

**VI TELEFILTER****Filter specification****TFS 120 C****1/4**

<b>1. Measurement condition</b>	<b>Package, pin connection and 50 <math>\Omega</math> matching network</b>	(see sheet 2.)
Ambient temperature $T_A$ :	23 °C	
Input power level:	0 dBm	
Typical terminating impedances in $f_N$ :	for input: 1270 $\Omega$   -11,7 pF. for output: 4330 $\Omega$   -2,9 pF.	

**2. Characteristics**

Remark:

Reference level for the relative attenuation  $a_{rel}$  of the **TFS 120C** 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 nominal frequency  $f_N$  is fixed at **120,0 MHz** without tolerance or limit. The reference frequency  $f_c$  is the arithmetic mean value of the upper and lower frequencies at the **40 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
<b>Insertion loss</b> (Reference level) $a_e$	27 $\pm$ 0,5 dB	max 33 dB
<b>Nominal frequency</b> $f_N$	-	120,0 MHz
<b>Centre frequency</b> $f_c$ at ambient temperature ( $f_{CAT}$ )	120,01 MHz	-
<b>Pass band</b>		$f_N - 4,5$ MHz ... $f_N + 4,5$ MHz
<b>Amplitude ripple (p-p):</b> $f_N \dots f_N \pm 4,45$ MHz	0,6 dB	
<b>Amplitude ripple (p-p):</b> $f_N \dots f_N \pm 4,50$ MHz	-	max 3,0 dB
<b>Bandwidth</b> at ambient temperature :		
1,0 dB - band width	8,98 MHz	
1,5 dB - band width	9,07 MHz	
3 dB - band width	9,15 MHz	
40 dB - band width	9,90 MHz	
<b>Relative attenuation</b> $a_{rel}$		
$f_N$	$f_N \pm 4,5$ MHz	- max 3 dB
$f_N \pm 5$ MHz	$f_N \pm 25$ MHz	42...70 dB min 40 dB
$f_N - 120$ MHz	$f_N - 25$ MHz	70 dB
$f_N + 25$ MHz	$f_N + 300$ MHz	70 dB
<b>Group delay</b>	3,03 $\mu$ s	max 6 $\mu$ s
<b>Group delay ripple in pass band (p-p):</b>	120 ns	max 400 ns
<b>Triple transit attenuation compared to main signal</b>	60 dB	
<b>Crosstalk</b>	55...67 dB	
<b>Frequency inversion temperature (<math>T_o</math>)</b>	-5 °C	
<b>Temperature coefficient of frequency (<math>T_{cf}</math>)</b>	-0,036 ppm/K <sup>2</sup>	-
<b>Frequency deviation of <math>f_c</math> over temperature T : *)</b>	$\Delta f_c(\text{Hz}) = T_{cf}(\text{ppm/K}) \times (T - T_o)^2 \times f_{T_o}(\text{MHz})$	
<b>Operating temperature range</b>	-20 °C ... + 75 °C	
<b>Storage temperature range</b>	- 40 °C ... + 85 °C	
<b>Input power level</b>	-	max. + 10 dBm
<b>Permissible DC voltage</b> $V_{DC}$		12 V
<b>Permissible DC voltage</b> $V_{pp}$		10 V

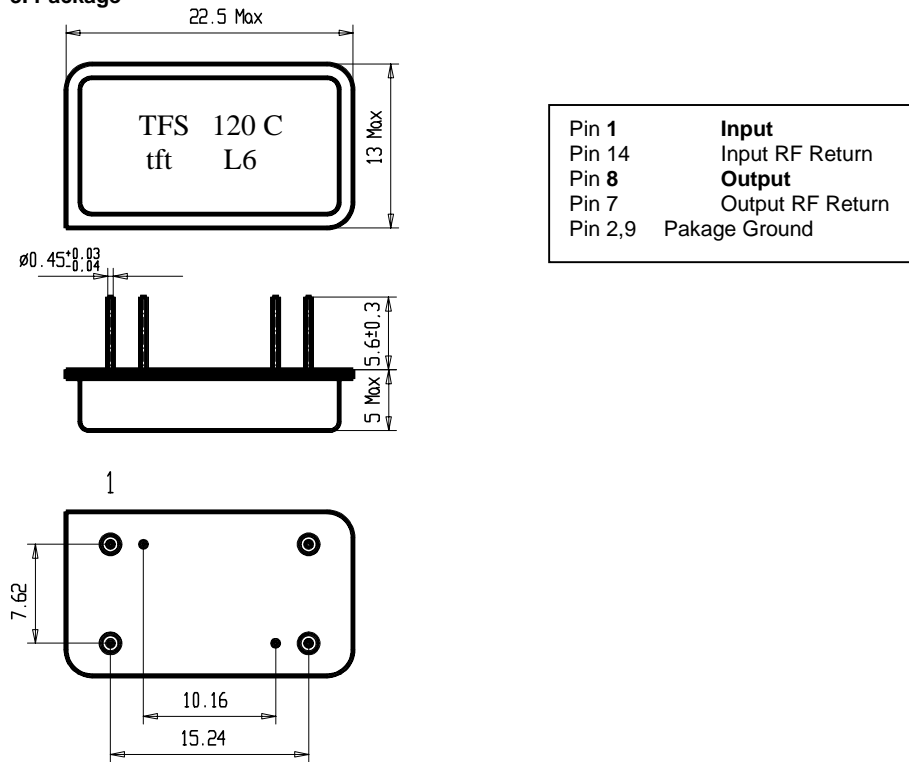
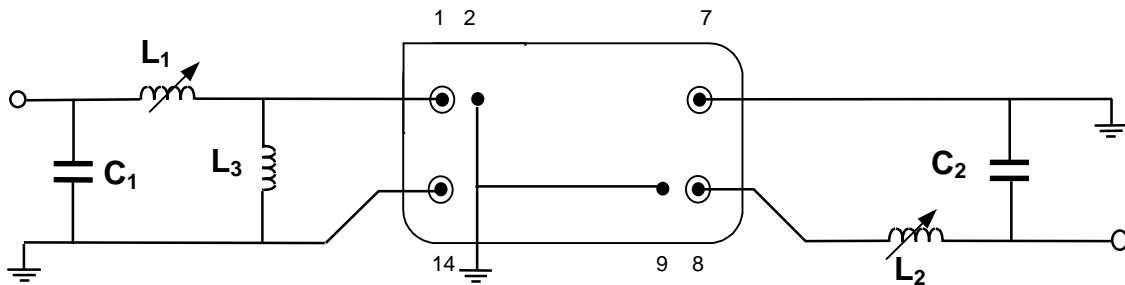
\*)  $f_{T_o}$  is reference frequency  $f_c$  at frequency inversion temperature ( $T_o$ )Generated: Wadim P. DunzowChecked/Approved: Dr. Bert Wall

**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

4. 50  $\Omega$  matching network:

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**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.	

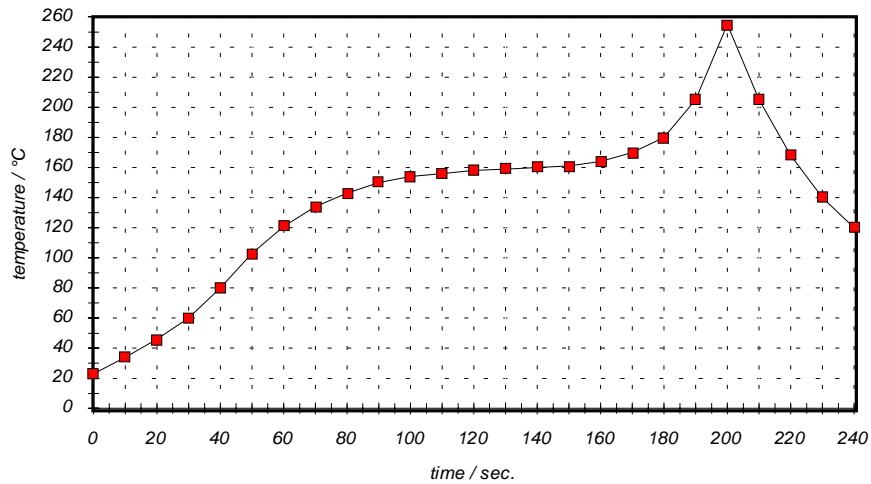
**Chip-mount air reflow profile**

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