

**VI TELEFILTER****Filter specification****TFS 152B****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:*		
Input:	600 Ω    -1 pF	
Output:	600 Ω    -1 pF	

**Characteristics**

## Remark:

The reference level for the relative attenuation  $a_{rel}$  of the TFS 152B is the maximum attenuation in the pass band. The maximum attenuation in the pass band is defined as the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed at 152,775 MHz without any tolerance or limit. The values of relative attenuation  $a_{rel}$  are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

<b>Data</b>		<b>typ. value</b>	<b>tolerance / limit</b>
<b>Insertion loss</b> (reference level)	$a_e$	-	max. 5 dB
<b>Nominal frequency</b>	$f_N$ ***	152,775 MHz	max. ± 10 kHz
<b>Passband</b>		-	$f_N$ ± 10 kHz
<b>Relative attenuation</b> $f_N$ + 910 kHz	$a_{rel}$	65 dB	min. 60 dB
<b>Operating temperature range</b>	OTR	-	- 10 °C ... + 50 °C
<b>Storage temperature range</b>		-	- 40 °C ... + 85 °C
<b>Frequency inversion temperature</b>		15 °C	-
<b>Temperature coefficient of frequency</b>	$TC_f$ **	- 0,036 ppm/K <sup>2</sup>	-

\*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

\*\*)  $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$ .

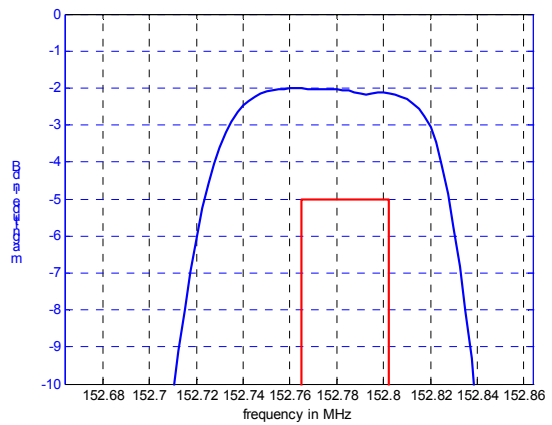
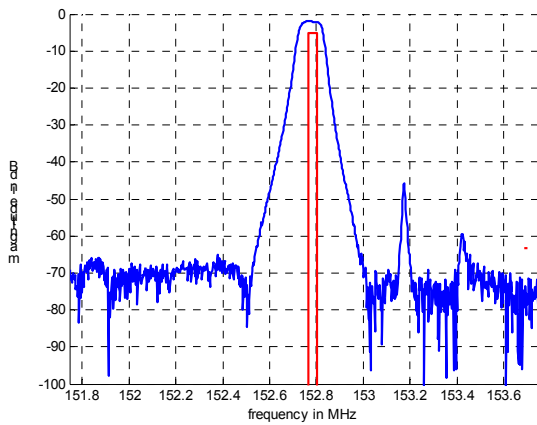
\*\*\*) at room temperature, temperature coefficient needed to be considered in addition in the operating temperature range

**Generated:****Checked / Approved:**

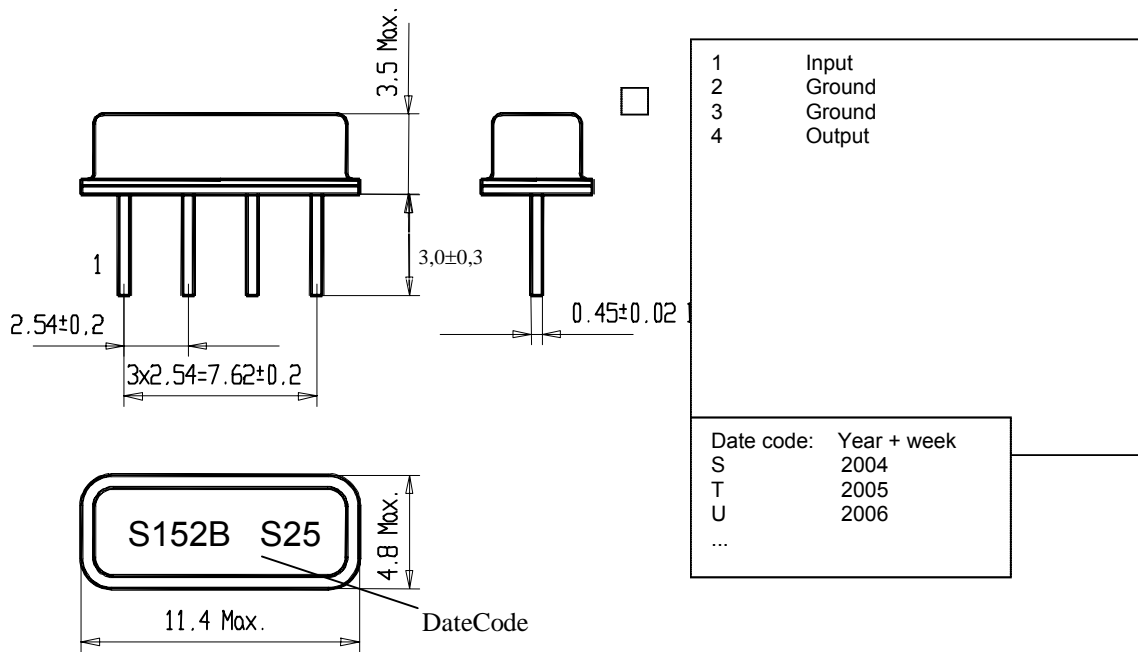
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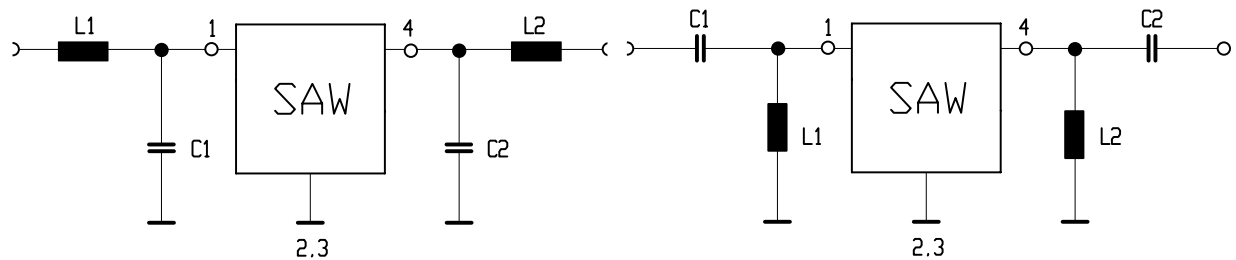
**Filter characteristic**



**Construction and pin connection**  
(All dimensions in mm)



**50 Ω Test circuit**



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**Stability Characteristics**

After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 18 ms, half sine wave, 3 shocks each plane;  
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans;  
DIN IEC 68 T2 - 6
3. Damp heat:  
(cycle) 25 °C to 55°C / 95% r.H. / 10 cycles  
DIN IEC 68 - 2 – 30 Db
4. Resistance to  
solder heat (reflow): max. 2 times reflow process;  
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

**Air reflow temperature conditions**

1st and 2nd air reflow profile

<b>Name:</b>	pre-heating periods	main-heating periods	peak temperature
<b>Temperature:</b>	150 °C - 170 °C	over 200 °C	255 °C ± 5 °C
<b>Time:</b>	60 sec. - 90 sec.	20 sec. - 25 sec.	

**Air reflow temperature profile**

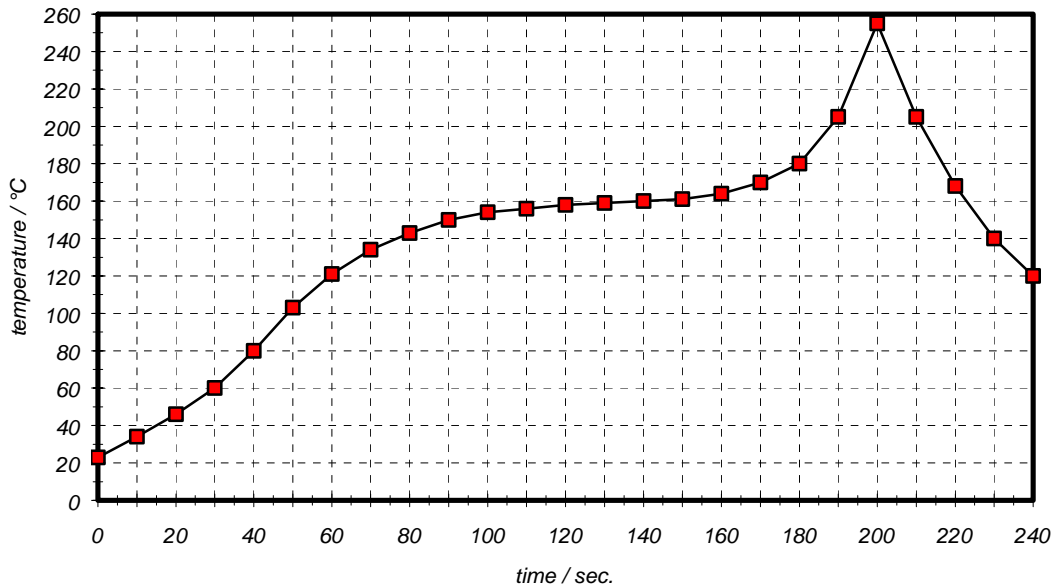


Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

time / sec.	temperature / °C	time / sec.	temperature / °C
0	23	140	160
10	34	150	161
20	46	160	164
30	60	170	170
40	80	180	180
50	103	190	205
60	121	195	230
70	134	200	255
80	143	205	230
90	150	210	205
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120

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**VI TELEFILTER****Filter specification****TFS 152B****5/5****History**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	Generation of Development Specification	M.Springfeldt	03.05.2004
1.1	Change from development specification to filter specification. Remove typical value for nominal frequency. Correct pinning. Add filter characteristic. Add frequency inversion temperature.	Dr. Wall	17.06.2004
1.2	add centre frequency tolerance	Steiner	05.07.2004

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