

ADSL Micro Filter

ATF053B3

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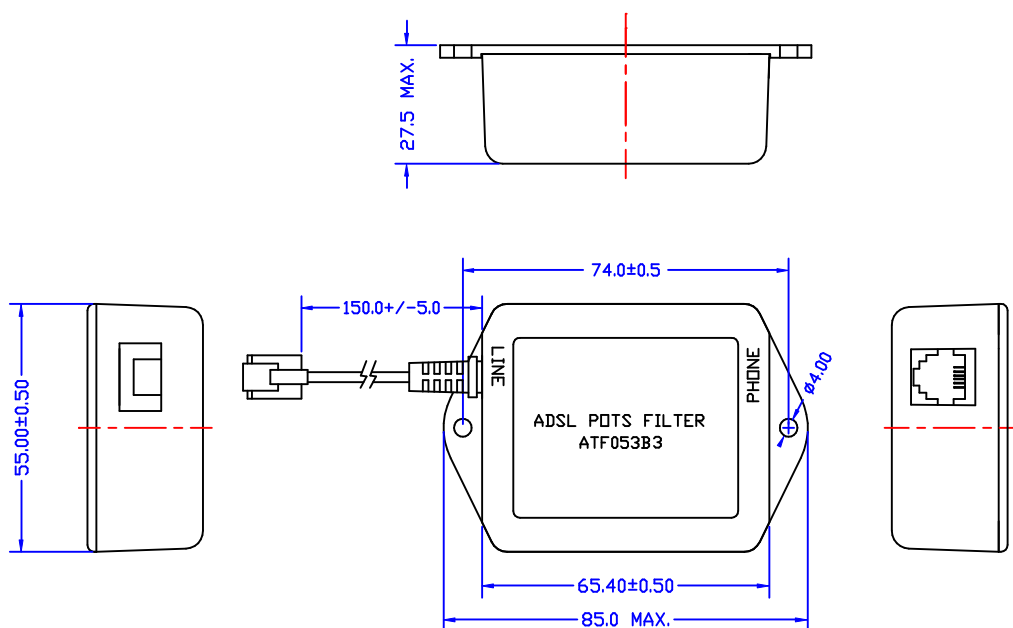
1 Introduction

This specification describes the technical and functional requirements for an ADSL micro filter. The unit is intended to be installed at the subscriber's premises between the line terminating wall jack with ADSL service and the POTS terminal (Telephone, Modem, fax machine, etc.) the unit shall pass only the low POTS frequency band (0 to 4KHz) to the POTS terminal and filter out the ADSL signal (26KHz to 1100KHz).

2 Definitions in alphabetical order of nouns

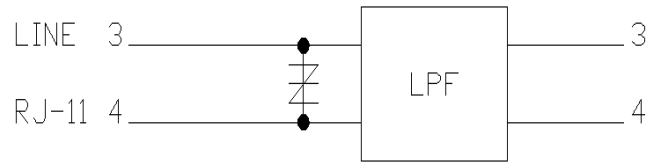
CO-POTS:	Central office plain old telephone service.
R-POTS:	A remote plain old telephone service.
xDSL:	Digital subscriber line (including ADSL, HDSL, SDSL, VDSL)
ATU-C:	ADSL transceiver unit central

3 Dimension



4 Technical requirement

4.1 Schematic



4.2 Terminating Impedances

4.2.1 ZHP-r

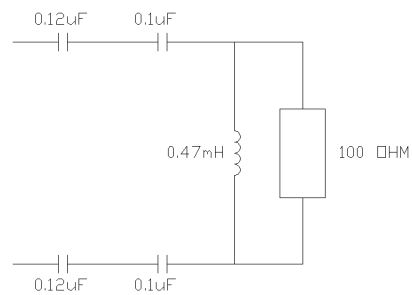


FIGURE 3

4.2.2 Z_R is the European harmonized complex impedance.

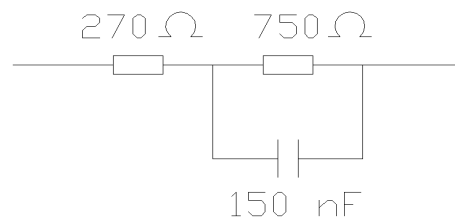


FIGURE 4

4.2.3 Z_{SL} is an impedance used to simulate a short line terminated in 600OHM.

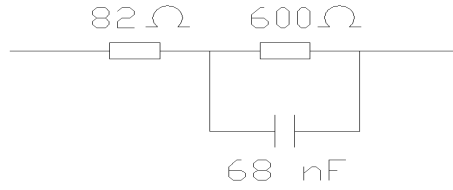


FIGURE 5

5 Electrical characteristics

5.1 DC characteristics

Due to the fact that in the case of distributed filters, there will most likely be a number of them connected in parallel (see figure 6). $N=1$

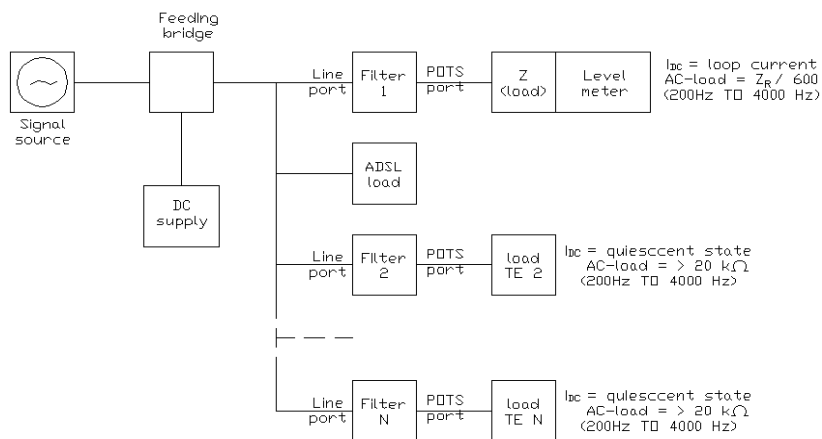


FIGURE 6

5.1.1 DC resistance to earth

The DC resistance between (TIP and RING) of the splitter and earth, when tested with 100V, shall not less then 100MOHM.

5.1.2 DC resistance between TIP and RING

When test with 100V DC, shall not be less then 25MOHM.

5.2 AC characteristics

5.2.1 Insertion loss

A test configuration is described in Figure 6, with a DC loop current of 15mA to 80mA.

5.2.2 Insertion Loss Distortion

The absolute difference between the Insertion Loss at any frequency in the range 200Hz to 4KHz and the Insertion Loss at 1KHz shall be less than 1dB.

5.2.3 Return Loss

5.2.3.1 Return Loss testing at the POTS port.

See Figure 7, Requirements see Table 1.

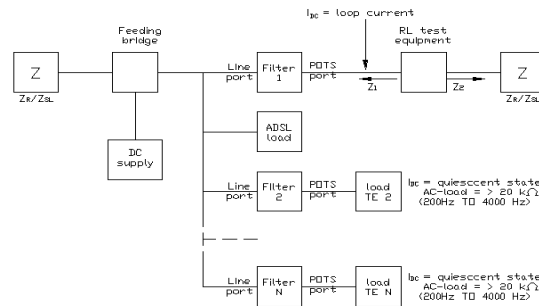


FIGURE 7

Test #	Value of Z1	Frequency range	Minimum Return Loss
Test 1	ZSL	300Hz to 3400Hz	12dB
Test 2	ZSL	3400Hz to 4000Hz	8dB
Test 3	ZR	300Hz to 3400Hz	12dB
Test 4	ZR	3400Hz to 4000Hz	8dB

Table 1

5.2.3.2 Return Loss testing at the Line port.
See figure8, Requirements see Table1.

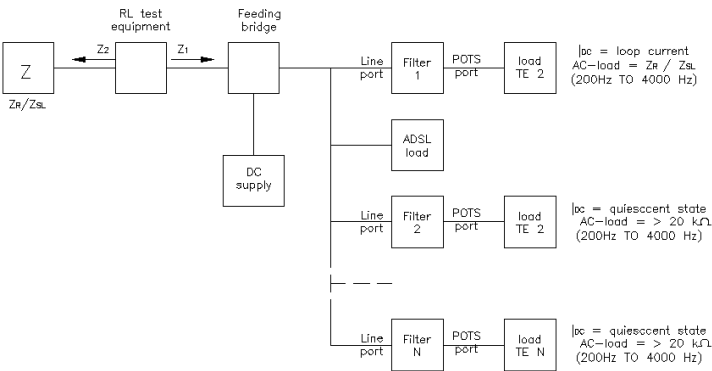


FIGURE 8

5.2.4 Unbalance about earth
Requirements see Table 2.

Frequency range	Value of R	Min. LCL value
50Hz to 600Hz	300OHM	40dB
600Hz to 3400Hz	300OHM	46dB
3400Hz to 4000Hz	300OHM	40dB
4KHz to 30KHz	50OHM	40dB
30KHz to 1104KHz	50OHM	50dB
1104KHz to 5MHz	50OHM	30dB

Table 2

5.2.5 Isolation (Insertion Loss) at 32KHz to 1.1MHz.
Using the test configuration (Figure 6), should be as follows

Frequency range	Minimum loss
32KHz to 100KHz	25dB
100KHz to 1100KHz	45dB

5.2.6 Line side impedance of the filter at ADSL frequencies (32KHz to 1100KHz)

The filter shall present an impedance to the line side of at least 1000OHM for the frequency range 32KHz to 1100KHz. This requirement should apply with the POTS port terminated in Z_{RHF} .

6 Environmental conditions:

Operating Temperature: 0 ~ 70°C

Storage Temperature: -25 ~ 75°C

Relative Humidity: up to 85% for 0 ~ 35°C

7 Reference

ETSI TR 101 728 V1.2.1 (2002-05)

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