Measurement condition

Ambient temperature: 25 °C
Input power level: 0±2 dBm
Terminating impedance:
Input: 50 Ω || 0 pF
Output: 50 Ω || 0 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS 182 is the minimum of the pass band attenuation a_{min}. The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e. The centre frequency f_c is the arithmetic mean value of the upper and lower frequencies at the 20 dB filter attenuation level relative to the insertion loss a_e. The frequency shift of the filter in the operating temperature range is not included in the production tolerance scheme.

D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)	a_e	23,5 -	dB	max.	28,0	dB
Nominal frequency	f_N	-			182,5	MHz
Centre frequency	f_C	182,5	MHz		-	
Pass band	PB	-		f_N	± 2	MHz
Pass band ripple	p-p	0,2	dB	max.	0,6	dB
Amplitude ripple f_N ±12,5MHz	p-p	0,4	dB	max.	1	dB
Relative attenuation	a_{rel}					
f_N ... f_N ± 2 MHz		0,2	dB	max.	0,6	dB
f_N ± 2 MHz ... f_N ± 12,5 MHz		0,4	dB	max.	1	dB
f_N - 82,50 MHz ... f_N - 45,00 MHz		55	dB	min.	45	dB
f_N - 45,00 MHz ... f_N - 32,50 MHz		55	dB	min.	40	dB
f_N + 32,50 MHz ... f_N + 45,00 MHz		55	dB	min.	30	dB
f_N + 45,00 MHz ... f_N + 82,50 MHz		55	dB	min.	35	dB
Absolute group delay		305	ns	max.	350	ns
Group delay ripple within PB	p-p	5	ns	max.	10	ns
Input power level				max.	+10	dBm
Operating temperature range	OTR	-		-40 °C ... + 85 °C		
Storage temperature range		-		-40 °C ... + 85 °C		
Temperature coefficient of frequency	TC_f *	-80	ppm/K		-	

*) $\Delta f_C(Hz) = TC_f(ppm/K) \times (T - T_o) \times f_{To}$ (MHz).

Generated:

Checked / Approved:

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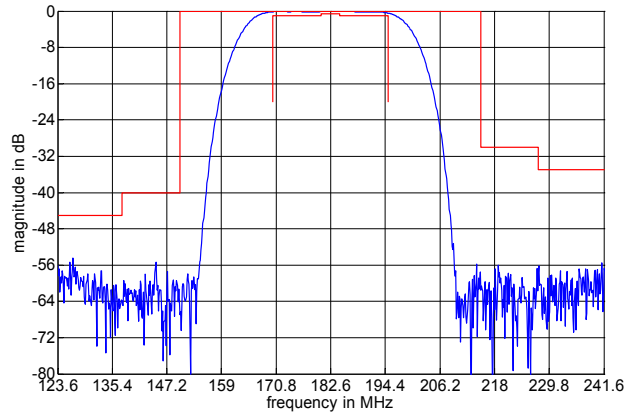
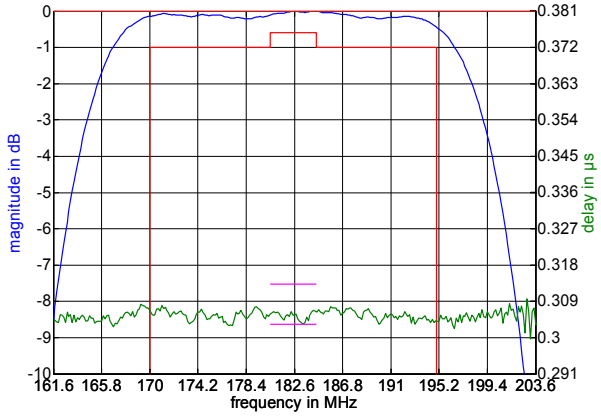
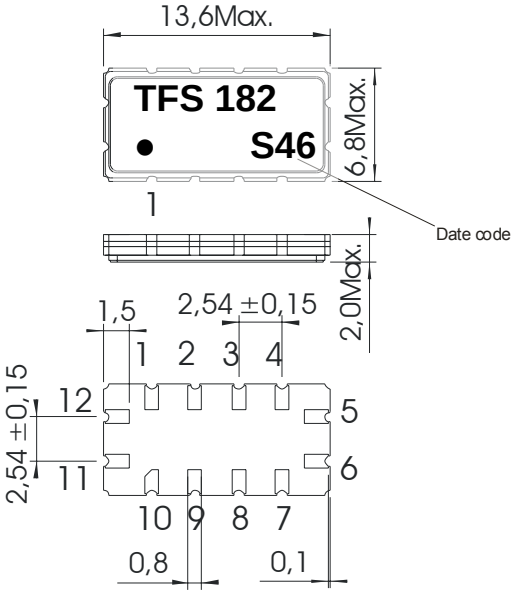
Filter characteristic





Construction and pin connection

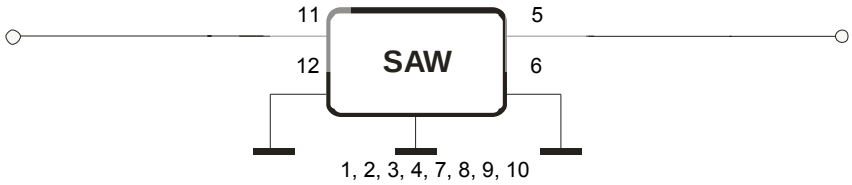
(All dimensions in mm)



1	Ground
2	Ground
3	Ground
4	Ground
5	Output
6	Output RF Return
7	Ground
8	Ground
9	Ground
10	Ground
11	Input
12	Input RF Return

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

50 Ohm Test circuit



Stability characteristics

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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 5 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;

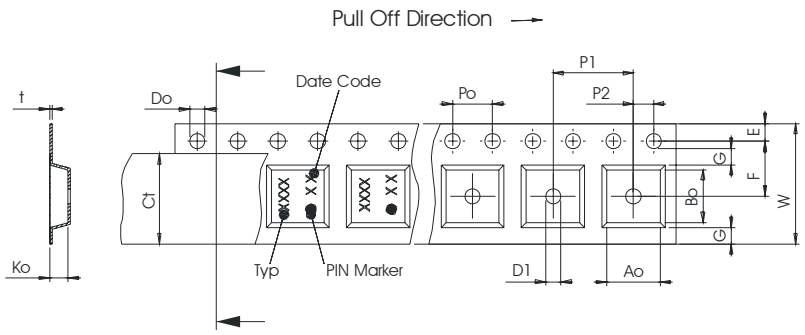
Packing

Tape & Reel: IEC 286 – 3, with exeption 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:	1700
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

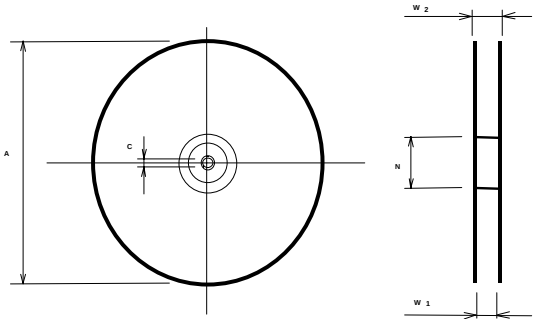
Tape (all dimensions in mm)

W	:	24,00	+0,30/-0,10
Po	:	4,00	± 0,1
Do	:	1,50	+0,1/-0
E	:	1,75	± 0,10
F	:	11,50	± 0,10
G(min)	:	0,60	
P2	:	2,00	± 0,1
P1	:	12,00	± 0,1
D1(min)	:	1,50	
Ao	:	7,10	± 0,10
Bo	:	13,90	± 0,10
Ct	:	21,5	± 0,1



Reel (all dimensions in mm)

A	:	330	
W1	:	24,4	+2/-0
W2(max)	:	30,4	
N(min)	:	60	
C	:	13,0	+0,5/-0,2



The minimum bending radius is 45 mm.

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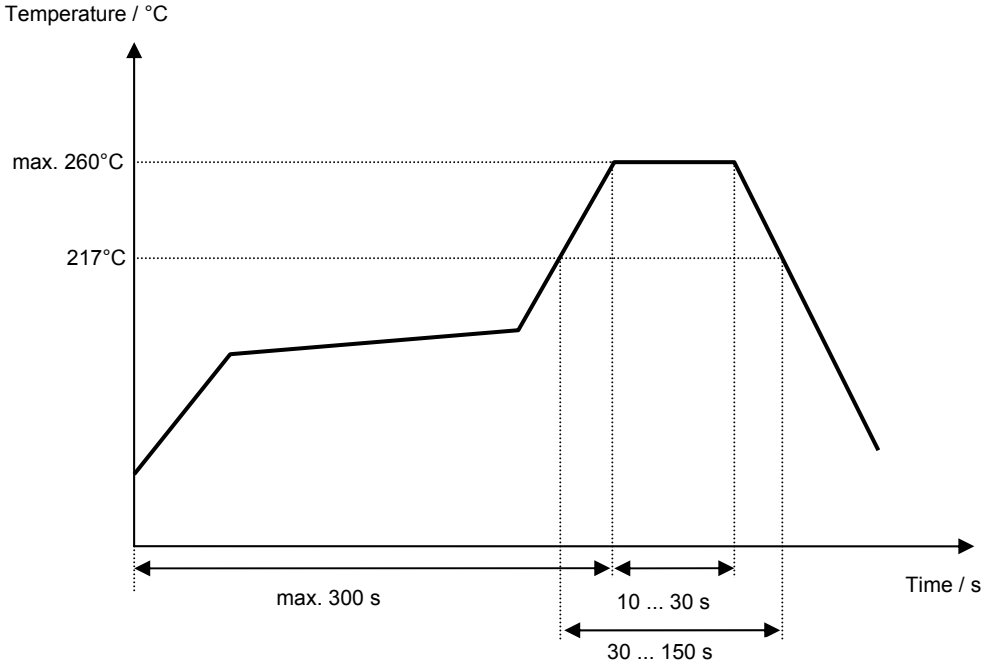
Air reflow temperature conditions

Conditions	Exposure
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



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History

Version	Reason of Changes	Name	Date
1.0	- generated specification according to customer requirement	Strehl	24.08.2004
1.1	- change group delay ripple from max. 5ns to max. 10ns - add absolute group delay max. 350ns - add temperature coefficient of frequency	Strehl	21.09.2004
1.2	- terminating impedance fixed - typical values and filter characteristic added - air reflow temperature conditions modified	Pfeiffer	11.11.2004

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