VI TELEFILTER **Filter Specification** **TFS 150F - 1/3**

1. Measurement condition

Ambient temperature T_A:	23 °C		
Input power level:	0 dBm.		
Terminating impedances at f_C:	for input:	313 Ω	- 11,74 pF.
	for output:	2620 Ω	- 4,2 pF.

2. Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the **TFS 150F2** is the minimum of the pass band attenuation a_{min}. The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e. The reference frequence f_C is the arithmetic mean value of the upper and lower frequencies at the **32 dB** filter attenuation level relative to the insertion loss a_e. The temperature coefficient of frequency Tc_f is valid both for the reference frequency f_C and the frequency response of the filter in the operating temperature range.

Data	typ. value		tolerance / limit	
Insertion loss (Reference level) a_e	29	dB	max. 35	dB
Centre frequency f_C at ambient temperature T_A (f_{CAT})	150	MHz	150,0±0,05	MHz
Pass band at ambient temperature T_A:			f_C-4,80 MHz.....f_C+4,80	MHz
Amplitude ripple in pass band (p-p): f_C ... f_C ± 4,80 MHz	0,5	dB	max. 0,8	dB
Bandwidth at ambient temperature**:**				
0,8 dB - band width	9,93	MHz	min. 9,6	MHz
1,0 dB - band width	10,010	MHz		
2 dB - band width	10,066	MHz	min. 10,0	MHz
3 dB - band width	10,137	MHz		
25 dB - band width	10,653	MHz		
32 dB - band width	10,730	MHz	max. 10,8	MHz
Relative attenuation a_{rel}				
f_C f_C ± 4,80 MHz	-		max. 0,8	dB
f_C ± 4,80 MHz ..... f_C ± 4,975 MHz	-		max. 2	dB
f_C ± 4,975 MHz ..... f_C ± 5,0 MHz	-		max. 3	dB
f_C ± 5,4 MHz ..... f_C ± 8,75 MHz	34....50	dB	min. 32...45	dB
In the frequency range f_C ± 5,4 MHz ... f_C ± 8,75 MHz the type of the LIMIT LINE is a SLOPING LINE (SL).				
f_C ± 8,75 MHz ..... f_C ± 48,75 MHz	55...70	dB	min 45	dB
f_C ± 48,75 MHz ..... f_C ± 98,75 MHz	65...70	dB		
Group delay (mean value in pass band):	2,875	µs	max 5	µs
Group delay ripple in pass band (p-p):	50...70	ns	max 120	ns
Deviation from linear phase in pass band (p-p):	2,6 ° (r.m.s. 0,5°)			
Triple transit attenuation compared to main signal	66	dB		
Crosstalk	52...56	dB		
Frequency inversion temperature (T_o)	10° C			
Temperature coefficient of frequency (Tc_f)	-0,054	ppm/K²		
Frequency deviation of f_C over temperature: *)	Δf_C(Hz) = Tc_f(ppm/K) x (T - T_o)² x f_{To} (MHz)			
Operating temperature range	- 25 °C ... + 75 °C			
Storage temperature range	- 40 °C ... + 85 °C			
Input power level			max. + 10	dBm.

***)** f_{To} is reference frequence f_C at frequency inversion temperature (T_o)

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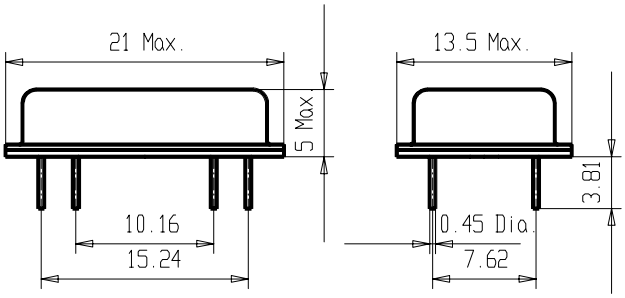
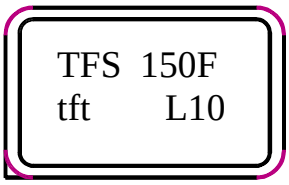
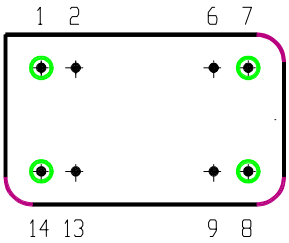
3. Package

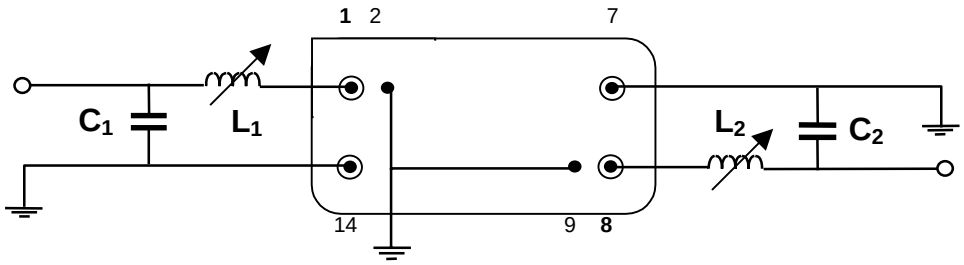






Pin **1**	**Input**
Pin 14	Input RF Return
Pin **8**	**Output**
Pin 7	Output RF Return
Pin 2,9	Pakage Ground

4. 50 Ω matching network:



Remark: L_1 , L_2 have to be adjusted (refer to Application Note TFS 150F).

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5. Air reflow temperature conditions

1st and 2nd air reflow profile

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

Air reflow profile

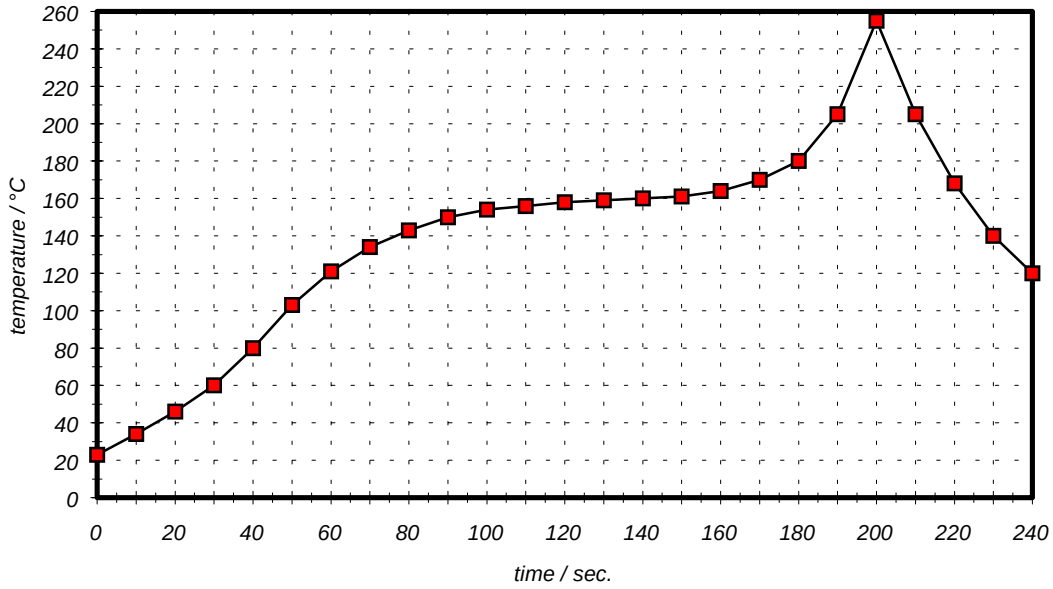

Table for temperature vs. time during the air reflow process

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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