

**VI TELEFILTER****Filter specification****TFS 70 G - Page 1 / 3****Measurement condition**

Ambient temperature: 23 °C  
 Input power level: 0 dBm  
 Source impedance: 50 Ω and test adapter  
 Load impedance: 50 Ω and test adapter

**Characteristics****Remark:**

Reference level for the relative attenuation  $a_{rel}$  of the TFS 70 G 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 centre frequency  $f_o$  is the arithmetic mean value of the upper and lower frequencies at the 3dB filter attenuation level relative to the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed on 70,00 MHz without tolerance. The given values for the relative attenuation  $a_{rel}$  and for the group delay ripple have to be reached at the frequencies given below also if the centre frequency  $f_o$  is shifted due to the temperature coefficient of frequency  $TC_f$  in the operating temperature range and due to a production tolerance for the centre frequency  $f_o$ .

<b>D a t a</b>		<b>typ. value</b>		<b>tolerance / limit</b>	
<b>Insertion loss</b> (Reference level)	$a_e$			22	dB
<b>Nominal frequency</b>	$f_N$	-		70,0	MHz
<b>Centre frequency</b>	$f_o$	70,0	MHz		
<b>Pass band</b>		-		$f_N - 100 \text{ kHz} \dots f_N + 100 \text{ kHz}$	
<b>Relative attenuation</b>	$a_{rel}$				
$f_N \pm 40 \text{ MHz} \dots f_N \pm 57 \text{ MHz}$		-		min. 45	dB
$f_N \pm 83 \text{ MHz} \dots f_N \pm 100 \text{ MHz}$		-		min 45	dB
<b>Group delay</b>	GD				
Absolute delay	$f_N - 65 \text{ MHz} \dots f_N + 75 \text{ MHz}$	2	µs	max	2,15 µs
<b>Temperature coefficient of frequency</b>	$TC_f$ *)	- 72	ppm/K <sup>2</sup>	-	
<b>Frequency inversion temperature</b>	$T_o$	- 5	°C	-	
<b>Operating temperature range</b>				- 20 °C ... + 85 °C	
<b>Storage temperature range</b>				- 40 °C ... + 85 °C	
<b>Permissible DC voltage</b>	$V_{DC}$	-		12	V
<b>Permissible AC voltage</b>	$V_{pp}$	-		10	V

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

**Generated:** \_\_\_\_\_

**Checked / approved:** \_\_\_\_\_

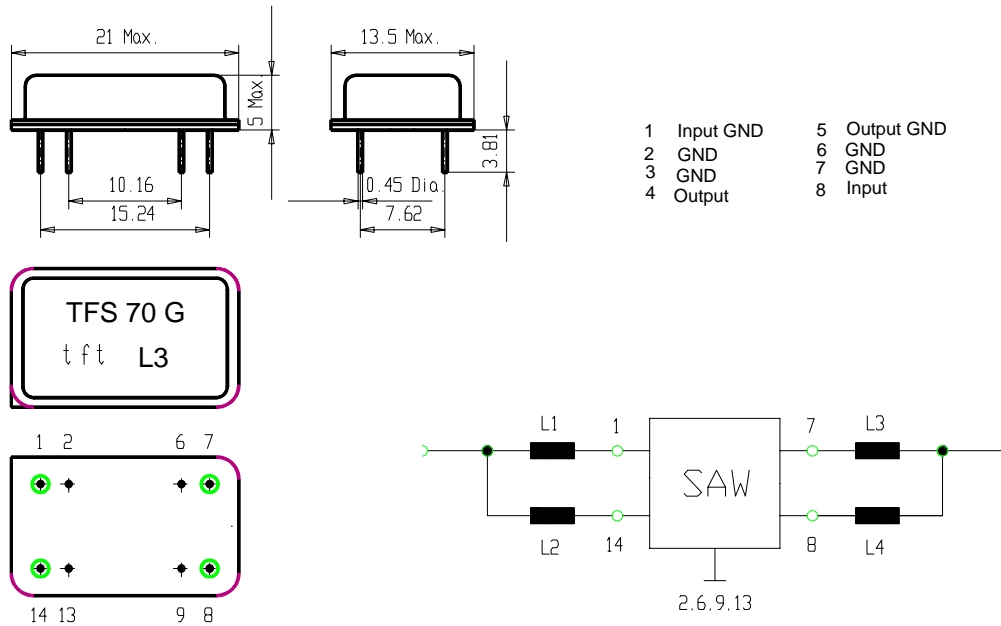
**VI TELEFILTER**  
 Potsdamer Straße 18  
 D 14 513 TELTOW / Germany  
 Tel: (+49) 3328 4784-52 / Fax: (+49) 3328 4784-30  
 E-Mail: tft@telefilter.com

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

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information

### Construction, pin connection and 50 $\Omega$ matching network

(All dimensions in mm)



$$L1 = 495 \text{ nH}$$

$$L3 = 510 \text{ nH}$$

$$L2 = 375 \text{ nH}$$

$$L4 = 395 \text{ nH}$$

### Air reflow temperature conditions

1st and 2nd air reflow profile

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

<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

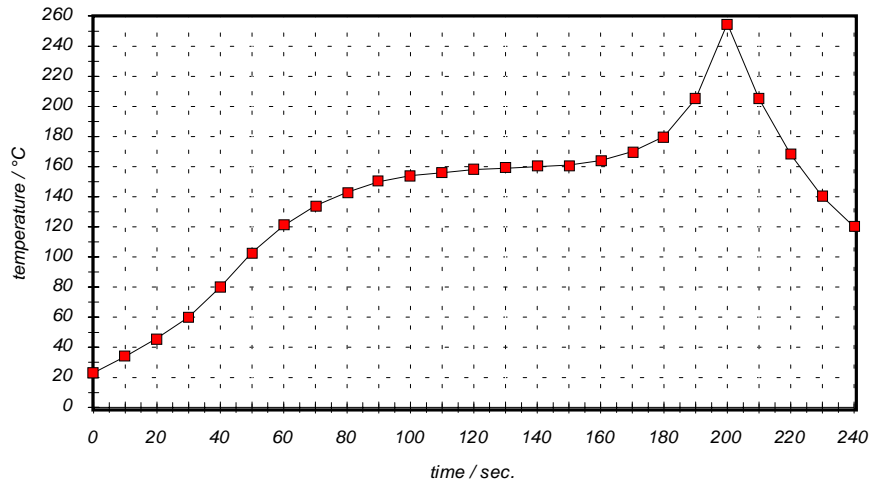


Table for temperature vs. time during the air reflow process

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