

Vectron International

Filter specification

TFS 2017B

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	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 2017,5 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 (reference level)	a_e	1,4	dB	max.	2,0	dB
Nominal frequency	f_N	-			2017,5	MHz
Passband	PB	-		f_N	± 7,5	MHz
Pass band ripple		0,2	dB	max.	0,8	dB
Absolute attenuation	a_{abs}					
925 MHz ... 1400 MHz		29	dB	min.	25,0	dB
1400 MHz ... 1925 MHz		32	dB	min.	30,0	dB
1925 MHz ... 1940 MHz		32	dB	min.	20,0	dB
2085 MHz ... 2390 MHz		40	dB	min.	30,0	dB
2390 MHz ... 2405 MHz		41	dB	min.	35,0	dB
2405 MHz ... 2770 MHz		33	dB	min.	25,0	dB
2770 MHz ... 2785 MHz		33	dB	min.	27,0	dB
2785 MHz ... 3000 MHz		31	dB	min.	25,0	dB
Input power level		-		max.	15	dBm
Operating temperature range	OTR	-			0 °C ... + 70°C	
Storage temperature range		-			- 30 °C ... + 85°C	
Temperature coefficient of frequency	TC_f *	-46	ppm/K			

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

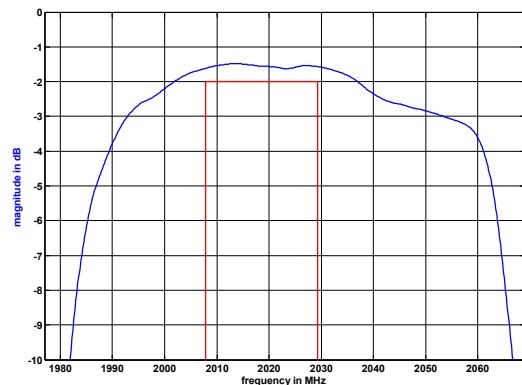
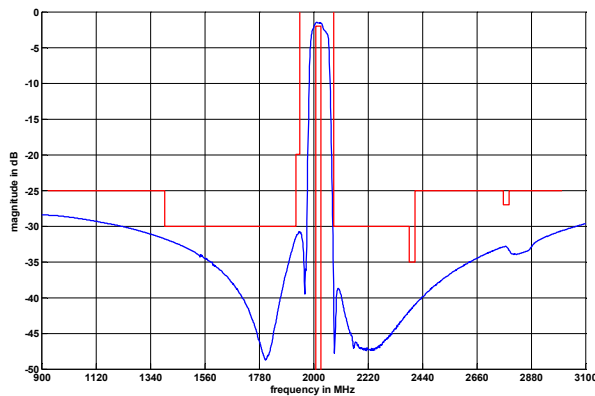
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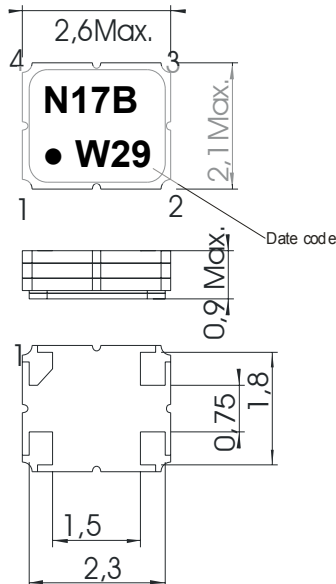
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Filter characteristic



Construction and pin connection

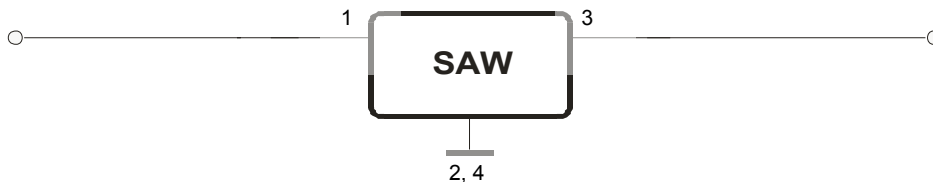
(All dimensions in mm)



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

Date code: Year + week
 W 2008
 X 2009
 A 2010
 ...

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 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)

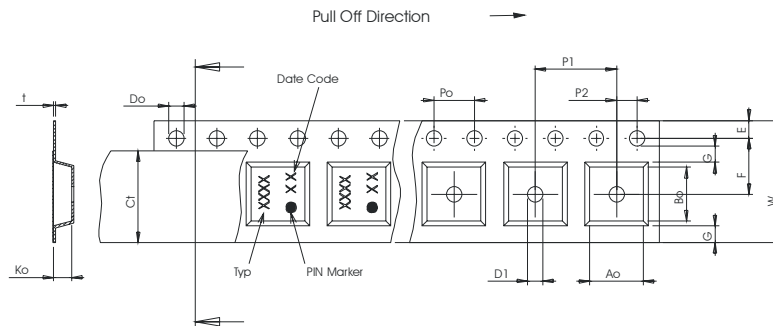
Packing

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

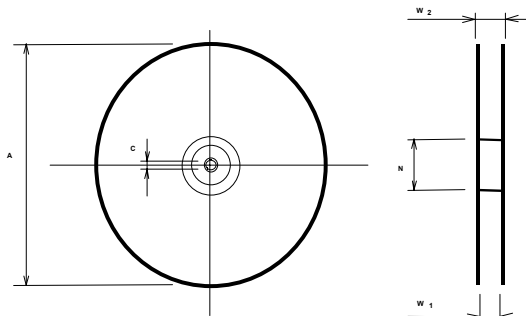
Tape (all dimensions in mm)

- W : 8,00 +0,3/-0,1
- Po : 4,00 ± 0,1
- Do : 1,55 ± 0,05
- E :
- F : 3,50 ± 0,05
- G(min) : 0,75
- P2 : 2,00 ± 0,1
- P1 : 4,00 ± 0,1
- D1(min) : 1,00
- Ao : 2,25 ± 0,1
- Bo : 2,80 ± 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.

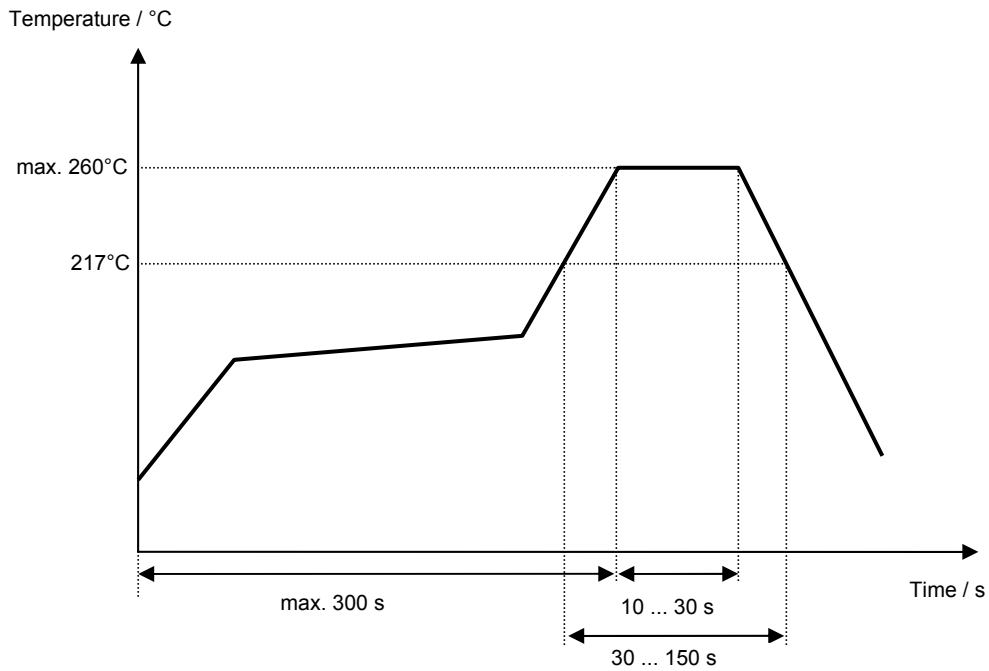
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Air reflow temperature conditions

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 development specification	Strehl	12.12.2005
1.1	- generation of filter specification - added filter characteristic - added typical values	Martens	21.03.2005
1.2	- change input power level	Strehl	17.07.2008