

# Filters for Communication Lines

## ISDN Systems

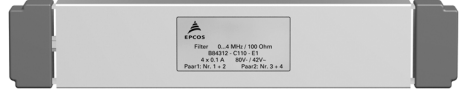
**Series/Type:**      **B84312**

Date: January 2004

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**For ISDN-Interfaces  $S_0$ ,  $S_2$ ,  $U_{P0}$   
and  $U_2$  plus Siemens Hicom installations  
Stopband attenuation up to 40 GHz**



### Features

- Use of coaxial feed-through capacitors on input and output
- Single or current-balanced chokes depending on requirement
- Insertion loss to CISPR 17

### Installation

Single filters are attached straight to the shielding wall. Larger numbers can be housed in filter cabinets or boxes. Various models and the matching flexible connector fittings are available.

### Overview of ISDN systems and suitable filters

| System                      | Standard                          | Number of pairs | Transmission rate                                  | Focal frequency $f_{\text{test}}$ | Filter band width ( $5 \times f_{\text{test}}$ ) | $Z_L$<br>$\Omega$ | Filter (Ordering code) |
|-----------------------------|-----------------------------------|-----------------|----------------------------------------------------|-----------------------------------|--------------------------------------------------|-------------------|------------------------|
| $S_2$<br>and/or<br>PCM 30   | CCITT,<br>G.703                   | 2               | 2.048 Mbit/s                                       | 1.024 MHz                         | 5.12 MHz                                         | 120               | B84312C0112E001        |
| $S_0$<br>ISDN,<br>2B+D      | CCITT,<br>I.430<br>ETS300012      | 2               | 144 kbit/s                                         | 96 kHz                            | 480 kHz                                          | 85...<br>160      | B84312C0110E001        |
| $U_{P0}$<br>ISDN,<br>2B+D   | ZVEI                              | 1               | 304 kbit/s<br>(152 kbit/s<br>in each<br>direction) | 192 kHz                           | 960 kHz                                          | 100               | B84312C0114B001        |
| $U_{2B1Q}$<br>ISDN,<br>2B+D | ANSI<br><br>T1.601-1988           | 1               | 160 kbit/s                                         | 40 kHz                            | 200 kHz                                          | 135               | B84312C0060B001        |
| $U_{K0}$<br>ISDN,<br>2B+D   | FTZ 1<br>TR 220                   | 1               | 160 kbit/s                                         | 60 kHz                            | 300 kHz                                          | 150               | B84312C0060B001        |
| $U_{200}$<br>1B+D           | Interface for<br>Siemens<br>Hicom | 1               | 160 kbit/s<br>(80 kbit/s<br>in each<br>direction)  | 128 kHz                           | 640 kHz                                          | 130               | B84312C0114B001        |

**ISDN systems**
**General technical data**

|                                 |            |                              |    |                                        |
|---------------------------------|------------|------------------------------|----|----------------------------------------|
| Rated voltage                   | $V_{R,AC}$ | 42 and 100                   | V  |                                        |
| Rated voltage                   | $V_{R,DC}$ | 80 and 100                   | V  |                                        |
| Rated frequency                 | $f_R$      | See characteristics          |    | Pass bandwidth at $Z_L$                |
| Rated current                   | $I_R$      | 100                          | mA | Referred to +40 °C ambient temperature |
| Line impedance                  | $Z_L$      | See characteristics          |    |                                        |
| Test voltage                    | $V_{rest}$ | 250 VDC, 2 s<br>250 VDC, 2 s |    | Line/line<br>Line/case                 |
| Maximum DC resistance           | $R_{max}$  | See characteristics          |    | Per line                               |
| Permissible ambient temperature | $T_A$      | -25/+40                      | °C |                                        |
| Climatic category (EN 60068-1)  |            | 25/085/56                    |    | -25 °C/+85 °C/56 days damp heat test   |
| Approx. weight                  |            | 560                          | g  |                                        |

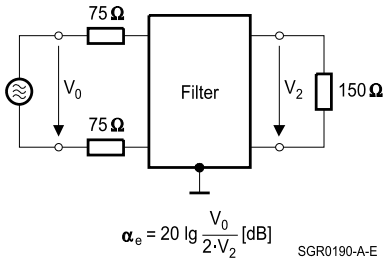
**Characteristics and ordering codes**

| $V_{R,AC}$ | $V_{R,DC}$ | $f_R$     | $Z_L$    | $R_{max}$ | Number of pairs | Ordering code   |
|------------|------------|-----------|----------|-----------|-----------------|-----------------|
| V          | V          | MHz       | $\Omega$ | $\Omega$  |                 |                 |
| 100        | 100        | 0 ... 0.3 | 150      | 2         | 1               | B84312C0060B001 |
| 42         | 80         | 0 ... 4   | 100      | 4.2       | 1               | B84312C0114B001 |
| 42         | 80         | 0 ... 4   | 100      | 4.2       | 2               | B84312C0110E001 |
| 42         | 80         | 0 ... 10  | 50       | 1         | 2               | B84312C0112E001 |

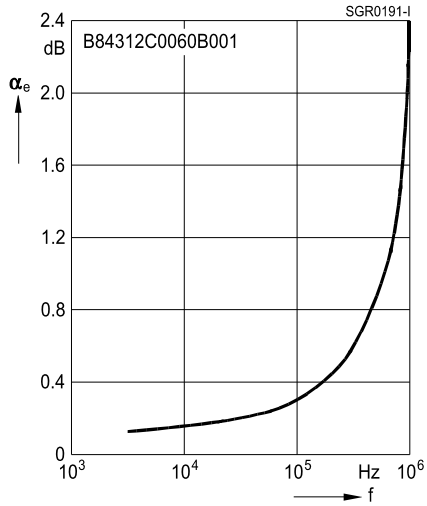
**Insertion loss  $\alpha_e$  in passband (typical)**

B84312C0060B001

Measurement circuit

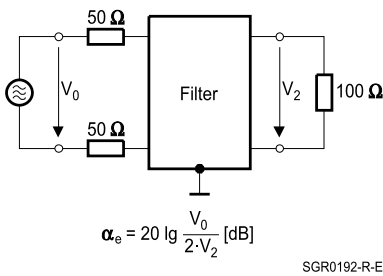


Symmetrical measurement circuit  
with  $Z_L = 150 \Omega$

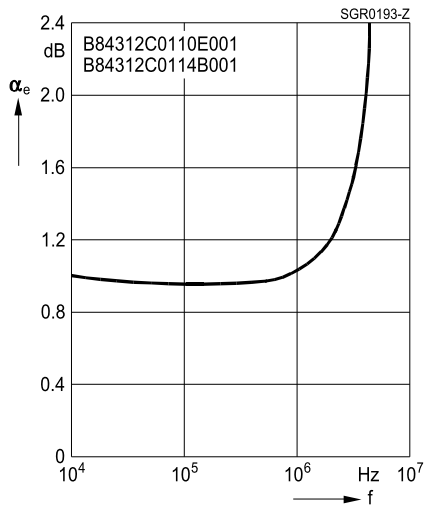


B84312C0110E001, ...C0114B001

Measurement circuit

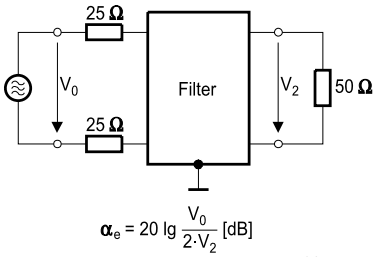


Symmetrical measurement circuit  
with  $Z_L = 100 \Omega$

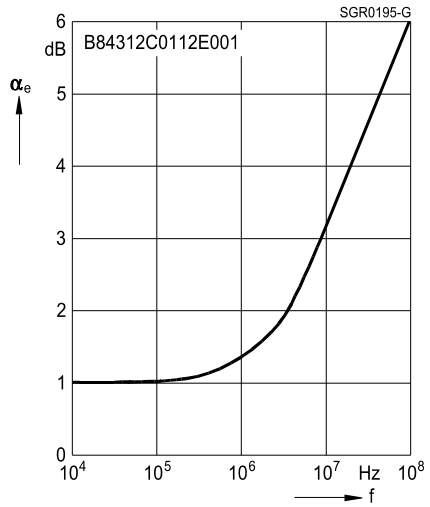


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Measurement circuit

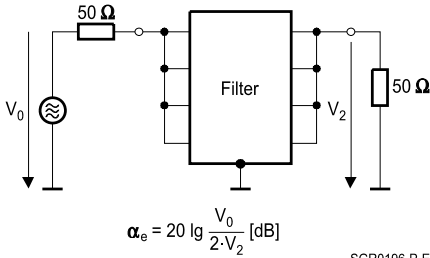


Symmetrical measurement circuit  
with  $Z_L = 50 \Omega$



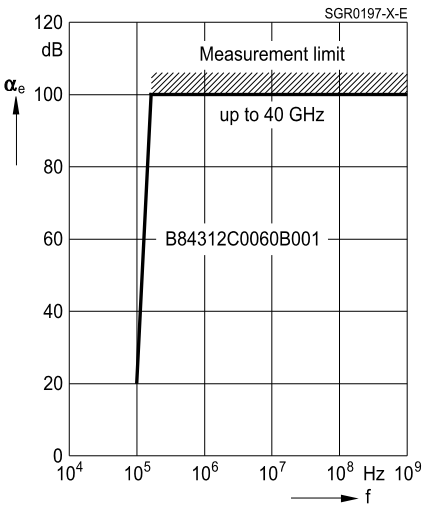
**Insertion loss  $\alpha_e$  in stopband (typical)**

Measurement circuit

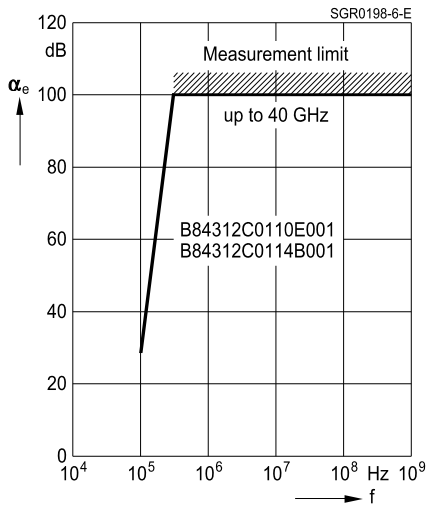


Asymmetrical measurement circuit  
to MIL-STD-220A

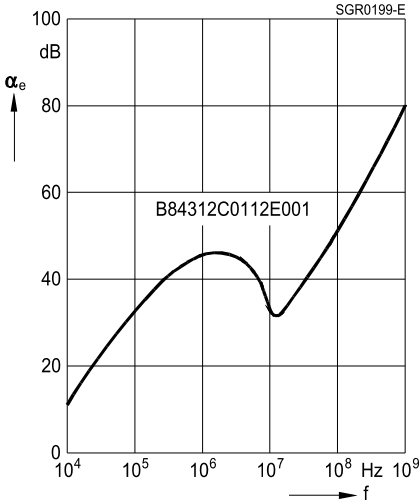
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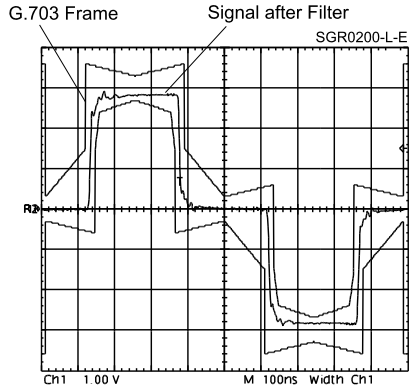
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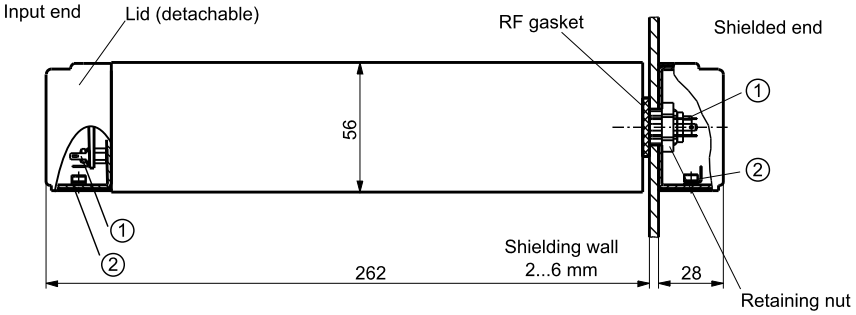
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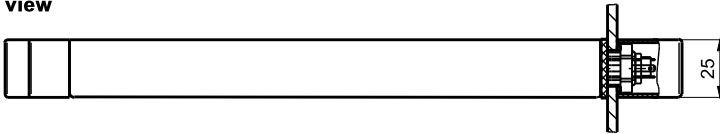
Signal characteristic to CCITT G.703  
for filter B84312C0112E001



**Dimensional drawing**



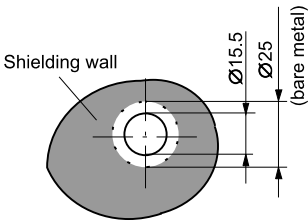
**Plan view**



SGR0201-U-E

- ① Line connection at both ends:  
2 x tab connectors for receptacle 2.8 x 0.5 (in accessory bag)
- ② Strain relief with ground connection for cable diameter 4.5 ... 6 mm

**Hole for installation in shielding wall**



SGR0185-9-E

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