

VI TELEFILTER**Filter Specification****TFS 70H38 1/5****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 10 dBm
 Terminating impedances : for input: 50 Ω || 0 pF
 for output: 50 Ω || 0 pF

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 70H38 is the insertion loss. The insertion loss a_e is defined as the insertion loss at the nominal frequency f_n . The centre frequency f_c is the arithmetic mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the insertion loss a_e . The temperature coefficient of frequency T_c is valid for both the reference frequency f_c and the frequency response of the filter on the operating temperature range.

Data		typ. value		tolerance/limit		
Insertion loss (Reference level)	a_e	23,5	dB	max.	25,0	dB
Nominal frequency	f_n	-			70,0	MHz
Passband	PB			$f_n \pm$	5,7	MHz
Passband variation	p-p	0,4	dB		0,6	dB
1 dB bandwidth	BW	11,79	MHz	min.	11,6	MHz
3 dB bandwidth	BW	12,14	MHz	min.	12,0	MHz
40 dB bandwidth	BW	15,11	MHz	max.	15,4	MHz
Relative attenuation	a_{rel}					
$f_n - 5,7$ MHz $f_n + 5,7$ MHz				max.	0,6	dB
$f_n \pm 5,7$ MHz $f_n \pm 5,8$ MHz				max.	1	dB
$f_n \pm 5,8$ MHz $f_n \pm 6,0$ MHz		-		max.	3	dB
$f_n \pm 7,7$ MHz $f_n \pm 10,0$ MHz		60	dB	min.	40	dB
$f_n \pm 10,0$ MHz $f_n \pm 20,0$ MHz		65	dB	min.	55	dB
Phase linearity in PB (p-p)		2,8	°	max.	4	°
Group delay variation in PB (p-p)		35	ns	max.	60	ns
Operating temperature				- 20..... + 70		°C
Storage temperature range				- 25..... + 85		°C
Temperature coefficient of frequency (T_c)		-75	ppm/K			
Frequency deviation of f_c over temperature T:		$\Delta f_c(\text{Hz}) = T_c(\text{ppm/K}) \times (T - T_A) \times f_{CAT} (\text{MHz})$				

Generated:**Checked / approved:**

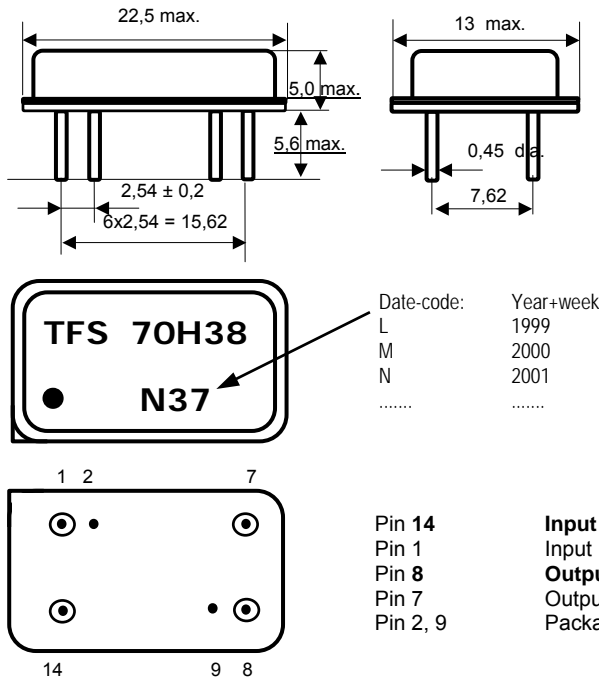
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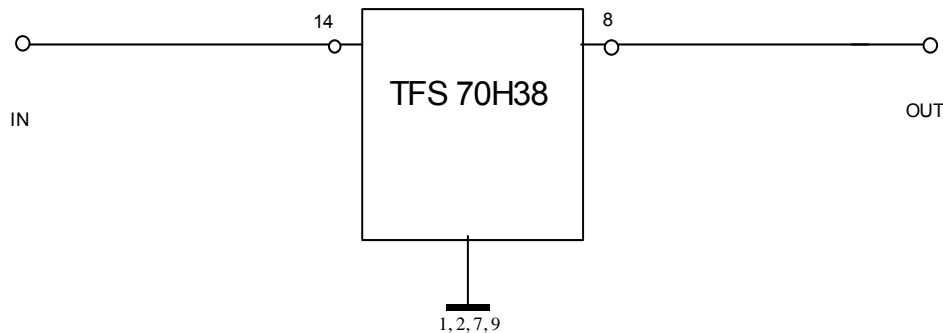
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Construction, pin configuration and 50 Ω - matching network

(All dimensions in inch)



50 Ohm test circuit



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Stability characteristics

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

1. Shock: 500g, 18 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 1,5 mm or 20g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): max. 2 times reflow process;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

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.	

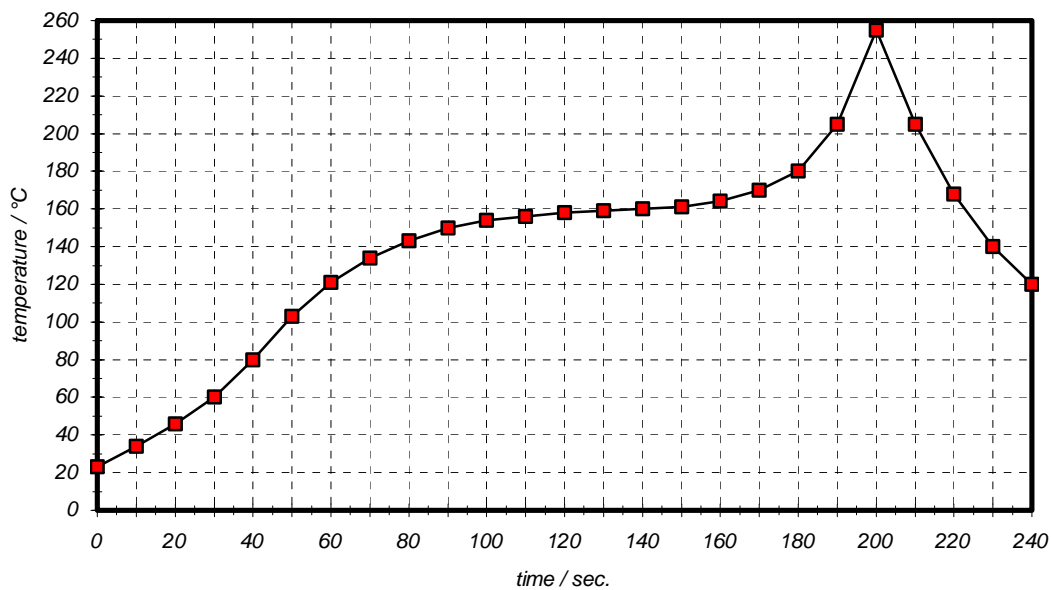
Air reflow profile

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

History

version	reason of changes	name	date
1.0	generate specification	Pfeiffer	15.08.2001
1.1	- terminated impedances added - typical values added - new definition of pass band	Pfeiffer	11.09.2001