

# S-P Filter

## 380 ... 470 MHz

The S-P filter (Stop-Pass filter) is used to attenuate interfering signals lying extremely close to the operating frequency.

### It can be used:

- in the transmission path to suppress side band noise and to attenuate intermodulation products at the receiving frequencies,
- in the receiving path to attenuate transmitting frequencies,
- as a component for combiners with very narrow frequency spacing.

### Design and construction:

The S-P filter is designed as a high Q temperature-stabilized  $\lambda/4$  coaxial resonator. Using a special temperature-stabilized coupling, high stop band attenuation can be adjusted very close to the pass band frequency.

### Filter characteristics:

Narrow pass band range with low insertion loss, high stop band attenuation at the stop band frequency. Even in case of very narrow spacing between the pass band and the stop band frequency, a high stop band attenuation is achieved, which cannot be achieved using standard band-pass filters of the same size.

### Combination of several S-P filters:

Several S-P filters can be interconnected by using cables with an electrical length of  $\lambda/4$ .

Insertion loss of the filter combination = Sum of insertion loss of the individual filters + cable attenuation of the interconnecting cables (about 0.1 dB per cable). Stop band attenuation of the filter combination = Sum of stop band attenuation of the individual filters + additional stop band attenuation.

If the stop band attenuation of the individual filters exceeds 10 dB, the following approximately applies: additional stop band attenuation =  $(n - 1) \times 5$  dB; n = number of individual filters.

For special applications S-P filters can also be interconnected by using band-pass filters.

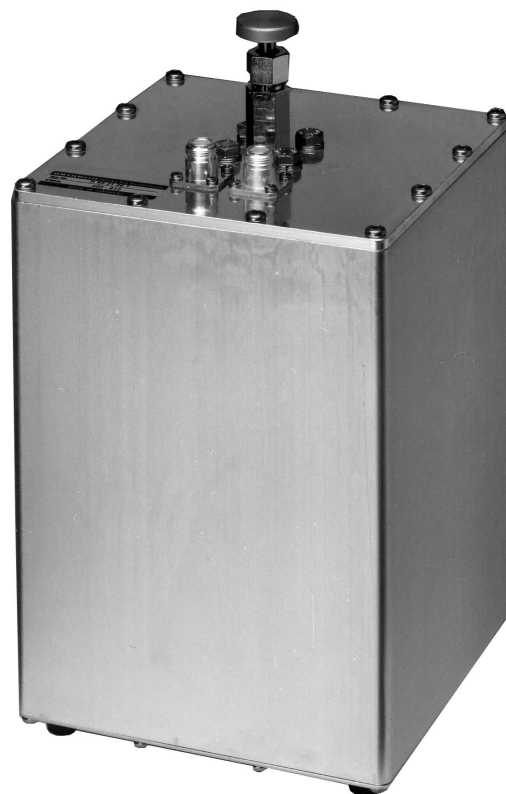
### Tuning:

The S-P filter is tuned to the desired pass band and stop band frequency at the factory. Please specify desired pass band **and** stop band frequency when ordering.

The S-P filter can also be tuned on site using the instructions supplied.

### Customized versions

For special applications S-P filters for even narrower frequency spacing or lower insertion loss are available.



### Technical Data

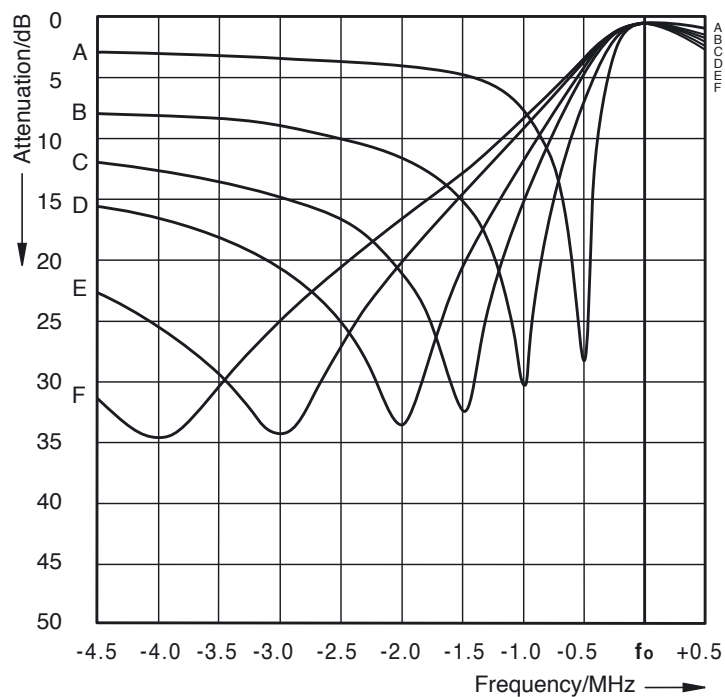
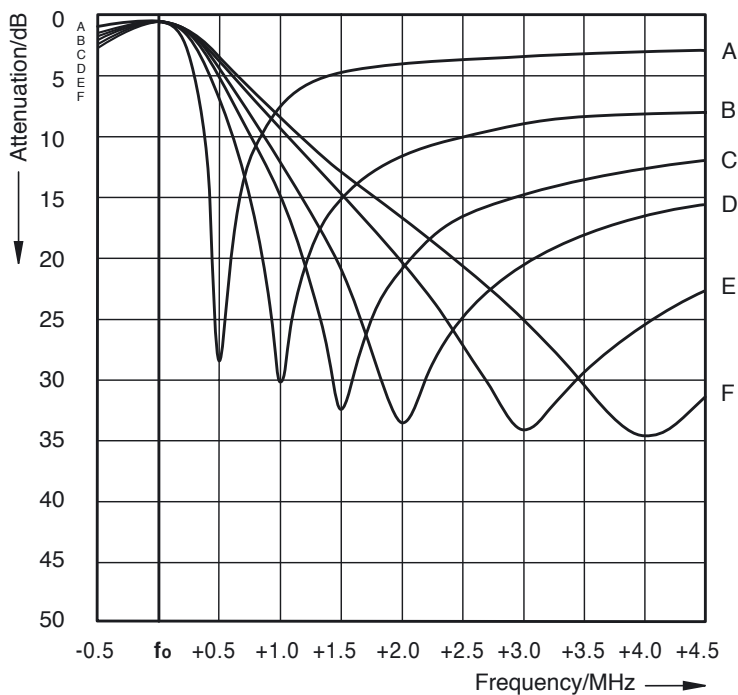
Type No.	K 65 21 26 1
Frequency range	380 ... 470 MHz
Insertion loss	0.5 $\pm$ 0.15 dB
VSWR	< 1.5 (at pass band frequency)
Impedance	50 $\Omega$
Input power	< 200 W
Temperature range	-20 ... +60 °C
Effect of temperature	< 1.2 kHz / °C
Connectors	N female
Material	Outer conductor: Aluminium Inner conductor: Brass, silver-plated
Installation	Free-standing or wall mounted
Supplied hardware	S-P filter with 2 mounting angles and 2 connecting pieces
Weight	5 kg
Packing size	210 mm x 490 mm x 210 mm
Dimensions (w x h x d)	190 mm x max. 350 mm x 190 mm (with tuning rod)

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### Typical attenuation curves

Tuning examples:



Curve	Frequency spacing pass band frequency / stop band frequency
A	0.5 MHz
B	1.0 MHz
C	1.5 MHz
D	2.0 MHz
E	3.0 MHz
F	4.0 MHz