

VI TELEFILTER**Filter specification****TFS 182****1/5****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.

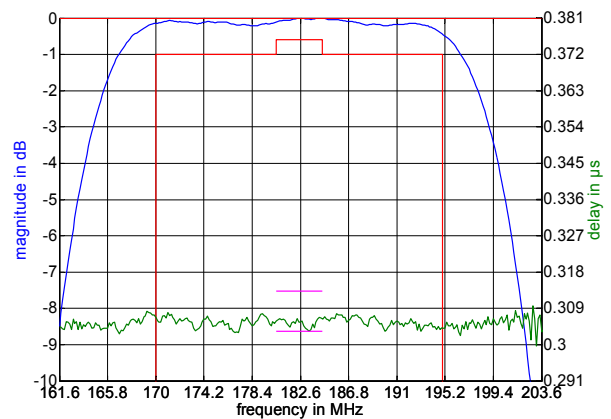
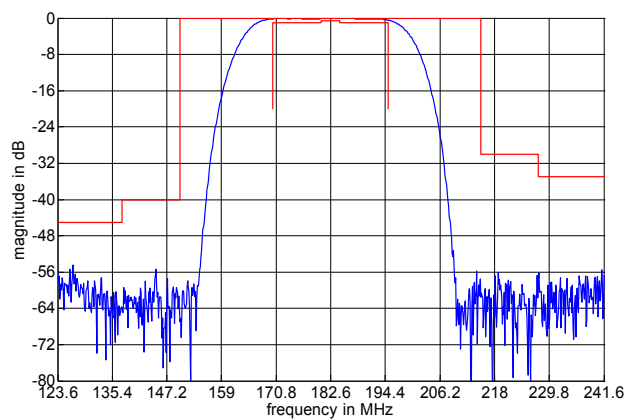
D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)	a_e	23,5	dB	max.	28,0	dB
		-				
Nominal frequency	f_N	-			182,5	MHz
Centre frequency	f_c	182,5	MHz		-	
Pass band	PB	-		f_N	± 2	MHz
Pass band ripple	p-p	0,2	dB	max.	0,6	dB
Amplitude ripple $f_N \pm 12,5$ MHz	p-p	0,4	dB	max.	1	dB
Relative attenuation	a_{rel}					
f_N	$f_N \pm 2$ MHz	0,2	dB	max.	0,6	dB
$f_N \pm 2$ MHz	$f_N \pm 12,5$ 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		-	

*) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_o) \times f_{T0}(\text{MHz})$.

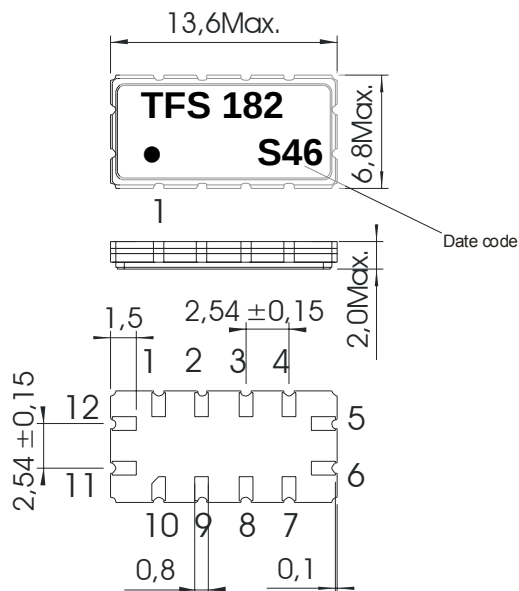
Generated:**Checked / Approved:**

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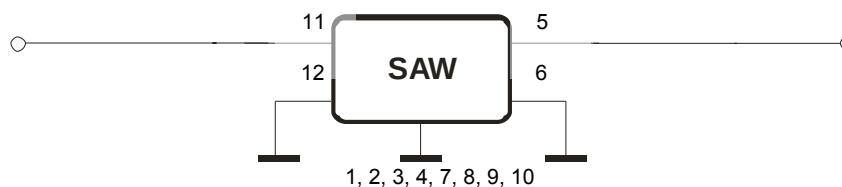
VI TELEFILTER**Filter specification****TFS 182****2/5****Filter characteristic****Construction and pin connection**

(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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VI TELEFILTER**Filter specification****TFS 182****3/5**

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;

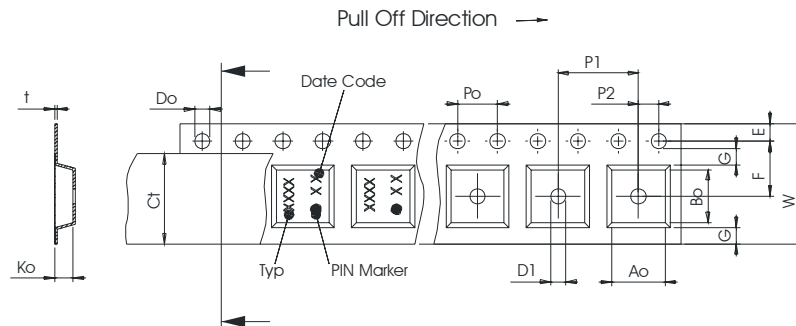
Packing

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;

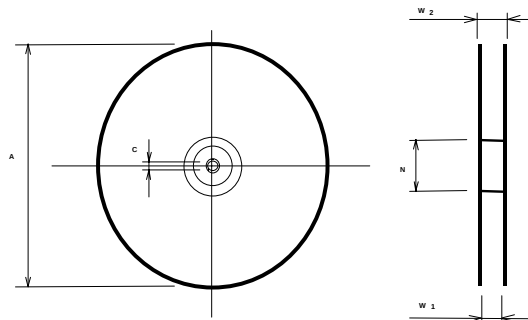
max. pieces of filters peer reel: 1700
reel of empty components at start: min. 300 mm
reel of empty components at start including leader: min. 500 mm
trailer: min. 300 mm

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



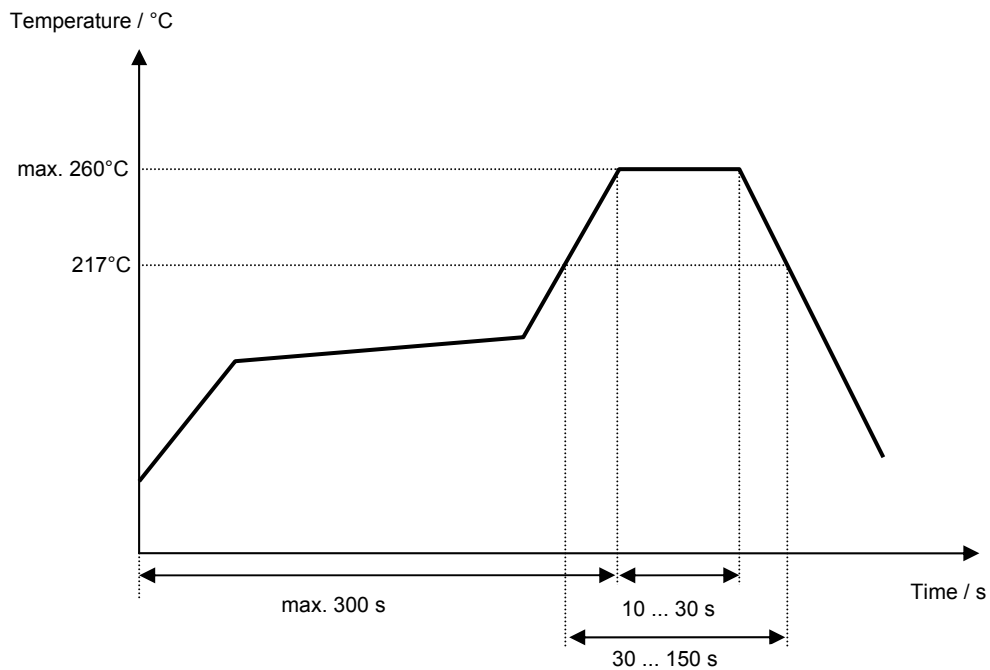
The minimum bending radius is 45 mm.

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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

VI TELEFILTER**Filter specification****TFS 182****5/5****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