

Very High DC Current

RF Choke

ADCH-1220-75+

75Ω 5 to 1220 MHz

The Big Deal

- Very wideband, 5 to 1220 MHz
- Maximum DC current handling capability of 200mA
- Excellent Insertion Loss, .3dB typical
- Good Return Loss, 20 dB typ.
- SMT Package



CASE STYLE: CD637

Product Overview

The ADCH-1220-75+ series of RF Chokes achieve very wide bandwidth from 5 up to 1220 MHz. The choke is wound with AWG32 wire, making the maximum continuous current 200mA DC. Excellent Insertion Loss, good VSWR (1.22:1 typ.), flatness and rugged construction make these models ideal solutions for rf-choke applications across a very wide frequency range. These units support a broad range of system and test applications.

Key Features

| Feature | Advantages |
|---|--|
| Extremely wideband, 5 to 1220 MHz | Ideal for an exceptionally wide variety of lab and system applications. |
| Excellent Insertion Loss, .3 dB typ. across entire range. | Provides excellent signal transmission from input to output with consistent performance across its entire frequency range. |
| Good Return Loss, 20 dB typ. | Efficient power utilization with minimal signal power reflected back to source |
| 200mA DC continuous | Ideal for DC injection applications requiring high current levels. |
| Rugged Construction | Withstands harsh environmental conditions for high reliability and long life of use. |

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



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Generic photo used for illustration purposes only
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+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost
Reel Size 13" Devices/Reel 900

Maximum Ratings

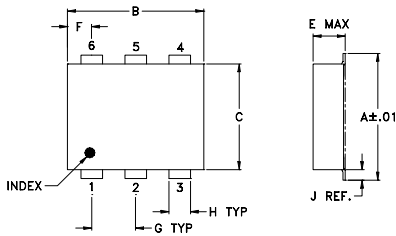
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| DC Current | 300mA |

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

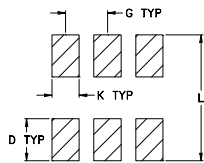
Pin Connections

| | |
|------------|---------|
| RF-IN & DC | 1 |
| RF GROUND | 4 |
| NOT USED | 2,3,5,6 |

Outline Drawing



PBC Land Pattern

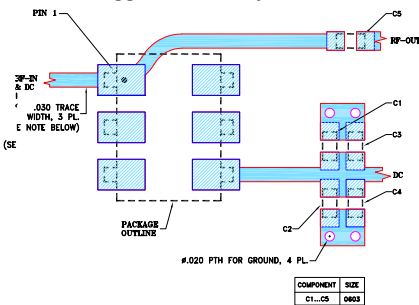


Suggested Layout
Tolerance to be within ±.002

Outline Dimensions (in/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|-------|------|------|
| .272 | .310 | .220 | .100 | .206 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 5.23 | 1.40 | 2.54 |
| H | J | K | L | wt | | |
| .030 | .026 | .065 | .300 | grams | | |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.40 | | |

Demo Board MCL P/N: TB-1168+ Suggested PCB Layout (PL-700)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350R WITH DIELECTRIC THICKNESS .030±.0015"; COPPER: 1/2 OZ. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-ADCH-1220-75+.
 - BOTTOM COPPER OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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Features

- low parasitic capacitance 0.1 pf typ.
- effective parallel resistance, Rch 800 ohm typ.
- aqueous washable
- protected by US Patent, 6,133,525

Applications

- biasing amplifiers
- biasing of laser diodes
- biasing of active antennas

Electrical Specifications at 25°C

| Parameter | Condition (MHz) | Min. | Typ. | Max. | Unit |
|----------------|-----------------|------|------|------|------|
| Insertion Loss | 5-10 | — | 0.6 | 1.4 | dB |
| | 10-1220 | — | 0.3 | 0.5 | |
| VSWR* | 5-10 | — | 2.0 | — | :1 |
| | 10-1220 | — | 1.2 | 1.38 | |
| DC Current | — | — | — | 200 | mA |
| Inductance | @ 0 mA | — | 3.4 | — | μH |

* tested with circuit shown below, Zo=75 ohms

Typical Performance Data

| FREQUENCY (MHz) | INSERTION LOSS (dB) | RETURN LOSS (dB) |
|-----------------|---------------------|------------------|
| 5 | 0.55 | 9.62 |
| 60 | 0.30 | 27.89 |
| 120 | 0.25 | 32.00 |
| 175 | 0.23 | 33.24 |
| 235 | 0.21 | 32.17 |
| 350 | 0.20 | 28.47 |
| 405 | 0.20 | 26.79 |
| 465 | 0.20 | 25.19 |
| 525 | 0.20 | 24.24 |
| 580 | 0.20 | 23.28 |
| 650 | 0.21 | 23.00 |
| 755 | 0.20 | 21.17 |
| 810 | 0.21 | 20.69 |
| 870 | 0.21 | 20.35 |
| 930 | 0.22 | 20.12 |
| 985 | 0.22 | 20.04 |
| 1045 | 0.23 | 19.74 |
| 1100 | 0.24 | 19.70 |
| 1160 | 0.25 | 19.62 |
| 1220 | 0.25 | 19.64 |

