spurious signals in the stopband.
Good VSWR	This filter maintains typical VSWR over passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple.
Connectorized package	Connectorized package is easy to interface with other devices and well suited for test setups.

#### 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-Circuit's 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



# Bandpass Filter

## ZABP-598-S+

50Ω 410 to 785 MHz



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CASE STYLE: UU1842  
Connectors SMA-MF Model ZABP-598-S+

### Features

- Broad bandwidth
- Sharper cut-off
- Good VSWR
- Connectorized package

### Applications

- Digital television
- Broad band wireless 4G LTE band
- Biomedical telemetry devise
- Wireless microphone
- Test equipment

### Electrical Specifications at 25°C

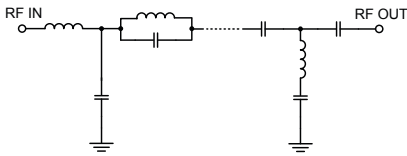
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	598	-	MHz
	Insertion Loss	F1-F2	410 - 785	2.7	4.5	dB
	VSWR	F1-F2	410 - 785	1.46	1.92	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 385	20	34	dB
	VSWR	DC-F3	DC - 385	-	20	-
Stop Band, Upper	Insertion Loss	F4-F5	825 - 1000	20	35	dB
		F6-F7	1000 - 1500	40	46	dB
	VSWR	F4-F7	825 - 1600	-	20	-

### Maximum Ratings

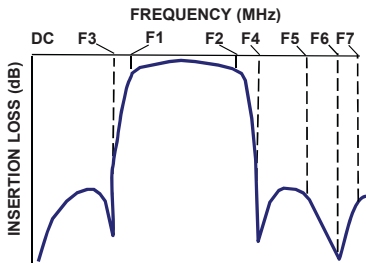
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W max.

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

### Functional Schematic



### Typical Frequency Response

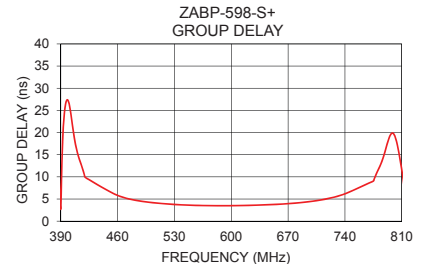
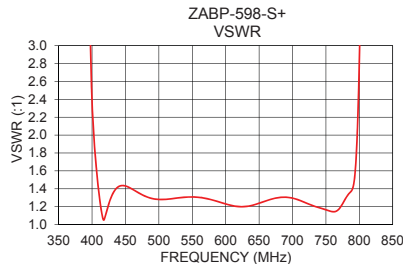
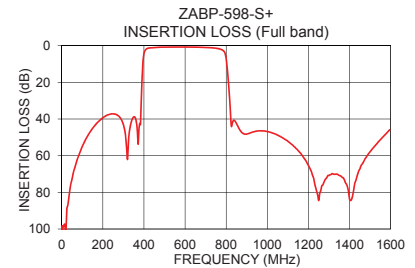
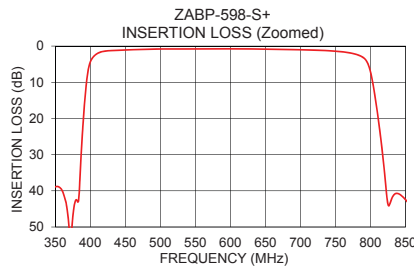


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1	102.62	4921.74	410	15.79
50	72.90	493.06	450	6.71
100	55.00	158.05	475	4.98
385	37.04	12.64	500	4.24
387	29.50	11.35	525	3.83
390	20.23	9.03	550	3.60
404	3.02	1.85	575	3.50
410	2.04	1.37	598	3.50
598	0.76	1.23	600	3.50
785	2.67	1.35	625	3.58
790	3.23	1.40	650	3.74
811	20.21	7.78	675	4.02
817	29.62	10.20	700	4.50
825	43.90	12.81	710	4.78
1000	46.84	44.26	725	5.33
1200	65.43	64.85	750	6.95
1300	70.79	67.80	760	7.78
1400	83.73	67.54	770	8.63
1500	57.84	65.68	780	11.20
1600	45.26	61.65	785	13.24

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



#### Notes

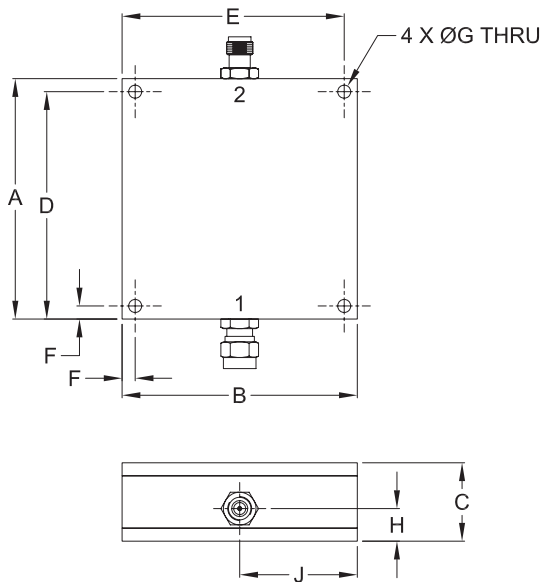
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## Coaxial Connections

PORT - 1	SMA-MALE
PORT - 2	SMA-FEMALE

## Outline Drawing



## Outline Dimensions ( $\frac{\text{inch}}{\text{mm}}$ )

A	B	C	D	E
2.300	2.250	.750	2.175	2.125
58.42	57.15	19.05	55.25	53.98
F	G	H	J	wt.
.125	.125	.312	1.125	grams
3.18	3.18	7.93	28.58	124

Note: Please refer to case style drawing for details

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*Typical Performance Data*

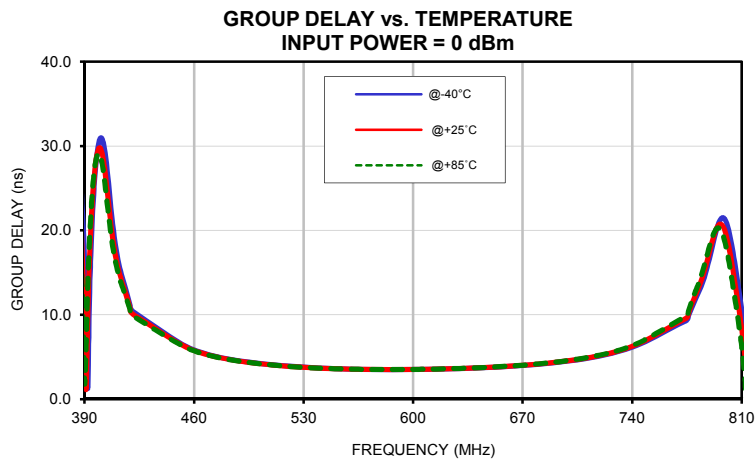
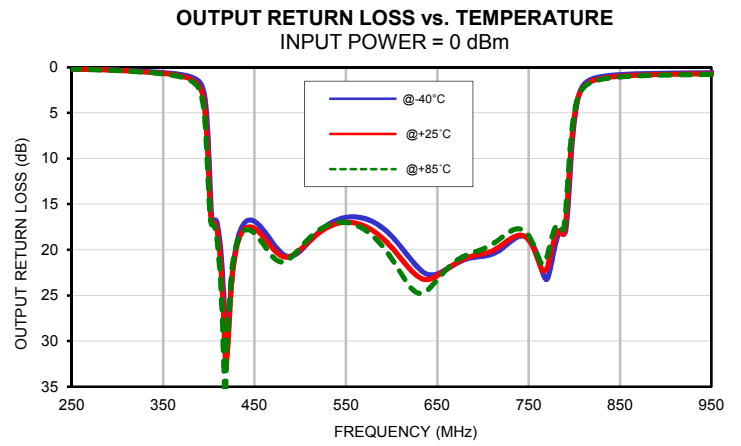
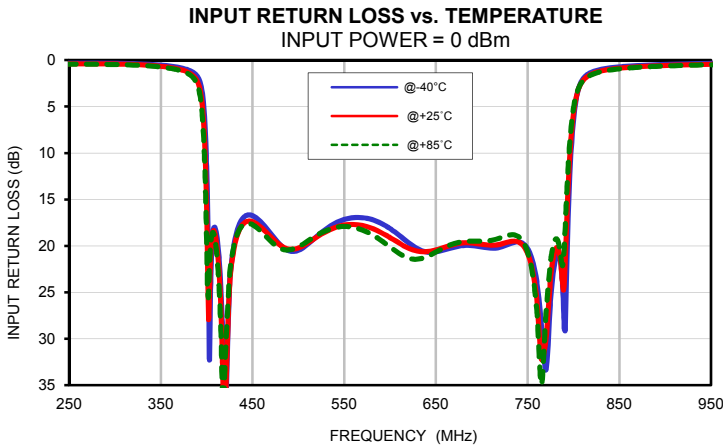
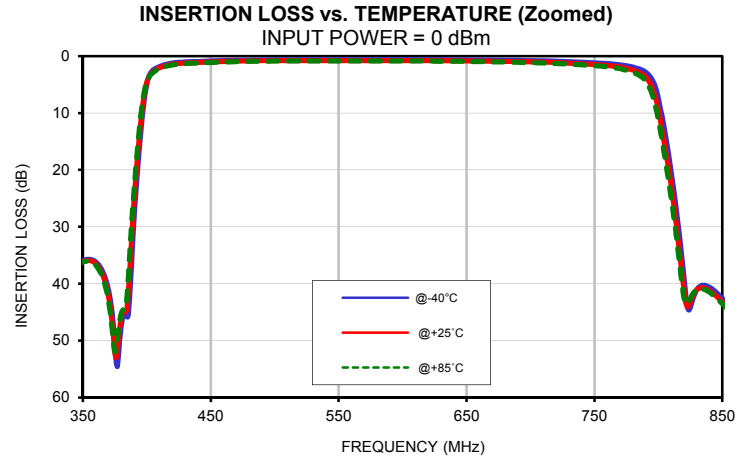
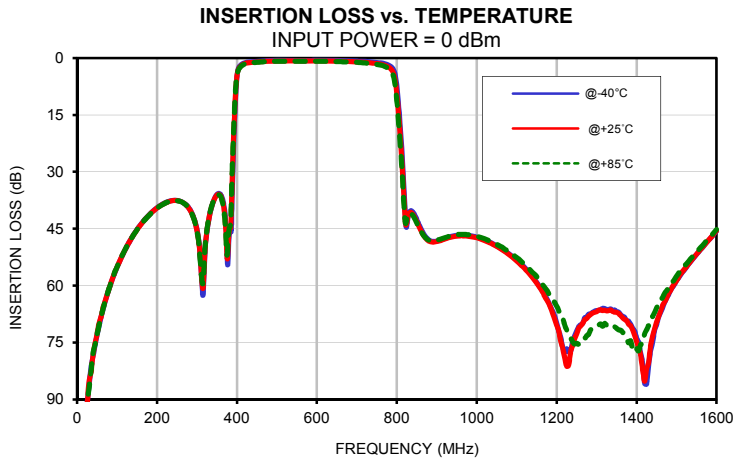
FREQ.  (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	93.18	99.95	100.83	0.01	0.00	0.01	0.00	0.00	0.00
10	99.49	112.27	105.90	0.01	0.01	0.01	0.00	0.00	0.00
50	72.96	72.78	72.75	0.03	0.04	0.05	0.00	0.01	0.01
100	55.17	55.09	55.05	0.09	0.12	0.14	0.01	0.02	0.02
150	45.22	45.27	45.27	0.21	0.25	0.27	0.03	0.05	0.05
300	45.30	45.49	45.66	0.33	0.42	0.47	0.31	0.35	0.36
385	45.85	43.39	40.74	1.30	1.64	1.85	1.25	1.57	1.80
387	40.83	36.12	33.39	1.45	1.84	2.09	1.36	1.74	2.02
389	32.32	28.73	26.57	1.64	2.11	2.44	1.52	1.98	2.32
390	28.63	25.46	23.51	1.78	2.30	2.68	1.63	2.13	2.53
393	19.26	16.93	15.45	2.41	3.25	3.92	2.16	2.94	3.59
402	3.38	3.52	3.60	21.59	27.76	25.56	14.30	16.08	16.80
404	2.66	2.92	3.05	26.62	21.99	20.39	17.12	17.14	17.27
405	2.44	2.72	2.86	21.82	19.94	19.23	17.13	17.06	17.30
410	1.81	2.07	2.20	18.28	19.10	19.90	17.46	18.48	19.75
500	0.64	0.79	0.88	20.47	20.22	20.10	20.14	19.99	19.79
550	0.66	0.79	0.87	17.16	17.75	17.91	16.44	16.99	17.00
598	0.64	0.79	0.86	18.00	18.99	19.97	18.30	19.52	20.68
600	0.64	0.79	0.86	18.13	19.10	20.12	18.49	19.73	20.96
650	0.66	0.84	0.94	20.65	20.43	20.66	22.65	22.86	23.28
700	0.80	1.02	1.15	20.12	19.82	19.49	20.72	20.44	19.91
785	2.26	2.89	3.37	21.15	21.03	20.37	18.06	18.02	17.58
790	2.79	3.63	4.34	28.96	24.01	20.01	18.08	17.52	16.32
792	3.15	4.16	5.04	24.98	18.88	15.65	16.62	15.15	13.60
810	20.23	22.71	24.83	2.07	2.24	2.27	1.93	2.16	2.23
811	21.77	24.27	26.41	1.93	2.12	2.16	1.82	2.05	2.13
816	30.30	32.95	35.21	1.49	1.69	1.77	1.43	1.67	1.77
817	32.26	34.92	37.15	1.43	1.63	1.71	1.38	1.62	1.72
818	34.31	36.96	39.08	1.38	1.58	1.65	1.34	1.57	1.67
820	38.78	41.07	42.36	1.28	1.48	1.56	1.26	1.49	1.59
825	44.16	43.27	42.60	1.11	1.30	1.38	1.11	1.33	1.43
830	41.08	41.12	41.07	0.99	1.16	1.24	1.02	1.22	1.32
850	42.60	43.21	43.51	0.72	0.87	0.94	0.81	0.98	1.06
900	48.27	48.40	48.07	0.46	0.57	0.63	0.65	0.78	0.86
920	47.54	47.75	47.36	0.41	0.51	0.57	0.63	0.75	0.82
925	47.35	47.55	47.21	0.39	0.50	0.56	0.62	0.75	0.82
930	47.21	47.39	47.04	0.38	0.49	0.54	0.62	0.74	0.81
950	46.77	46.98	46.61	0.35	0.44	0.50	0.60	0.72	0.80
975	46.75	46.93	46.57	0.31	0.40	0.46	0.57	0.70	0.78
1000	47.22	47.41	47.03	0.27	0.37	0.42	0.55	0.68	0.77
1025	48.15	48.35	47.89	0.25	0.34	0.39	0.53	0.67	0.77
1050	49.51	49.66	49.15	0.23	0.32	0.37	0.52	0.67	0.77
1075	51.19	51.35	50.69	0.21	0.31	0.35	0.50	0.66	0.77
1100	53.32	53.51	52.64	0.20	0.29	0.34	0.48	0.66	0.77
1125	55.84	56.12	54.99	0.19	0.28	0.33	0.47	0.65	0.77
1150	59.08	59.34	57.68	0.18	0.28	0.32	0.46	0.65	0.77
1175	63.49	63.79	61.14	0.17	0.27	0.31	0.45	0.65	0.77
1200	69.80	70.48	65.38	0.17	0.26	0.30	0.44	0.65	0.77
1225	76.68	81.27	71.68	0.16	0.26	0.30	0.44	0.65	0.77
1250	71.99	72.80	75.21	0.16	0.25	0.29	0.44	0.65	0.77
1275	68.31	68.68	73.22	0.16	0.25	0.29	0.44	0.66	0.78
1300	66.58	66.86	71.06	0.16	0.25	0.29	0.44	0.66	0.78
1325	66.30	66.68	70.42	0.16	0.25	0.29	0.44	0.67	0.80
1350	66.87	67.05	71.23	0.16	0.25	0.29	0.45	0.68	0.81
1375	69.25	69.21	74.03	0.16	0.25	0.29	0.45	0.68	0.81
1400	73.80	74.93	76.64	0.16	0.25	0.30	0.45	0.68	0.81
1425	85.94	81.89	71.65	0.16	0.26	0.30	0.46	0.69	0.82
1450	70.29	69.53	65.89	0.16	0.26	0.30	0.47	0.70	0.83
1500	58.66	58.68	57.48	0.17	0.26	0.30	0.48	0.71	0.84
1600	45.64	45.56	45.21	0.19	0.28	0.32	0.50	0.73	0.87



## Typical Performance Data

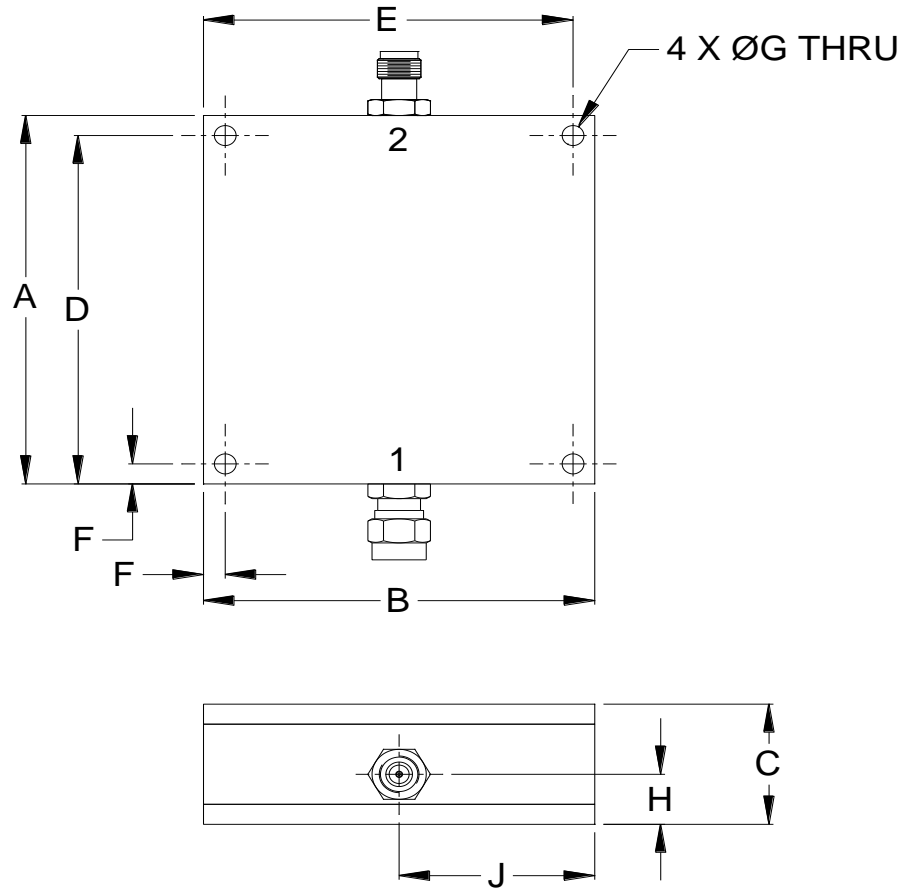
FREQ.  (MHz)	GROUP DELAY		
	(ns)		
	@-40°C	@+25°C	@+85°C
410	17.98	16.80	16.11
415	13.84	13.24	12.88
420	10.54	10.21	10.00
425	9.87	9.58	9.39
430	9.21	8.97	8.81
435	8.57	8.36	8.23
440	7.95	7.77	7.66
445	7.34	7.20	7.11
450	6.75	6.64	6.57
455	6.24	6.15	6.10
460	5.83	5.76	5.72
465	5.50	5.45	5.41
470	5.24	5.19	5.16
475	5.01	4.97	4.95
480	4.82	4.78	4.76
485	4.66	4.62	4.60
490	4.51	4.48	4.46
495	4.38	4.35	4.34
500	4.27	4.24	4.23
505	4.16	4.14	4.13
510	4.07	4.05	4.04
515	3.99	3.97	3.96
520	3.91	3.90	3.89
525	3.85	3.83	3.82
530	3.79	3.77	3.77
535	3.73	3.72	3.71
540	3.68	3.68	3.67
545	3.64	3.64	3.63
550	3.61	3.60	3.60
555	3.58	3.57	3.57
565	3.53	3.53	3.53
585	3.49	3.50	3.51
598	3.50	3.51	3.52
600	3.50	3.51	3.52
615	3.55	3.56	3.57
625	3.59	3.60	3.61
650	3.76	3.77	3.79
655	3.81	3.82	3.84
660	3.86	3.87	3.89
665	3.92	3.93	3.95
670	3.98	4.00	4.02
675	4.05	4.07	4.09
680	4.13	4.15	4.18
685	4.21	4.24	4.27
690	4.31	4.34	4.37
695	4.41	4.45	4.48
700	4.53	4.57	4.60
705	4.66	4.70	4.74
710	4.80	4.85	4.89
715	4.96	5.01	5.05
720	5.14	5.19	5.24
725	5.34	5.40	5.46
730	5.57	5.65	5.71
735	5.84	5.92	6.00
740	6.15	6.25	6.34
745	6.52	6.63	6.74
755	7.43	7.59	7.75
760	7.91	8.11	8.28
765	8.40	8.62	8.82
785	13.82	14.50	15.14

## Typical Performance Curves



## Outline Dimensions

UU1842



CASE#	A	B	C	D	E	F	G	H	J	WT.GRAMS
UU1842	2.300 (58.42)	2.250 (57.15)	0.750 (19.05)	2.175 (55.25)	2.125 (53.98)	0.125 (3.18)	0.125 (3.18)	0.312 (7.93)	1.125 (28.58)	124

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

### Notes:

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



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](http://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	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I