

## **Customer Specification File**

**Customer: Catalog**

**Project : ADSL Splitter**

**Request from :**

**Magcom PN: IS0023-11**

<b>Revision</b>	<b>Realized By</b>	<b>Modification Description</b>	<b>Date</b>	<b>Last Pages</b>
<b>A01</b>	<b>PaulSu</b>	<b>Data sheet updated</b>	<b>Sep-13-2006</b>	<b>9</b>

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**1 Preliminary:**

The IS0023-11 is a splitter module that has been specifically designed to implement the functionality of low pass filter in ADSL over ISDN application.

IS0023-11 had also included protection circuit to provide additional protection against line overstress which could damage the splitter itself .

**3 Standard reference documents:**

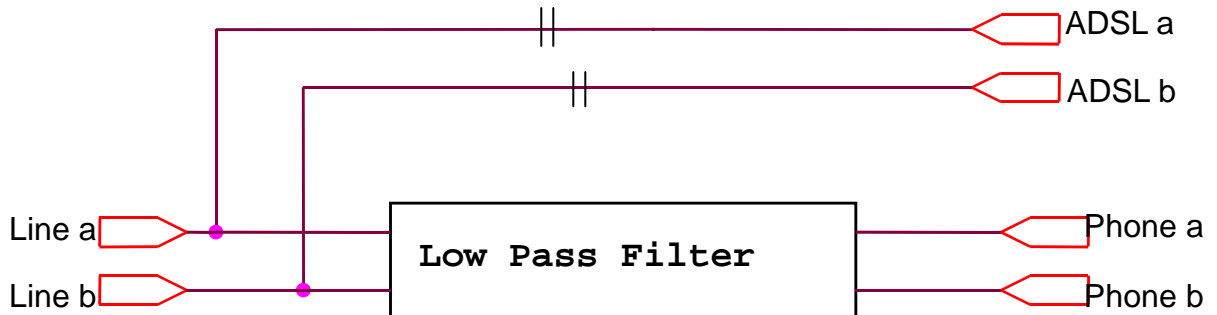
- ETSI TS 101 952-1-3
- ETSI TS 101 952-1-4

**4 Features**

- Comply to K21
  
- Compact package, includes connectors for ease of installation
  
- 100 mA DC Loop Current Capacity

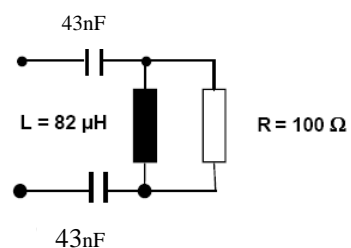
## 5 Design Requirement

### 5.1 Schematic



## 5.2 Electrical Performance

### 5.2.1 General conditions

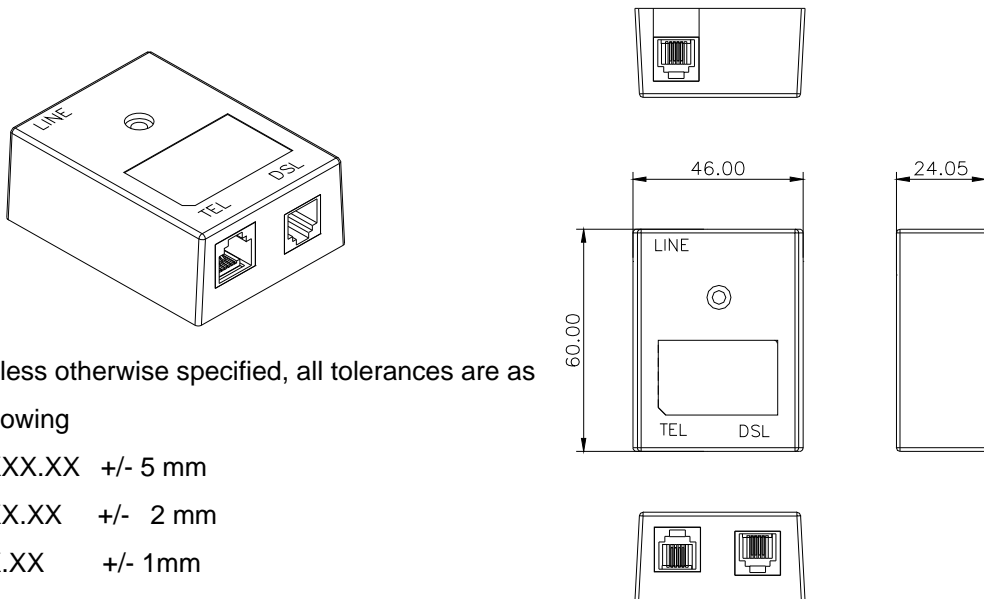
General conditions		
	Conditions	Values
Splitter bandwidth		DC-94KHz
Nominal impedance ISDN	$Z_{ISDN}$	150 ohms
Nominal impedance LINE	$Z_{LINE}$	135 ohms
Modem impedance		100 ohms
$Z_{ADSL-I}$	0Hz ~ 4KHz	
ADSL band impedance	150KHz ~ 2.2MHz	100Ω
Max. operating voltage to ground		250VDC
DC Loop current		<80mA

**5.2.2 Electrical Requirement**

<b>Electrical Requirement</b>		
<b>DC requirements</b>		
	<b>Conditions</b>	<b>Values</b>
TIP to RING	100VDC	> 5 MΩ
TIP to RING	ISDN port shorted	<12.5Ω
DC feeding current		< 60 mA
<b>ISDN Pass band loss requirements</b>		
Insertion loss w/ ZADSL-I	(Z <sub>ISDN</sub> )/1 kHz to 60 kHz	<1.2 dB
	(Z <sub>ISDN</sub> )/60kHz to 80 kHz	<2.0 dB
Return loss w/ ZADSL-I	(Z <sub>ISDN</sub> )/1 kHz to 60 kHz	<16 dB
	(Z <sub>ISDN</sub> )/60kHz to 80 kHz	<14 dB
Delay distortion	300 Hz to 80 kHz	< 20 usec.
<b>POTS Pass band loss requirements</b>		
Insertion loss (w/ and w/o ZADSL-I)	1000Hz	<1.0 dB
Insertion loss (w/ and w/o ZADSL-I)	11.94Hz–17KHz(Load 200ohms)	<3.0 dB
Attenuation distortion (w/ and w/o ZADSL-I)	600Hz-1.6KHz (Ref 1KHz)	<+/-0.5 dB
	300Hz-3.4KHz (Ref 1KHz)	<±1.0 dB
	200 Hz<f<4 kHz	<±1.0 dB

Stop band requirements					
Splitter parameter	Range	Value	Port		
			DSL	ISDN	LINE
Isolation requirements	138 kHz to 150 kHz	>55dB			
	150 kHz to 1.1MHz	>65dB	ZADSL-I	ZISDN	ZLINE
	1.1MHz to 2.2MHz	>55dB			
ADSL Insertion Loss	120 kHz to 170 kHz	<3 dB	ZADSL-I	ZISDN	ZLINE
	170 kHz to 2.2MHz	<1dB		ZPOTS	
Longitudinal conversion loss LCL	3.4KHz to 30kHz	> 40 dB	-	-	-
	30KHz to 1104kHz	> 50 dB	-	-	-
	1104KHz to 5MHz	> 30 dB	-	-	-

#### 5.4 Mechanical



Unless otherwise specified, all tolerances are as following

- XXXX.XX +/- 5 mm
- XXX.XX +/- 2 mm
- XX.XX +/- 1mm
- X.XX +/- 0.25 mm
- 0.XX +/- 0.05 mm

#### 5.4 Pin Assignments

Connector	Function	Style	Tip	Ring
J1	Line	RJ11	Pin3	Pin4
J2	Modem	RJ11	Pin3	Pin4
J3	Phone	RJ11	Pin3	Pin4

**6 Environmental conditions:**

## 6.1 Resistibility to over voltages and over currents:

Comply with the resistibility requirements per ITU-T Recommendation K.21 electrical safety requirements

## 6.2 Climatic conditions:

## 6.2a. Operating temperature:

-20 °C to +60°C

## 6.2b. Storage and transportation:

Low ambient temperature - 40°C

High ambient temperature +80°C

## 6.2c. Operation humidity:

0 to 95% (non-condensing)

**7 Reliability conditions:**

## 7.1 Thermal shock:

Temperature from -20 °C to +85 °C for 5 cycles

## 7.2. Temperature humidity exposure:

+50 °C / 95 RH, 96hrs

## 7.3. Vibration test:

Random vibration / Overall: 1.15 g rms

Freq. (Hz): 1 → 4 → 100 → 200

PSD (g<sub>2</sub>/ Hz): 0.0001 → 0.01 → 0.01 → 0.001

Test Axis / Time: Top / 30 mins Bottom / 10 mins

X axis / 10 mins Y axis / 10 mins

**8 Note:**