

**VI TELEFILTER****Filter specification****TFS 70AH****1/5****Measurement condition**

Ambient temperature  $T_A$ : 25 °C  
 Input power level: 0 dBm  
 Terminating impedances :  
     Input: 50  $\Omega$   
     Output: 50  $\Omega$

**Characteristics**

Remark:

The reference level for the relative attenuation  $a_{rel}$  of the 70AH is the insertion loss. The attenuation at the nominal frequency is defined as the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed at 70 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>D a t a</b>		<b>typ. value</b>		<b>tolerance / limit</b>		
<b>Insertion loss</b>	$a_e$	16	dB	max.	18,5	dB
<b>Insertion loss variation within +25°...+65°C</b>		0,4	dB	max.	1	dB
<b>Nominal frequency at ambient temperature</b>	$f_N$				70	MHz
<b>Passband</b>	PB			$f_N$	$\pm 2$	MHz
<b>Amplitude variation within PB<sup>2</sup></b>		$\pm 0,6$	dB	max.	$\pm 1$	dB
<b>Deviation from linear phase within PB<sup>2</sup></b>		$\pm 6,5$	deg		$\pm 6,5$	deg
<b>Relative attenuation<sup>2</sup></b>	$a_{rel}$					
$f_n - 60$ MHz ... $f_n - 3$ MHz		95	dB	min.	90	dB
$f_n + 3$ MHz ... $f_n + 35$ MHz		95	dB	min.	90	dB
$f_n + 35$ MHz ... $f_n + 140$ MHz		90	dB	min.	60	dB
<b>Phase match<sup>2,3</sup></b>		$\pm 0,25$	deg	max.	$\pm 5$	deg
<b>Gain match<sup>2,3</sup></b>		$\pm 0,15$	dB	max.	$\pm 1$	dB
<b>Change of phase match over temperature<sup>2,4</sup></b>		0,05	°/°C	max.	0,25	°/°C
<b>Change of gain match over temperature<sup>2,4</sup></b>		0,02	dB/°C	max.	0,1	dB/°C
<b>Operating temperature range</b>	OTR	-			0 °C ... + 65°C	
<b>Storage temperature range</b>		-			- 55 °C ... + 85°C	
<b>Temperature coefficient of frequency</b>	$TC_f^1$	-18	ppm/K		-	
<b>VSWR within PB</b>						
Input		1,5:1		max.	2:1	
Output		1,5:1		max.	2:1	

<sup>1</sup>  $\Delta f_C(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_A) \times f_N(\text{MHz})$

<sup>2</sup> For a cascade of TFS 70 AG and TFS 70 AH

<sup>3</sup> Interchannel Performance after removal of Bias Interchannel Performance is defined as the greatest phase or gain difference between cascaded pairs over the specified passband. An offset (bias) may be removed before each measurement

<sup>4</sup> Phase and gain matching over temperature measures the change in the difference between two cascaded pairs as the temperature is varied from +40°C to +50°C

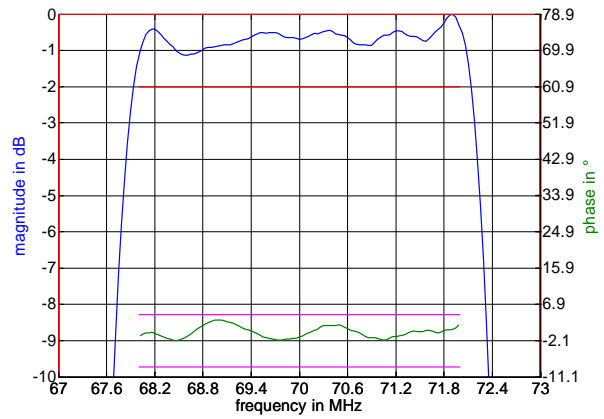
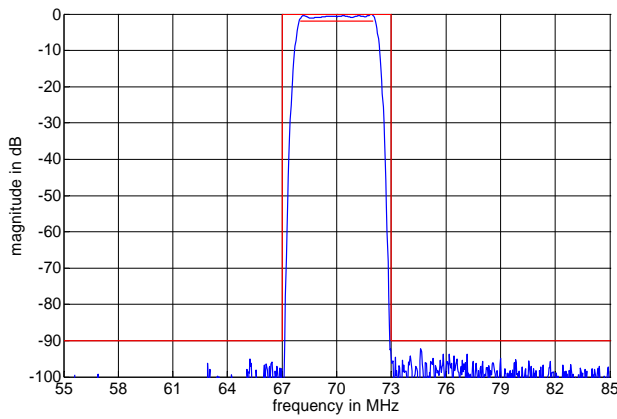
generated:

checked / approved:

Tele Filter GmbH  
 Potsdamer Straße 18  
 D 14 513 TELTOW / Germany  
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30  
 E-Mail: [tft@telefilter.com](mailto:tft@telefilter.com)

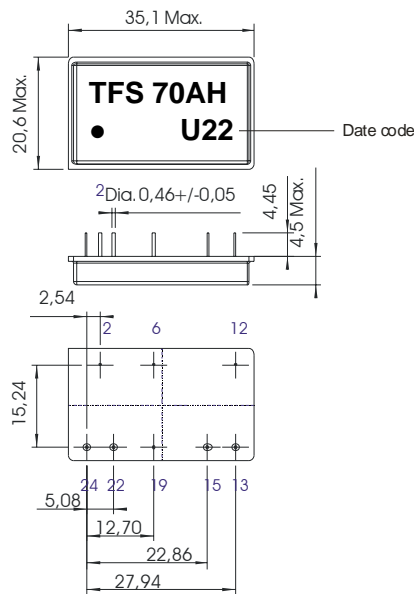
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**Filter characteristic**



**Construction and pin connection**

(All dimensions in mm)

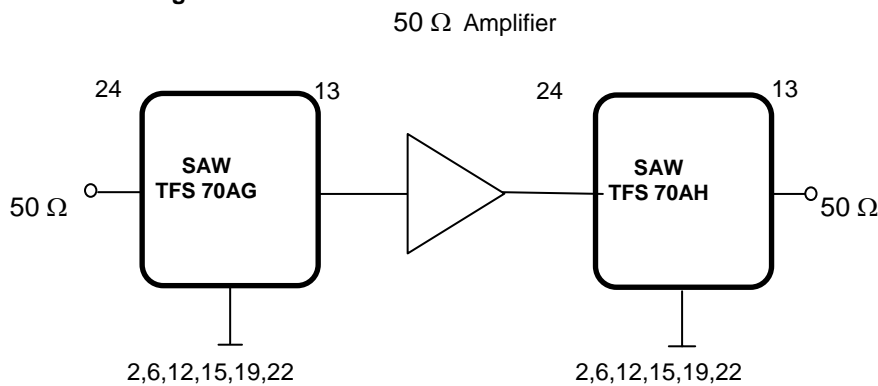


2	Ground
6	Ground
12	Ground
13	Output
15	Output RF Return
19	Ground
22	Input RF Return
24	Input

Date code: Year + week

U	2006
V	2007
W	2008
...	

**50 Ω matching network :**



**Tele Filter GmbH**  
 Potsdamer Straße 18  
 D 14 513 TELTOW / Germany  
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30  
 E-Mail: [tft@telefilter.com](mailto:tft@telefilter.com)

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**Stability Characteristics**

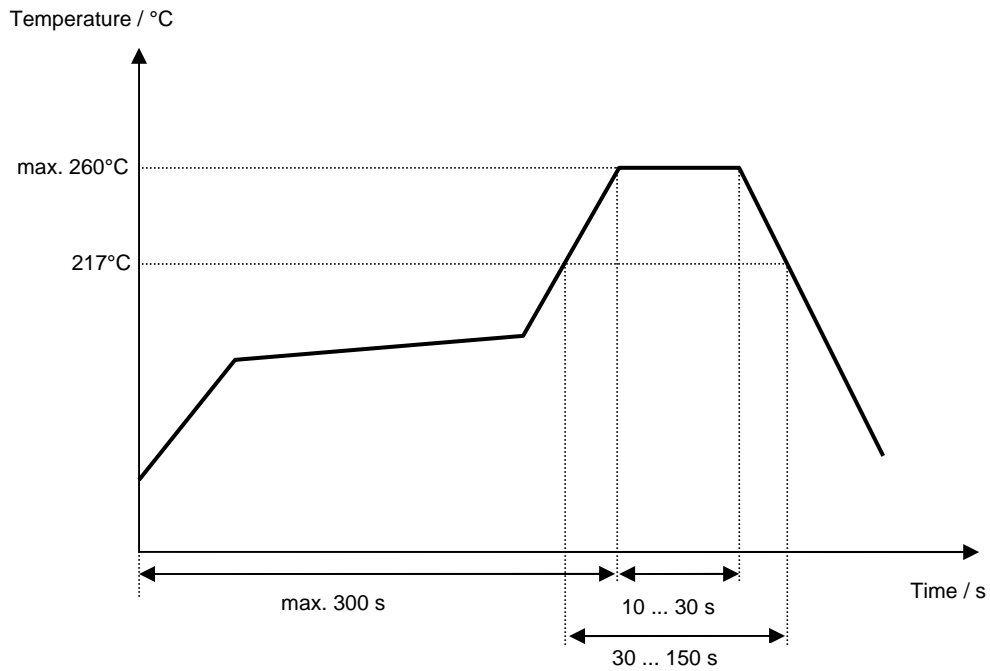
After the following tests the filter shall meet the whole specification:

1. Shock: MIL-STD-202G Method 202; Test condition A
2. Vibration: MIL-STD-202G Method 201A
3. Humidity MIL-STD-202G Method 103B; Test condition A
4. Altitude MIL-STD-202G Method 105C; Test condition A

**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
Average ramp-up rate (30°C to 217°C)	less than 3°C/second
> 100°C	between 300 and 600 seconds
> 150°C	between 240 and 500 seconds
> 217°C	between 30 and 150 seconds
Peak temperature	max. 260°C
Time within 5°C of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50°C)	less than 6°C/second
Time from 30°C to Peak temperature	no greater than 300 seconds

**Chip-mount air reflow profile**



**History**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	- generate development specification	Roizengaft	04.12.2003
1.1	- typical values added - pinning corrected	Pfeiffer	13.05.2004
1.2	- labelling modified	Pfeiffer	02.07.2004
1.3	- air reflow temperature conditions modified - nominal frequency corrected	Pfeiffer	29.05.2006