1. General

The filter is symmetrical, i.e. input and output are exchangeable with each other. But the external coupling coil has to be connected to pin 3 in any case.

The filter can be driven balanced only.

To get a balanced signal for test measurements with the network analyzer we use two wideband 1:1 transformers at each port:
SMT 4, vendor NEOSID, PN 88 8529 10

The calibration for the plots was made at the 50 Ohm ports. Thus, the measured characteristics include the losses of the two transformers (about 0.7 dB each).

The termination impedances are : **580 Ω || -0.72 pF**

This impedance is equal for the input and the output. It has to be realized at the point were the filter is mounted. To match this impedance to the impedance of the system a matching circuit is required.

2. Theoretical matching

For the matching of termination impedances to 50 Ohm there can be used two different matching circuits:

50 Ohm test circuit 1

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Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

Vectron International, Inc.
267 Lowell Road
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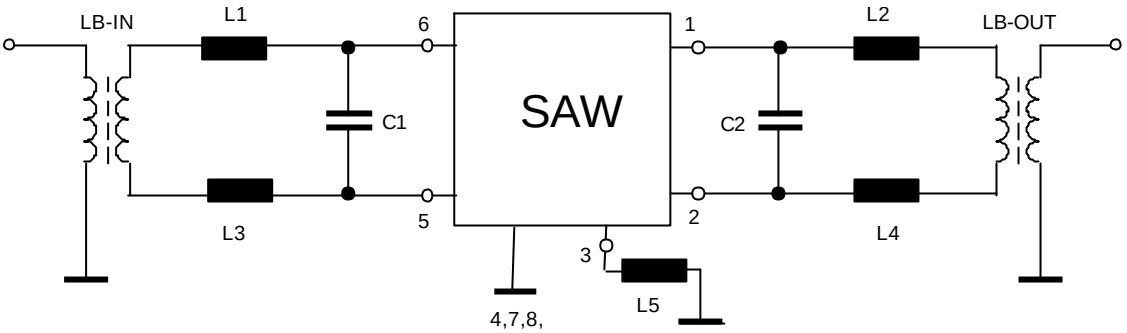
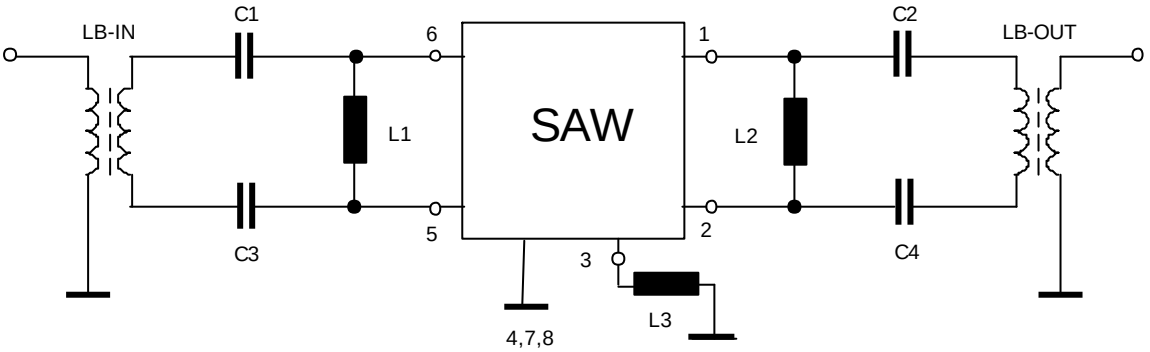
E-Mail: vti@vtinh.com



L1 = L2 =L3 = L4 = 32.39 nH
C1 = C2 = 1.51 pF
L5 = 47 nH

50 Ohm test circuit 2



C1 = C2 = C3 = C4 = 4.88 pF
L1 = L2 = 53.60 nH
L5 = 47 nH

3. Matching on PCB

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The theoretical matching was done without consideration of parasitics. The elements which have to be used on the PCB are slightly different from the stated above.

For example: PCB with 50 Ω test circuit 1

L1 = 33 nH
L2 = L3 = 39 nH
L4 = 47 nH
C1 = 0.5 pF
C2 can be left
L5 = 56 nH

If requested we can supply with such a PCB and the measured S-parameters.

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