VI TELEFILTER — Filter Specification — TFS 70H37 1/5

Measurement condition

Ambient temperature: 23 °C
Input power level: 0 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 70H37 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 Tc_f is valid for both the reference frequency f_c and the frequency response of the filter on the operating temperature range.

D a t a		typ. value		tolerance/limit		
Insertion loss (Reference level)	a_e	23,0	dB	max.	24,0	dB
Centre frequency at ambient temperature	f_c	-		70,0 ±	0,12	MHz
Nominal frequency	f_N	-			70,0	MHz
Passband	PB	-		f_c ±	5,35	MHz
Passband variation	p-p	0,5	dB		0,8	dB
1 dB bandwidth	BW	11,60	MHz	min.	11,0	MHz
3 dB bandwidth	BW	12,05	MHz	min.	12,0	MHz
40 dB bandwidth	BW	13,80	MHz	max.	14,2	MHz
Relative attenuation	a_{rel}					
f_c	f_c ± 5,35 MHz	-		max.	0,8	dB
f_c ± 5,35 MHz	f_c ± 5,5 MHz	-		max.	1	dB
f_c ± 5,5 MHz	f_c ± 6,0 MHz	-		max.	3	dB
f_c ± 7,1 MHz	f_c ± 10,0 MHz	58	dB	min.	40	dB
f_c ± 10,0 MHz	f_c ± 20,0 MHz	60	dB	min.	55	dB
Phase linearity in PB (p-p) °			2,8	° max.	4	
Average group delay in PB		1,95	µs	max.	2,5	µs
Group delay variation in PB (p-p)		40	ns	max.	70	ns
Operating temperature		-		- 20..... + 70		°C
Storage temperature range		-		- 25..... + 85		°C
Temperature coefficient of frequency (Tc_f)		-75	ppm/K		-	
Frequency deviation of f_c over temperature T:		$\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_A) \times f_{CAT}\ (MHz)$				

generated:

checked / approved:

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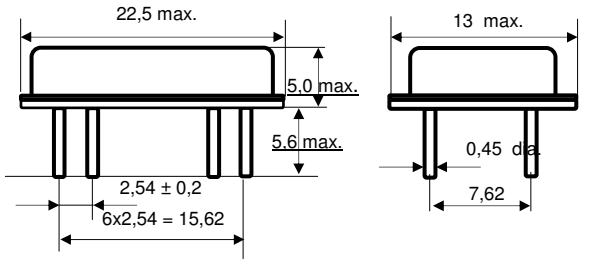
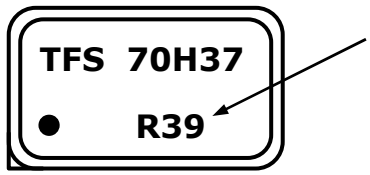
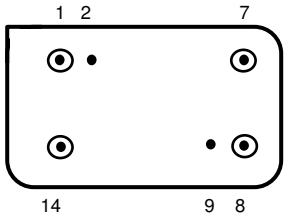
Construction, pin configuration and 50 Ω - matching network

(All dimensions in inch)



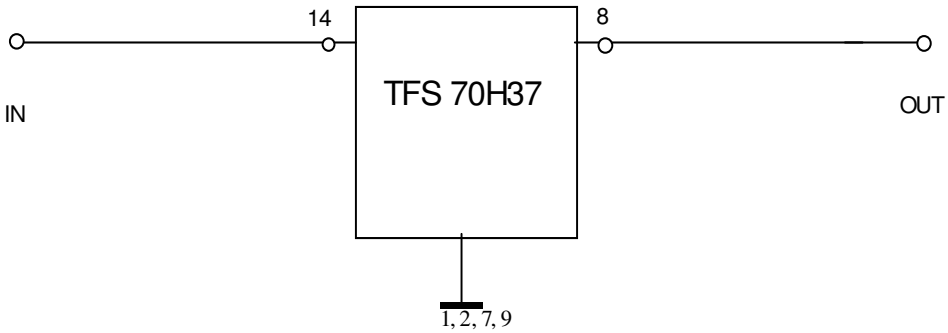


Date-code:	Year+week
N	2001
P	2002
R	2003
.....	.....



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

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, 0,35 mm or 5g 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): reflow possible: twice max.;
   for temperature conditions, please refer to the attached "Air reflow temperature conditions" on page 4;

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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

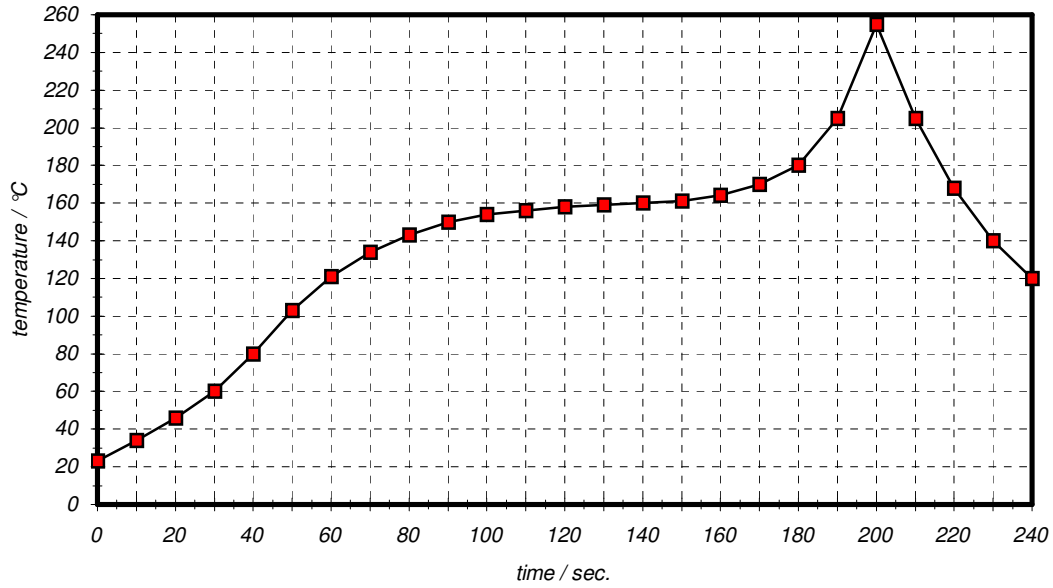

Table for temperature vs. time during the air reflow process

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

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History

version	reason of changes	name	date
1.0	generate specification	Pfeiffer	15.03.2002
1.1	relative attenuation f_C ± 5,35 MHz corrected	Pfeiffer	25.09.2003

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