

Coaxial Low Pass Filter

50Ω *DC to 1450 MHz

VLF-1450+



Generic photo used for illustration purposes only

CASE STYLE: FF704

| Connectors | Model |
|------------|-----------|
| SMA | VLF-1450+ |

+RoHS Compliant

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

Maximum Ratings

| | |
|----------------------------|-------------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input* | 10W max. at 25°C |
| DC Current Input to Output | 0.5A max. at 25°C |

* Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

Features

- rugged uni-body construction, small size
- 7 sections
- excellent power handling, 10W
- temperature stable
- low cost
- protected by U.S. Patent 6,943,646

Applications

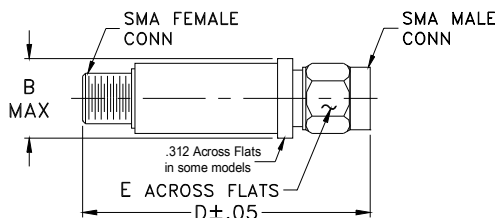
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

| PASSBAND (MHz) (loss < 1 dB) | f _{co} , MHz Nom. (loss 3 dB) | STOP BAND (MHz) (loss, dB) | | | VSWR (:1) | | NO. OF SECTIONS |
|---------------------------------|--|-------------------------------|------------|---------------|------------------|------------------|-----------------|
| | | f 20 Min. | 30 Typ. | fr 20 Typ. | Stopband Typ. | Passband Typ. | |
| Max. | Typ. | Min. | Typ. | Typ. | Typ. | Typ. | 7 |
| *DC-1450 | 1825 | 2025 | 2050-6600 | 6700 | 20 | 1.2 | |

* Not for use with DC voltage at input and output ports

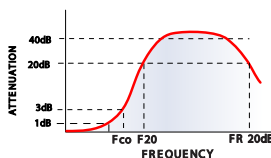
Outline Drawing



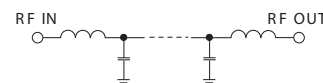
Outline Dimensions (inch/mm)

| B | D | E | wt |
|-------|-------|------|-------|
| .410 | 1.43 | .312 | grams |
| 10.41 | 36.32 | 7.92 | 10.0 |

typical frequency response

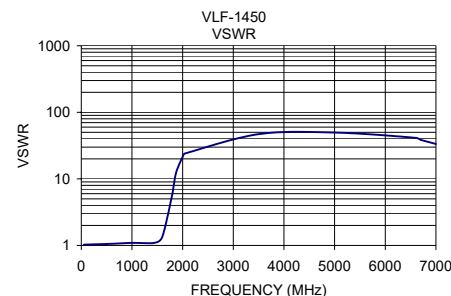
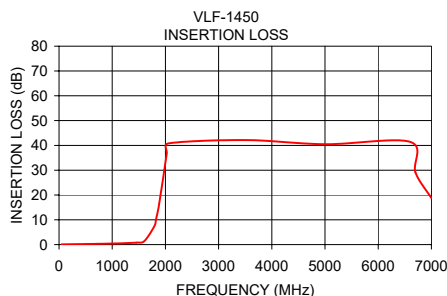


electrical schematic



Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50 | 0.09 | 1.03 |
| 500 | 0.22 | 1.05 |
| 1000 | 0.41 | 1.09 |
| 1450 | 0.79 | 1.10 |
| 1600 | 1.36 | 1.35 |
| 1790 | 7.31 | 5.59 |
| 1825 | 10.28 | 8.08 |
| 1880 | 16.05 | 13.09 |
| 2025 | 36.64 | 23.49 |
| 2050 | 40.77 | 24.14 |
| 3500 | 42.15 | 46.96 |
| 5000 | 40.48 | 49.64 |
| 6600 | 41.43 | 41.37 |
| 6700 | 29.08 | 38.61 |
| 7000 | 18.74 | 33.42 |



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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



Coaxial Low Pass Filter

VLF-1450+

Typical Performance Data

| FREQ. (MHz) | INSERTION LOSS (dB) | | | INPUT RETURN LOSS (dB) | | | OUTPUT RETURNLOSS (dB) | | |
|----------------|------------------------|----------|-----------|---------------------------|----------|-----------|---------------------------|----------|-----------|
| | @ -55° C | @ +25° C | @ +100° C | @ -55° C | @ +25° C | @ +100° C | @ -55° C | @ +25° C | @ +100° C |
| 50 | 0.05 | 0.09 | 0.09 | 39.31 | 36.79 | 35.90 | 39.73 | 37.20 | 36.31 |
| 100 | 0.07 | 0.09 | 0.11 | 36.65 | 34.68 | 33.75 | 36.95 | 34.86 | 33.82 |
| 500 | 0.17 | 0.22 | 0.25 | 30.35 | 32.31 | 34.66 | 29.14 | 30.08 | 30.86 |
| 1000 | 0.29 | 0.41 | 0.46 | 27.65 | 27.05 | 26.97 | 26.89 | 26.01 | 25.59 |
| 1450 | 0.61 | 0.79 | 0.91 | 26.09 | 26.76 | 27.11 | 24.72 | 24.63 | 24.45 |
| 1530 | 0.76 | 1.00 | 1.14 | 24.49 | 23.77 | 23.03 | 22.57 | 21.93 | 21.39 |
| 1685 | 1.95 | 2.49 | 2.89 | 9.88 | 9.15 | 8.66 | 10.53 | 10.09 | 9.82 |
| 1700 | 2.26 | 2.88 | 3.31 | 8.72 | 8.04 | 7.57 | 9.46 | 9.05 | 8.81 |
| 1740 | 3.47 | 4.31 | 4.95 | 5.94 | 5.46 | 5.13 | 6.81 | 6.54 | 6.37 |
| 1825 | 8.79 | 10.28 | 11.39 | 2.22 | 2.16 | 2.14 | 3.02 | 3.10 | 3.13 |
| 1860 | 12.10 | 13.80 | 15.03 | 1.49 | 1.55 | 1.58 | 2.30 | 2.45 | 2.53 |
| 1910 | 17.82 | 19.74 | 21.15 | 0.98 | 1.11 | 1.20 | 1.65 | 1.84 | 1.93 |
| 1960 | 24.37 | 26.53 | 28.10 | 0.77 | 0.92 | 1.00 | 1.34 | 1.53 | 1.64 |
| 1975 | 26.49 | 28.72 | 30.38 | 0.72 | 0.87 | 0.97 | 1.25 | 1.45 | 1.54 |
| 2000 | 30.22 | 32.60 | 34.34 | 0.65 | 0.79 | 0.91 | 1.14 | 1.33 | 1.43 |
| 2025 | 34.18 | 36.64 | 38.45 | 0.58 | 0.74 | 0.83 | 1.06 | 1.25 | 1.33 |
| 2040 | 36.68 | 39.14 | 41.00 | 0.55 | 0.72 | 0.82 | 1.03 | 1.19 | 1.30 |
| 2050 | 38.35 | 40.77 | 42.68 | 0.57 | 0.72 | 0.84 | 1.00 | 1.16 | 1.26 |
| 2125 | 47.07 | 47.32 | 47.25 | 0.45 | 0.62 | 0.69 | 0.83 | 0.99 | 1.08 |
| 2660 | 33.18 | 33.39 | 33.48 | 0.25 | 0.39 | 0.50 | 0.44 | 0.58 | 0.68 |
| 3000 | 35.37 | 35.70 | 35.96 | 0.25 | 0.38 | 0.47 | 0.33 | 0.49 | 0.60 |
| 3500 | 41.56 | 42.15 | 42.51 | 0.25 | 0.37 | 0.44 | 0.34 | 0.49 | 0.58 |
| 4000 | 53.74 | 54.95 | 56.25 | 0.21 | 0.33 | 0.40 | 0.26 | 0.42 | 0.50 |
| 4160 | 68.10 | 68.65 | 65.88 | 0.20 | 0.33 | 0.43 | 0.29 | 0.43 | 0.50 |
| 4230 | 65.18 | 61.83 | 59.74 | 0.21 | 0.36 | 0.43 | 0.30 | 0.44 | 0.51 |
| 4300 | 57.86 | 56.17 | 55.18 | 0.20 | 0.38 | 0.45 | 0.28 | 0.41 | 0.49 |
| 4500 | 49.47 | 48.73 | 48.19 | 0.20 | 0.36 | 0.44 | 0.23 | 0.39 | 0.45 |
| 5000 | 40.77 | 40.48 | 40.29 | 0.19 | 0.35 | 0.46 | 0.23 | 0.37 | 0.46 |
| 6500 | 36.91 | 38.78 | 40.53 | 0.21 | 0.41 | 0.57 | 0.19 | 0.40 | 0.59 |
| 6600 | 42.01 | 41.43 | 38.01 | 0.22 | 0.42 | 0.61 | 0.24 | 0.51 | 0.74 |
| 6630 | 42.60 | 38.09 | 34.14 | 0.19 | 0.40 | 0.59 | 0.28 | 0.56 | 0.83 |
| 6700 | 34.24 | 29.08 | 25.72 | 0.21 | 0.45 | 0.68 | 0.40 | 0.85 | 1.35 |
| 6890 | 13.83 | 15.49 | 17.02 | 0.90 | 0.81 | 0.82 | 5.26 | 2.55 | 1.77 |
| 7000 | 17.18 | 18.74 | 19.62 | 0.37 | 0.52 | 0.64 | 0.83 | 0.78 | 0.84 |
| 8000 | 21.04 | 21.02 | 21.12 | 0.16 | 0.40 | 0.56 | 0.16 | 0.39 | 0.59 |
| 10000 | 15.77 | 15.79 | 15.73 | 0.24 | 0.53 | 0.72 | 0.35 | 0.56 | 0.68 |
| 11000 | 12.65 | 12.86 | 12.91 | 0.58 | 0.90 | 1.13 | 0.63 | 0.90 | 1.04 |
| 12000 | 9.22 | 9.27 | 9.37 | 1.27 | 1.83 | 2.28 | 1.41 | 2.03 | 2.57 |
| 12240 | 8.26 | 8.35 | 8.91 | 1.71 | 2.49 | 3.01 | 2.38 | 4.03 | 5.90 |
| 13000 | 12.97 | 15.15 | 15.60 | 8.51 | 10.34 | 8.04 | 1.42 | 1.65 | 1.91 |

REV. X1
VLF-1450+
070924
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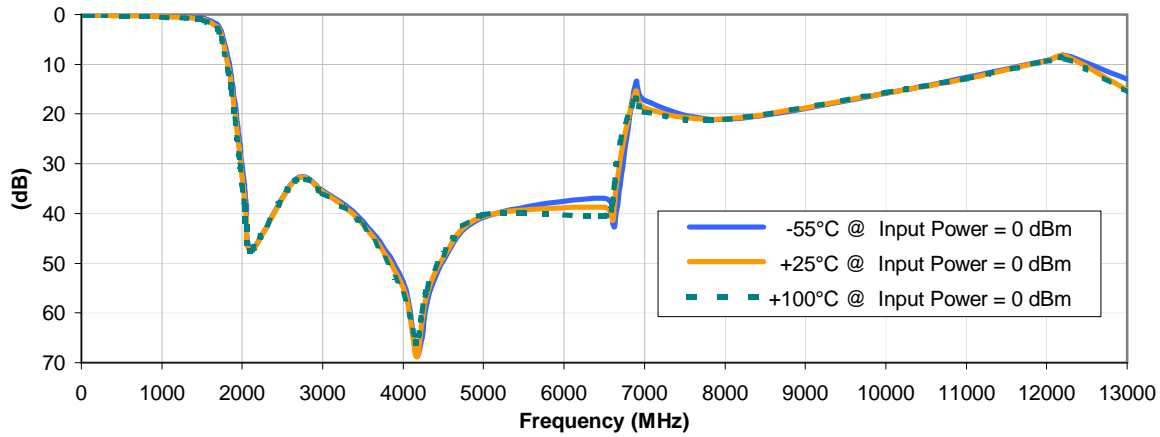


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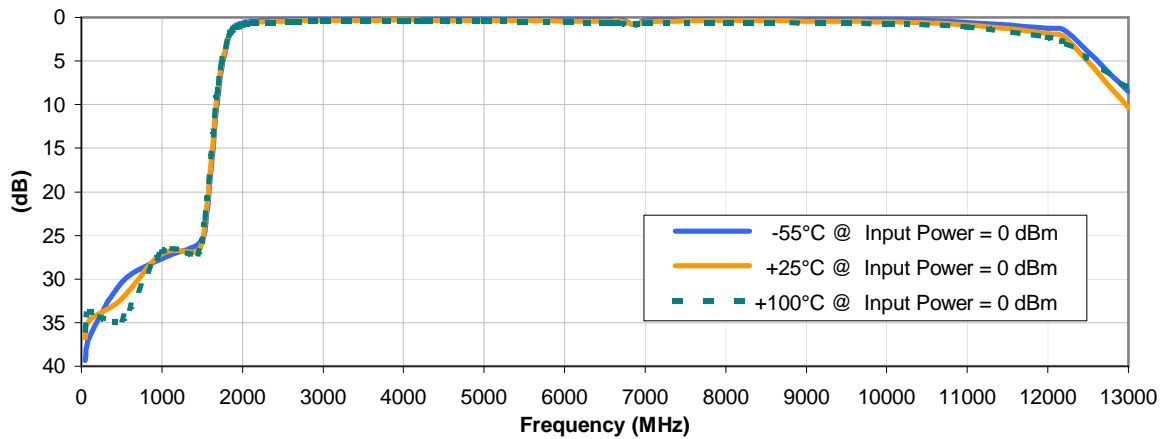


Typical Performance Curves

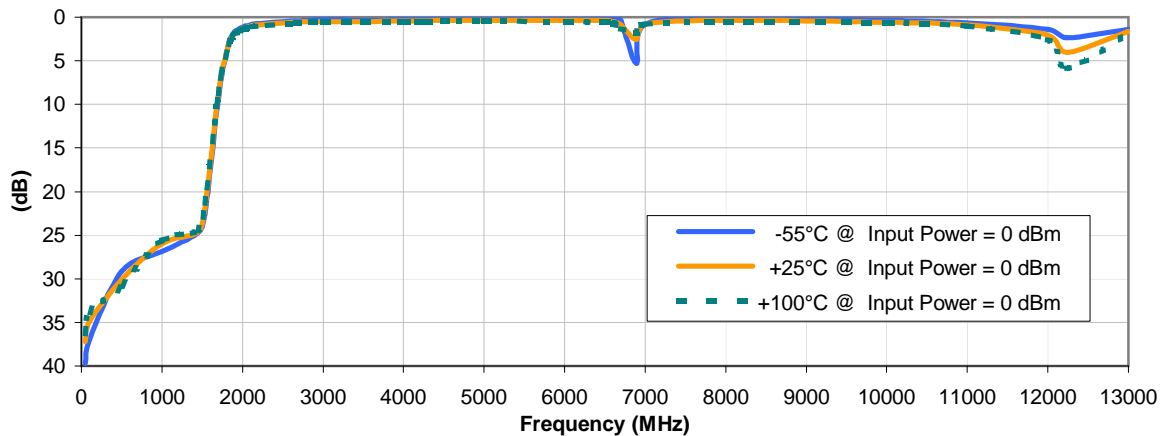
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE

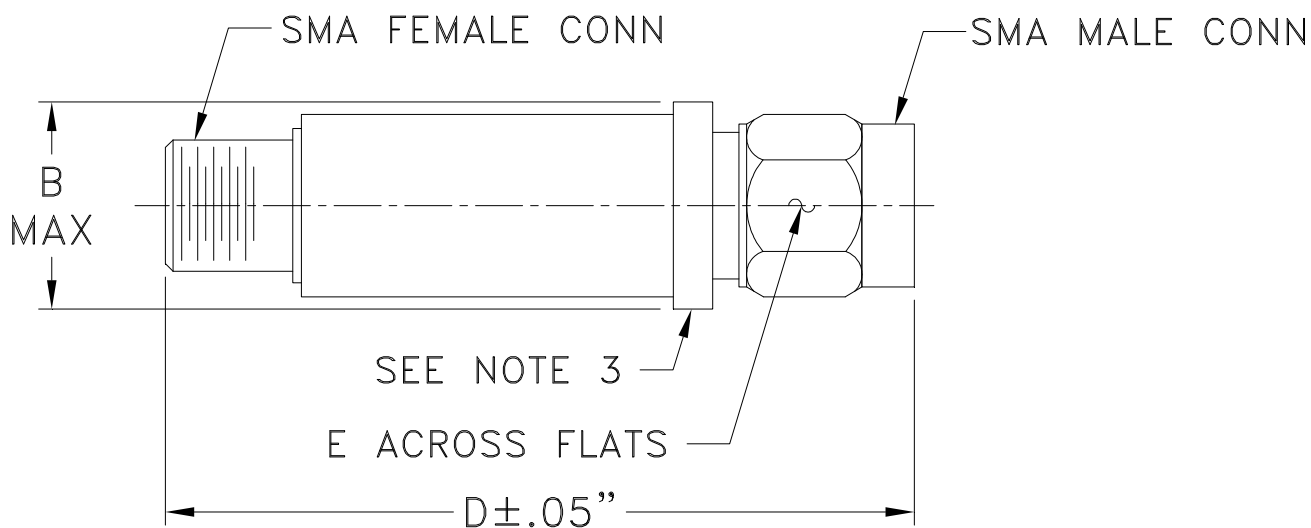


Case Style

FF

FF704

Outline Dimensions



| CASE #. | A | B | C | D | E | WT GRAMS |
|---------|----|-----------------|----|-----------------|----------------|----------|
| FF704 | -- | .410 (10.41) | -- | 1.43 (36.32) | .312 (7.92) | 10.0 |

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.

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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 |
| 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 |