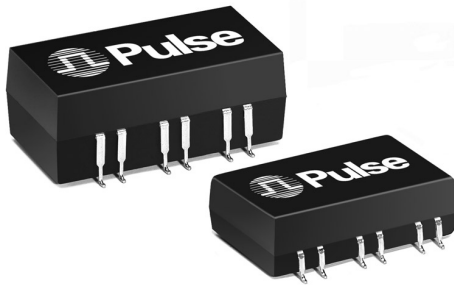


# VDSL FILTER SOLUTIONS



- ⊕ Set of filter modules and hybrid transformers for VDSL
- ⊕ Designed for Long Haul and Short Haul solutions
- ⊕ Matched to Infineon Technologies VDSL solution
- ⊕ FSAN VDSL frequency band: 900 kHz to 8 MHz
- ⊕ Isolation Voltage: 1500 Vrms

## Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

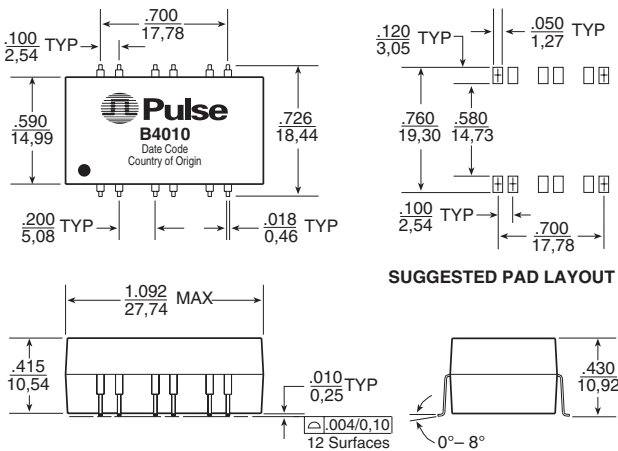
| Part No.               | Description                    | Application <sup>5</sup> | Passband Frequency | Insertion Loss (MAX) | Return Loss (MIN) | Stopband Frequency | Attenuation (MIN) | Impedance |       | Package Type |
|------------------------|--------------------------------|--------------------------|--------------------|----------------------|-------------------|--------------------|-------------------|-----------|-------|--------------|
|                        |                                |                          |                    |                      |                   |                    |                   | TX        | RX    |              |
| B4010 <sup>4</sup>     | ISDN Splitter LPF              | SH/LH                    | 20 kHz to 120 kHz  | 0.4 dB               | 20 dB             | 800 kHz to 7.9 MHz | 65 dB             | 150 Ω     |       | BAB1         |
| B4011 <sup>1,2,6</sup> | Bandpass Filter & Hybrid Xfmr  | 135 Ω Cable              | 900 kHz to 7.9 MHz | 0.5 dB               | 10 dB             | 20 kHz to 150 kHz  | 60 dB             | 40 Ω      | 270 Ω | BAB2         |
| B4014 <sup>1,2,6</sup> | Bandpass Filter & Hybrid Xfmr  | 100 Ω Cable              | 900 kHz to 7.9 MHz | 0.5 dB               | 10 dB             | 20 kHz to 150 kHz  | 60 dB             | 40 Ω      | 270 Ω | BAB2         |
| B4012 <sup>3</sup>     | Receive HPF                    | SH                       | 4.5 MHz to 7.9 MHz | 0.8 dB               | 12 dB             | 900 kHz to 3.0 MHz | 30 dB             | —         | 270 Ω | BAB2         |
| B4013 <sup>3</sup>     | Receive LPF                    | SH                       | 900 kHz to 3.3 MHz | 0.8 dB               | 12 dB             | 4.5 MHz to 7.9 MHz | 20 dB             | —         | 270 Ω | BAB2         |
| B4015 <sup>3</sup>     | Receive HPF - high performance | LH                       | 4.5 MHz to 7.9 MHz | 0.8 dB               | 12 dB             | 900 kHz to 3.0 MHz | 50 dB             | —         | 270 Ω | BAB2         |
| B4016 <sup>3</sup>     | Receive LPF - high performance | LH                       | 900 kHz to 3.0 MHz | 1.2 dB               | 12 dB             | 4.5 MHz to 7.9 MHz | 50 dB             | —         | 270 Ω | BAB2         |
| B4017 <sup>3</sup>     | Transmit LPF                   | LH                       | 900 kHz to 3.0 MHz | 0.8 dB               | 10 dB             | 4.5 MHz to 7.9 MHz | 15 dB             | 40 Ω      | —     | BAB2         |
| B4018 <sup>3</sup>     | Transmit HPF                   | LH                       | 4.5 MHz to 7.9 MHz | 0.8 dB               | 10 dB             | 900 kHz to 3.0 MHz | 10 dB             | 40 Ω      | —     | BAB2         |

### NOTES:

1. Transhybrid loss of B4011 and B4014 is 15 dB, measured with 135 Ω and 100 Ω line impedance respectively.
2. B4011 and B4014 have an additional stopband at 18 MHz to 40 MHz with attenuation of 15 dB.
3. Return loss for B4012-B4018 applies to the stopband, not just the passband.
4. B4010 is designed for loop current of up to 130 mA dc current.
5. Application specifies Short Haul (SH) or Long Haul (LH) where appropriate.
6. B4011 and B4014 provide 1500 Vrms Isolation Voltage.

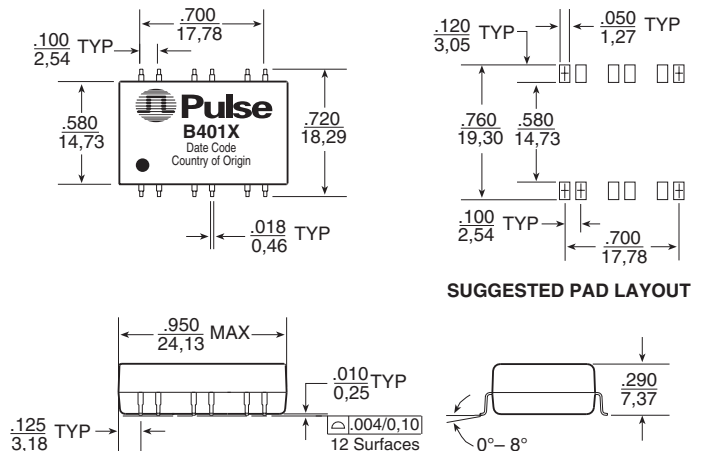
## Mechanicals

### BAB 1



**Weight** ..... 8.5 grams  
**Tape & Reel** ..... .200/reel  
**Tube** ..... .15/tube  
**Dimensions:** Inches  
                   mm  
 Unless otherwise specified,  
 all tolerances are ±  $\frac{.010}{0,25}$

### BAB 2



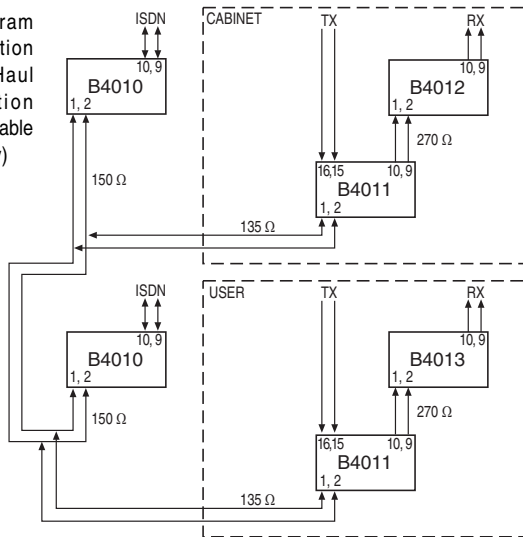
**Weight** ..... 7.0 grams  
**Tape & Reel** ..... .200/reel  
**Tube** ..... .20/tube  
**Dimensions:** Inches  
                   mm  
 Unless otherwise specified,  
 all tolerances are ±  $\frac{.010}{0,25}$

# VDSL FILTER SOLUTIONS

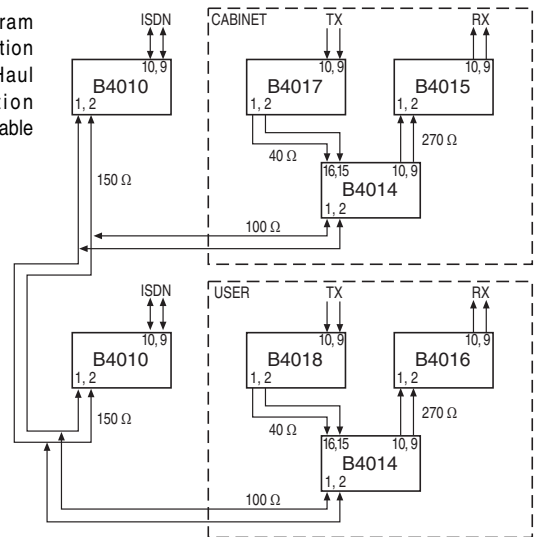


## Application Notes

1. Block Diagram and Connection for Short Haul VDSL Solution over 135  $\Omega$  Cable (e.g. Germany)



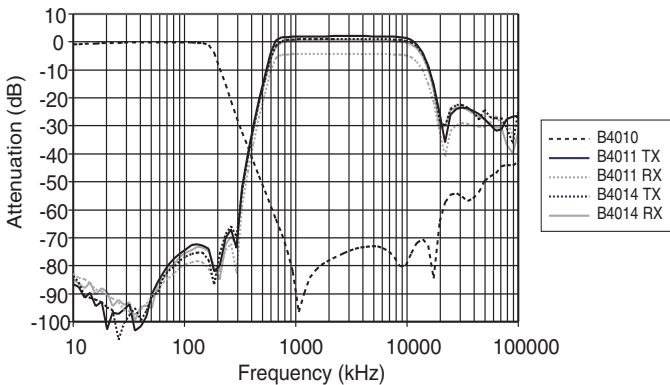
2. Block Diagram and Connection for Long Haul VDSL Solution over 100  $\Omega$  Cable (e.g. U.K.)



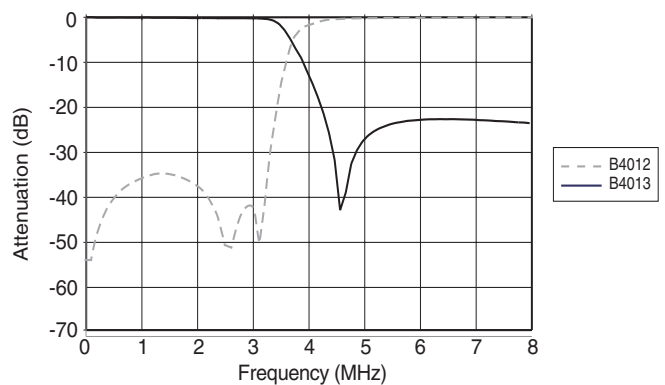
**NOTE:** Long Haul Solution over 135  $\Omega$  Cable is achieved by replacing B4014 in Application 2 with B4011

## Frequency Response

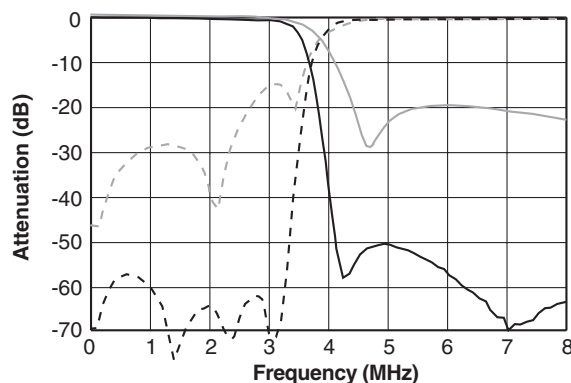
B4010/11/14 Frequency Response



B4012/13 Frequency Response



B4015/16/17/18 Frequency Response



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