Measurement condition

Ambient temperature:	23	℃
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS1774 is the minimum attenuation in the passband. The maximum attenuation in the passband is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 1774.9 MHz without any tolerance or limit. The values of relative attenuation a_{rel} are guaranteed over the whole operating temperature range. The frequency shift of the filter within the operating temperature range is included in the production tolerance scheme.

D a t a		**typ. value**		**tolerance / limit**		
Insertion loss within PB	a_e	2.5	dB	max.	3.0	dB
Nominal frequency	f_N	-			1774.9	MHz
Passband	PB	-		f_N ±	10.0	MHz
Passband variation		0.6	dB	max.	1.0	dB
Relative attenuation	a_{rel}					
10 MHz … 850 MHz		40	dB	min.	20	dB
850 MHz … 900 MHz		40	dB	min.	35	dB
900 MHz … 1350 MHz		40	dB	min.	20	dB
1350 MHz … 1420 MHz		42	dB	min.	40	dB
1420 MHz … 1510 MHz		44	dB	min.	20	dB
1510 MHz … 1710 MHz		33	dB	min.	5	dB
1835 MHz … 1855 MHz		55	dB	min.	5	dB
1855 MHz … 1885 MHz		56	dB	min.	10	dB
1915 MHz … 2690 MHz		38	dB	min.	10	dB
2690 MHz … 6000 MHz		17	dB	min.	10	dB
Absolute group delay within PB		20	ns	max.	100	ns
Group delay ripple within PB		5	ns	max.	40	ns
Return loss within PB		12	dB	min.	10	dB
Input power level within PB	*	-		max.	20	dBm
Operating temperature range	OTR	-			- 40 ℃ ... + 85℃	
Storage temperature range		-			- 40 ℃ ... + 85℃	
Temperature coefficient of frequency	TC_f **	-42	ppm/K			

*) 20dBm continuous input power over life time; 23dBm for duty cycle 1/10 over life time
**) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_o) \times f_{CAT}(MHz)$

Generated:

Checked / Approved:

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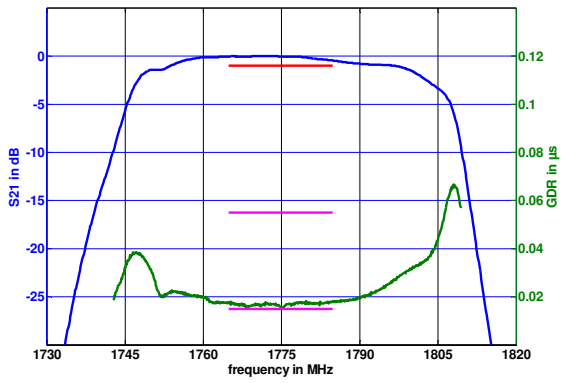
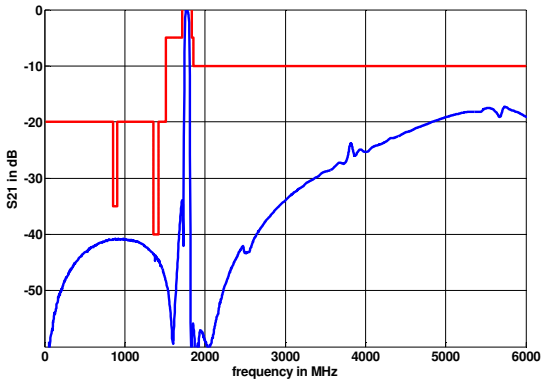
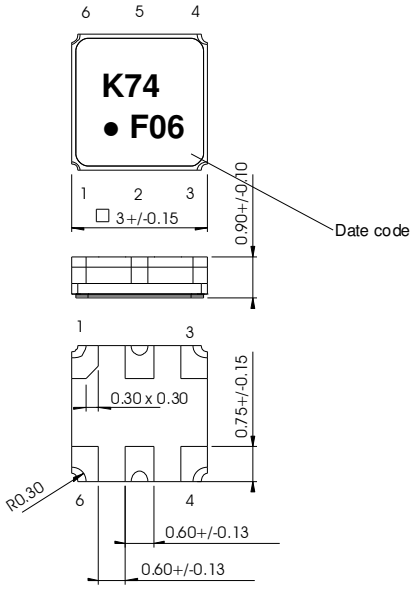
Filter characteristic





Construction and pin connection

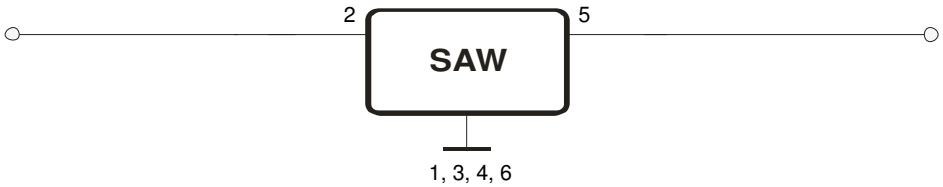
(All dimensions in mm)



1	Ground
2	Input
3	Ground
4	Ground
5	Output
6	Ground

Date code:	Year + week
F	2015
G	2016
H	2017
...	

50 Ω Test circuit



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Stability characteristics, reliability

After the following tests the filter shall meet the whole specification:

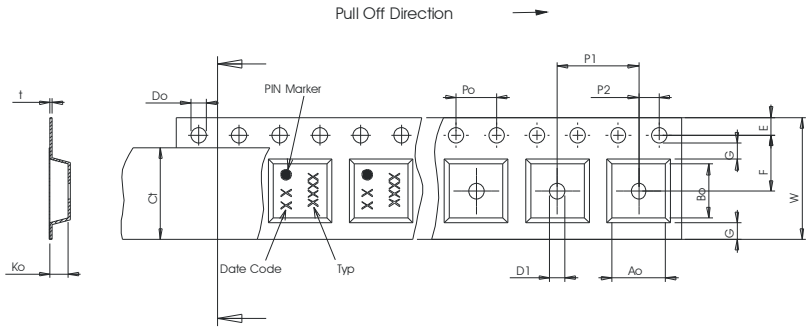
1. Shock:	500g, 1 ms, half sine wave, 3 shocks each plane; DIN IEC 68 T2 - 27
2. Vibration:	10 Hz to 500 Hz, 0,35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 68 T2 - 6
3. Change of temperature:	-55 °C to 125°C / 15 min. each / 100 cycles DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow):	reflow possible: three times max.; for temperature conditions, see page 4: "Air reflow temperature conditions"

This filter is RoHS compliant (2011/65/EU)

Packing

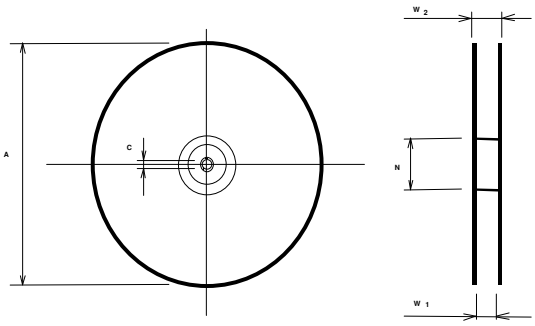
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters per 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	:	8,00 ± 0,3
Po	:	4,00 ± 0,1
Do	:	1,50 +0,1/-0
E	:	1,75 ± 0,1
F	:	3,50 ± 0,05
G(min)	:	0,75
P2	:	2,00 ± 0,05
P1	:	4,00 ± 0,1
D1(min)	:	1,50
Ao	:	3,25 ± 0,1
Bo	:	3,25 ± 0,1
Ct	:	5,3 ± 0,1



Reel (all dimensions in mm)

A	:	330 or 180
W1	:	8,4 +1,5/-0
W2(max)	:	14,4
N(min)	:	60
C	:	13,0 ± 0,2

The minimum bending radius is 45 mm.

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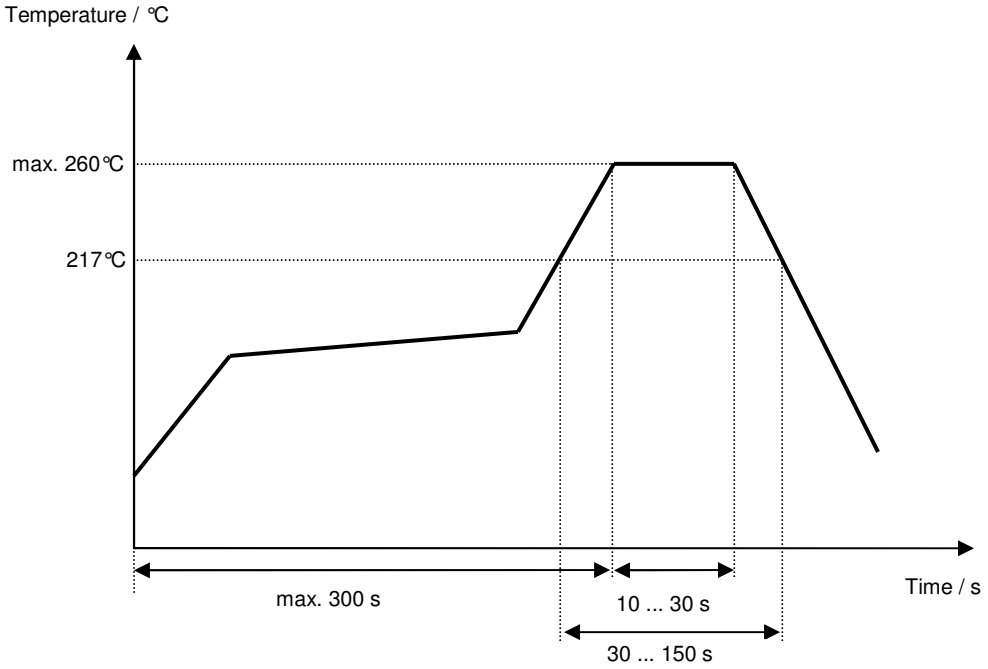
Air reflow temperature conditions

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	- Generation of development specification	A. Molke	13.10.2014
1.1	- Change from development spec to filter spec - Typical values added - Filter characteristic added	A. Molke	05.02.2015

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