

VI TELEFILTER

Filter specification

TFS 1747

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	43 Ω - 1 pF	
Output:	43 Ω - 1 pF	
Source Impedance:	50	Ω
Load Impedance:	50	Ω

Characteristics

Remark:

The maximum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1747,5 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value		tolerance / limit	
Insertion loss		a_e	2 dB	max.	2,5 dB
Nominal frequency		f_N	-		1747,5 MHz
Passband		PB	-	f_N ±	37,5 MHz
Absolute attenuation		a_{abs}			
1 MHz ...	350 MHz		48 dB	min.	34 dB
350 MHz ...	1678 MHz		15 dB	min.	14 dB
1819 MHz ...	4000 MHz		18 dB	min.	14 dB
Input power level within PB			-	max.	17 dBm
Return loss within PB			10,5 dB	max.	8 dB
Operating temperature range		OTR	-	- 40 °C ... + 85°C	
Storage temperature range			-	- 40 °C ... + 85°C	
Temperature coefficient of frequency		TC_f *	-46 ppm/K		-

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

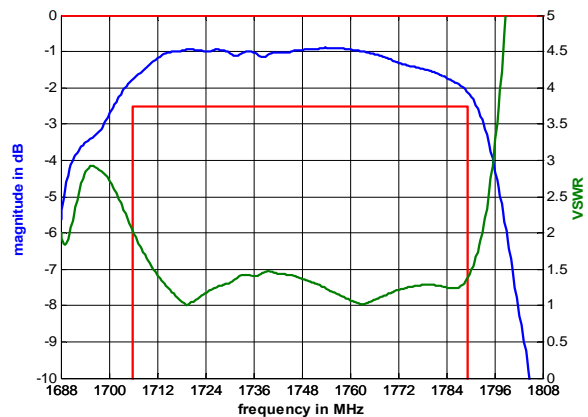
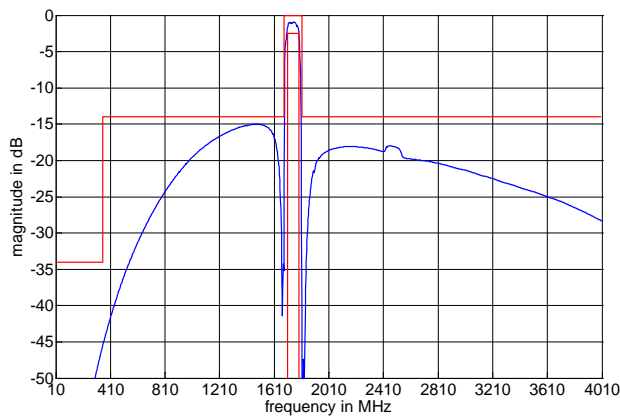
Generated:

Checked / Approved:

Filter characteristic

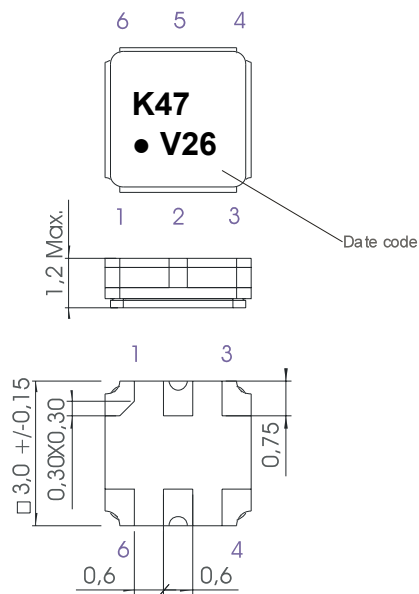
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Construction and pin connection

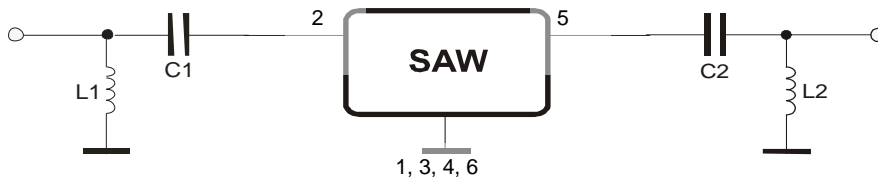
(All dimensions in mm)



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

Date code: Year + week
 V 2007
 W 2008
 X 2009
 ...

50 Ω Test circuit



Stability characteristics, reliability

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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 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: three times max.;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

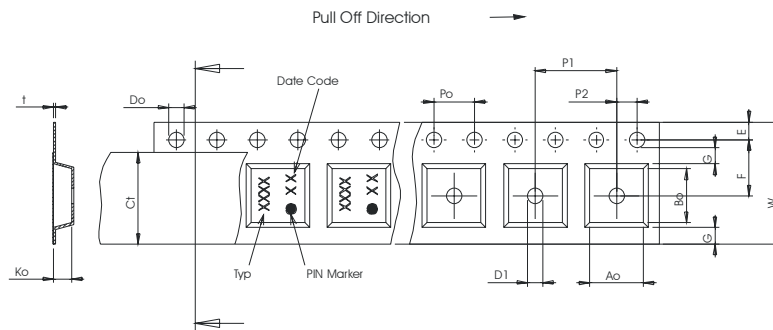
Packing

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:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

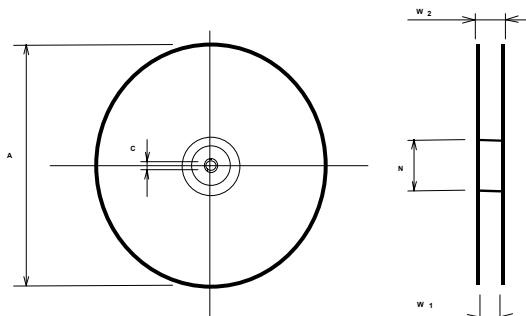
Tape (all dimensions in mm)

- 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 : 5,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

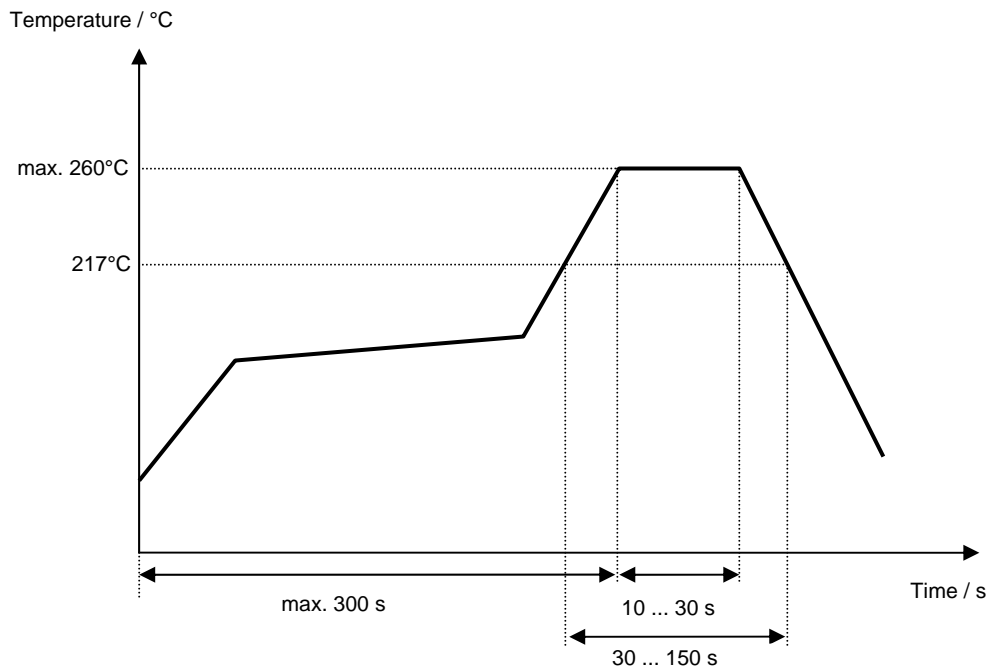
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Air reflow temperature conditions

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	- generation of specification according to customer requirements.	Roizengaft	16.02.2004
1.1	- Add of matching network	Roizengaft	25.02.2004
1.2	- Change absolute attenuation from 11 dB to 14 dB	Dr. Wall	13.05.2004
1.3	- Change test circuit	M.Springfeldt	26.07.2004
1.4	- Changed reflow profile; added typical values and filter characteristic; generation of filter specification	Martens	18.01.2005
1.5	- Changed OTR and stability characteristics	Strehl	26.06.2007