

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 frequency 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 T_{Cf} 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): $f_C \dots f_C \pm 4,80$ 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	$f_C \pm 4,80$ MHz	-
$f_C \pm 4,80$ MHz	$f_C \pm 4,975$ MHz	max. 0,8 dB
$f_C \pm 4,975$ MHz	$f_C \pm 5,0$ MHz	max. 2 dB
$f_C \pm 5,4$ MHz	$f_C \pm 8,75$ MHz	max. 3 dB
In the frequency range $f_C \pm 5,4$ MHz ... $f_C \pm 8,75$ MHz the type of the LIMIT LINE is a SLOPING LINE (SL).	34....50 dB	min. 32...45 dB
$f_C \pm 8,75$ MHz	$f_C \pm 48,75$ MHz	55...70 dB
$f_C \pm 48,75$ MHz	$f_C \pm 98,75$ MHz	min 45 dB
Group delay (mean value in pass band):	2,875 μ s	max 5 μ s
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 (T_{Cf})	-0,054 ppm/K ²	
Frequency deviation of f_C over temperature: *	$\Delta f_C(\text{Hz}) = T_{Cf}(\text{ppm/K}) \times (T - T_o)^2 \times f_{T_o}(\text{MHz})$	
Operating temperature range	- 25 °C ... + 75 °C	
Storage temperature range	- 40 °C ... + 85 °C	
Input power level		max. + 10 dBm.

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

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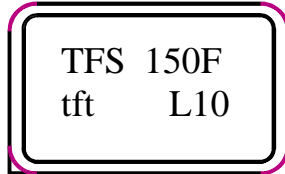
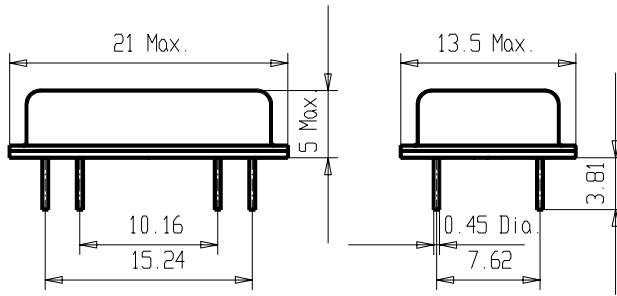
Checked/Approved: _____ Dr. Bert Wall

VI TELEFILTER
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-52 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

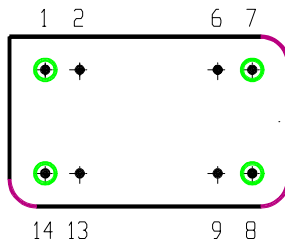
Vectron International, Inc.
 267 Lowell Road
 Hudson, NH 03051 / USA
 Tel: (603) 598-0070 Fax: (603) 598-0075
 E-Mail: vti@vtinh.com

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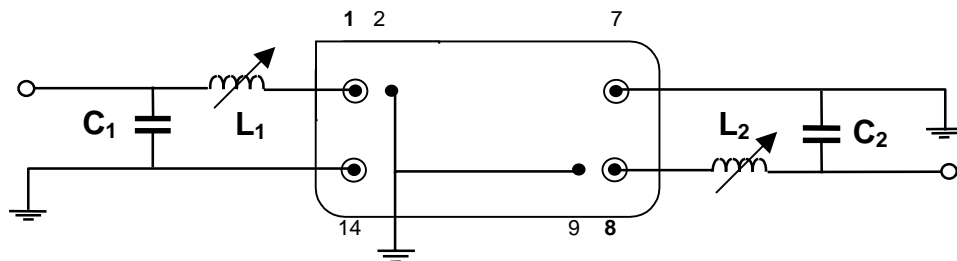
3. Package



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



4. 50 Ω matching network:



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

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

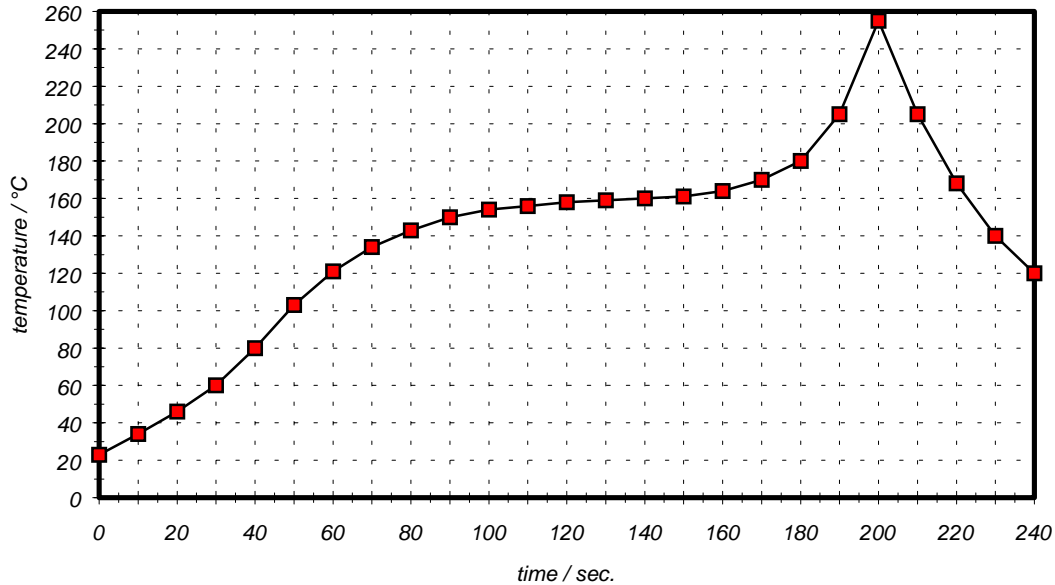


Table for temperature vs. time during the air reflow process

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