

VI TELEFILTER

Filter specification

TFS 315F

Measurement condition

Ambient temperature: 25 °C
 Input power level: 0 dBm
 Terminating impedance: *) input: 380 Ω // -1,9 pF
 output: 420 Ω // -1,8 pF

Characteristics

Remark:
 The nominal frequency f_N is fixed at . The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 315F is the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit	
Insertion loss (reference level)		a_e	10,6 dB	max.	14 dB
			-		-
Nominal frequency		f_N	-		315 MHz
Pass band		PB	-	f_N	± 2,1 MHz
Relative attenuation		a_{rel}			
f_N ...	$f_N \pm 2,1$ MHz		0,7 dB	max.	1 dB
$f_N - 4,6$ MHz	$f_N - 100$ MHz		45 dB	min.	40 dB
$f_N + 4,85$ MHz	$f_N + 100$ MHz		45 dB	min.	40 dB
Group delay ripple in PB			75 ns	max.	200 ns
Input power level			-	max.	10 dBm
Operating temperature range		OTR	-	- 40 °C.... + 85 °C	
Storage temperature range			-	- 40 °C.... + 85 °C	
Frequency inversion temperature			40 °C		-
Temperature coefficient of frequency		TC_f **	-0,04 ppm/K ²		-

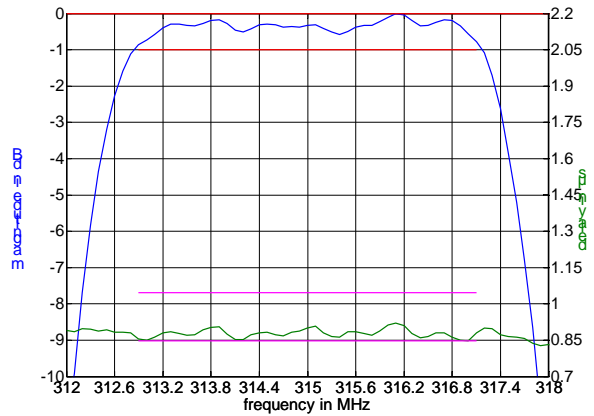
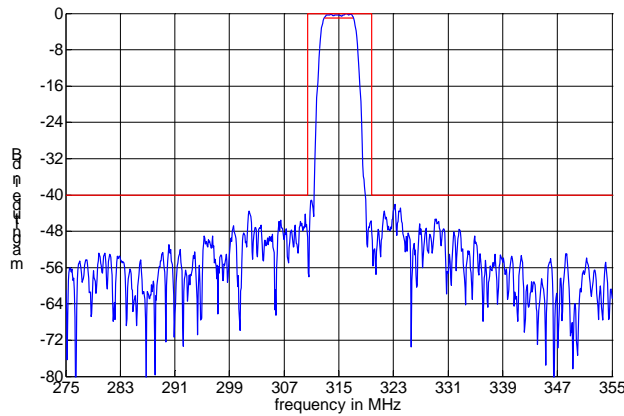
*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

**) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$.

generated: _____

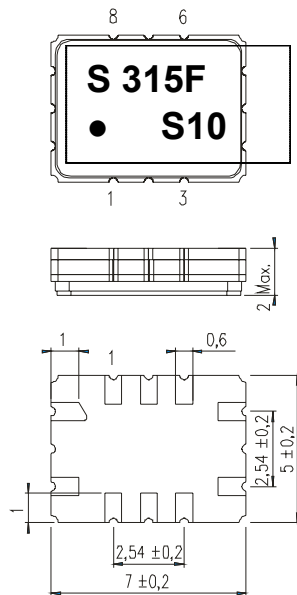
checked / approved: _____

Filter characteristic



Construction and pin connection

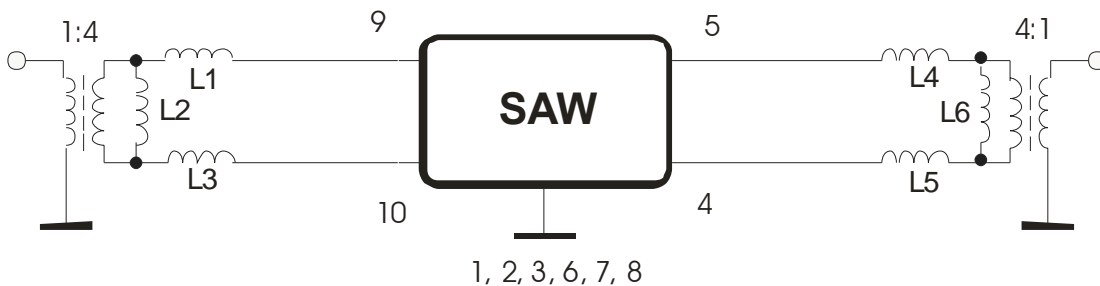
(All dimensions in mm)



1	Ground
2	Ground
3	Ground
4	Output
5	Output
6	Ground
7	Ground
8	Ground
9	Input
10	Input

Date code:	Year + week
S	2004
T	2005
U	2006
...	

50 Ω 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 g 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 refer to the attached "Air reflow temperature conditions" on page 4;

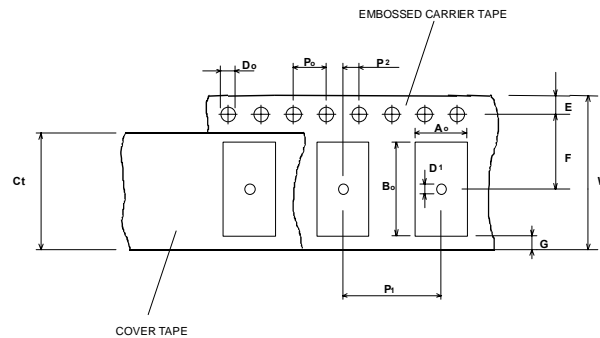
Packing

Tape & Reel: 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 peer reel: 3000
 reel of empty components at start: min. 300 mm
 reel of empty components at start including leader: min. 500 mm
 trailer: min. 300 mm

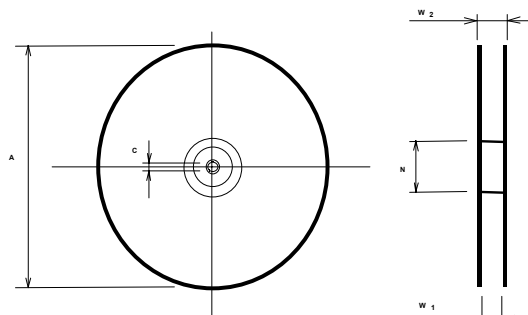
Tape (all dimensions in mm)

- W : 16,00 ± 0,3
- Po : 4,00 ± 0,1
- Do : 1,50 +0,1/-0
- E : 1,75 ± 0,1
- F : 7,50 ± 0,1
- G(min) : 0,60
- P2 : 2,00 ± 0,1
- P1 : 8,00 ± 0,1
- D1(min) : 1,50
- Ao : 5,50 ± 0,1
- Bo : 7,50 ± 0,1
- Ct : 13,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 16,4 +2/-0
- W2(max) : 22,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. Marking of the filters can be read if the upper side of the carrier tape is regarded with the sprocket holes on the right.

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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	Cover 200 °C	255 °C ± 5 °C
Time:		60 sec. - 90 sec.	20 sec. - 25 sec.

Chip-mount air reflow profile

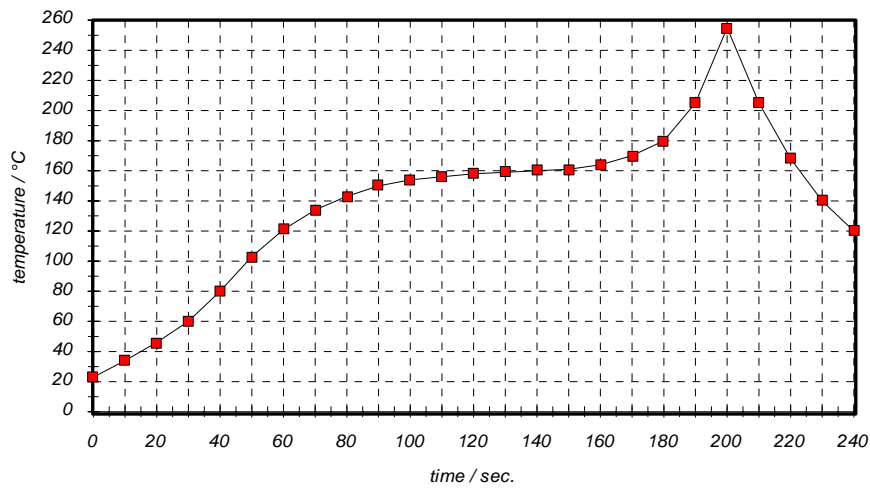


Table for temperature vs. time during the air reflow process

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	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

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VI TELEFILTER**Filter specification****TFS 315F****5/5**

Version	Reason of Changes	Name	Date
1.0	generation of specification	Pfeiffer	11.03.2003
1.1	terminating impedance, matching configuration and typical value added	Pfeiffer	05.03.2004

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