VI TELEFILTER — Specification — TFS 170 - 1/4

Measurement condition
Ambient temperature: 23 °C
Input power level: 0 dBm

Construction and pin configuration
see page 2

Packing
see page 3

Characteristics

Agreement:
Reference level for the relative attenuation a_{rel} of the TFS 170 is the minimum of the attenuation a_{min}. The minimum of the attenuation a_{min} is defined as insertion loss a_e. Reference frequency f_c is the mean value of the frequencies with a relative attenuation of 3 dB.

D a t a		typ. value		tolerance / limit	
Insertion loss (Reference level)	$a_e = a_{min}$	5,5	dB	max 8	dB
Reference frequency	f_c	170,0	MHz	± 10	kHz
3 dB - band width	BW	185,0	kHz		
3 dB-BW for f_c	169,992 MHz ... 170,010 MHz	185,0	kHz	max ± 5	kHz
3 dB-BW for f_c	<169,992 MHz	185,0	kHz	max ± 3	kHz
3 dB-BW for f_c	<169,991 MHz	185,0	kHz	max ± 1	kHz
Relative attenuation	a_{rel}				
f_c ± 200 kHz ... f_c ± 400 kHz		-		min 19	dB
f_c ± 400 kHz ... f_c ± 600 kHz		-		min 40	dB
f_c + 600 kHz ... f_c +1060 kHz		-		min 45	dB
f_c +1060 kHz ... f_c +1360 kHz		-		min 40	dB
f_c +1360 kHz ... f_c + 20 MHz		-		min 45	dB
f_c - 600 kHz ... f_c - 20 MHz		-		min 45	dB
Group delay	GD	4,5	µs	-	
Group delay distortion	GDD				
f_c ± 65 kHz		-		max 1,0	µs
f_c ± 70 kHz		-		max 1,1	µs
Termination impedance at input		393 Ω // - 6,6 pF		-	
Termination impedance at output		467 Ω // - 5,5 pF		-	
Coupling coil		94	nH	-	
Temperature coefficient of frequency	TC_f ***)**	- 0,032	ppm/K² ***)**	-	
Frequency inversion temperature	To	+ 40	°C	-	
Operating temperature range		- 20 °C ... + 85 °C			
Storage temperature range		- 45 °C ... + 85 °C			

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

generated:

checked / approved:

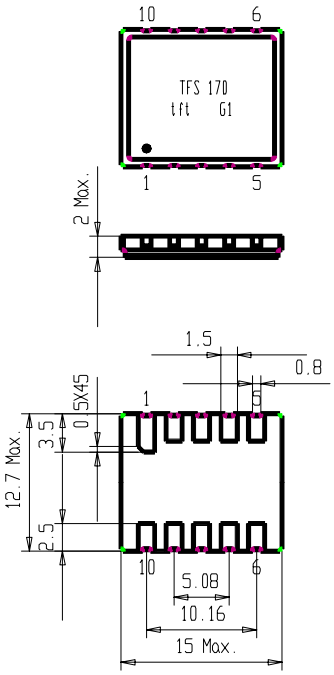
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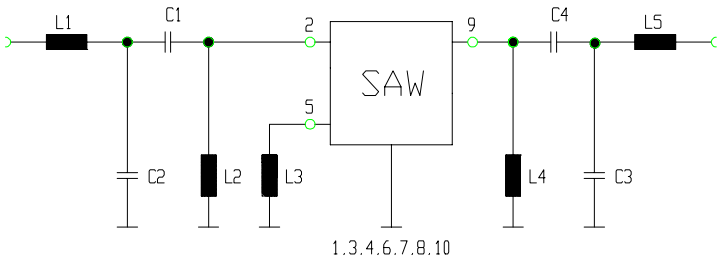
Construction and pin configuration

(All dimensions in mm)



1 Input RF Return
2 Input
3 Ground
4 Input RF Return
5 External Coil
6 Output RF Return
7 Ground
8 Ground
9 Output
10 Output RF Return

50 Ω matching network



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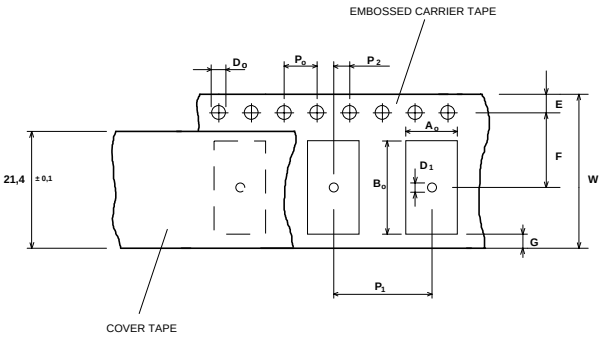
Packing

Tape & Reel: DIN IEC 286 - 3, with exception of value for N and minimum bending radius; tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters per reel: 1000

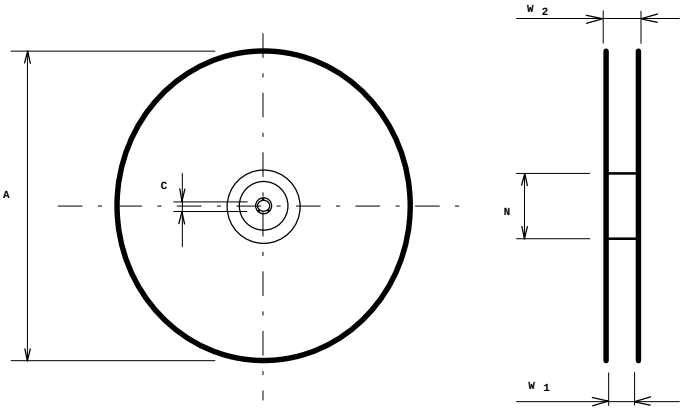
Tape (all dimensions in mm)

W	:	24	± 0,3
Po	:	4	± 0,1
Do	:	1,5	+ 0,5
D1	:	1,5	+ 0,5
E	:	1,75	± 0,1
F	:	11,5	± 0,1
G (min)	:	0,75	
P2	:	2	± 0,1
P1	:	16	± 0,1
D1(min)	:	1,5	
Ao	:	13,0	± 0,2
Bo	:	16,4	± 0,2



Reel (all dimensions in mm):

A	:	330	
W1	:	24,4	+2
W2 (max)	:	30,4	
N (min)	:	>= 90	
C	:	13	± 0,25



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. The marking of the filters is able to read if the view is directed on the upper side of the carrier tape with the sprocket holes on the left side of the tape.

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Air reflow temperature conditions

1st and 2nd air reflow profile (preliminary)

Name:	pre-heating periods	main-heating periods	peak temperature
Temperature:	150 °C - 170 °C	over 200 °C	230 °C ± 5 °C
Time:	60 sec. - 90 sec.	20 sec. - 25 sec.	

Chip-mount air reflow profile

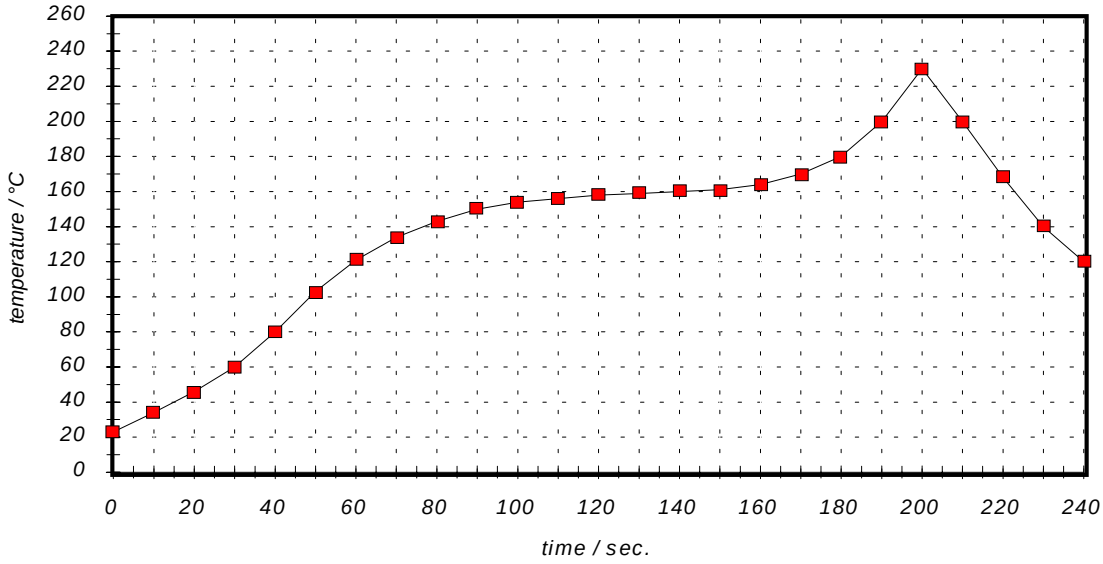


Table for temperature vs. time during the air reflow process

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	200
60	121	195	220
70	134	200	230
80	143	205	220
90	150	210	200
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120

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