

Vectron International**Filter specification****TFS 385****1/5****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 385,0 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	2,3	dB	max.	4,0	dB
Nominal frequency	f_N	-			385,0	MHz
Passband	PB	-		f_N	± 5,0	MHz
Pass band ripple		0,6	dB	max.	2,0	dB
Absolute attenuation	a_{abs}					
45 MHz ... 295 MHz		55	dB	min.	45	dB
295 MHz ... 367,5 MHz		23	dB	min.	20	dB
402,5 MHz ... 425 MHz		12	dB	min.	5	dB
425 MHz ... 470 MHz		51	dB	min.	20	dB
470 MHz ... 1025 MHz		45	dB	min.	40	dB
1025 MHz ... 1400 MHz		43	dB	min.	20	dB
1400 MHz ... 2000 MHz		22	dB	min.	14	dB
Return loss within PB		18	dB	min.	14	dB
Input power level		-		max.	7	dBm
Operating temperature range	OTR	-			- 10 °C ... + 75 °C	
Storage temperature range		-			- 40 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f **	-76	ppm/K		-	

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

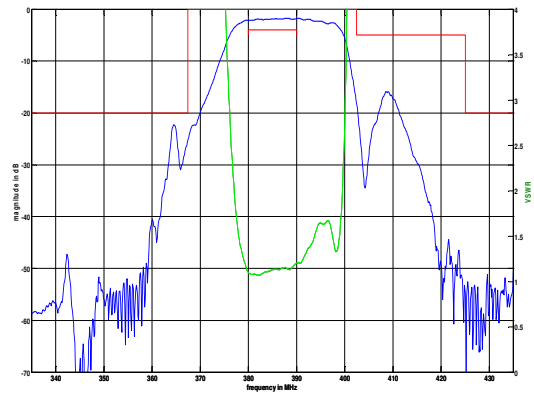
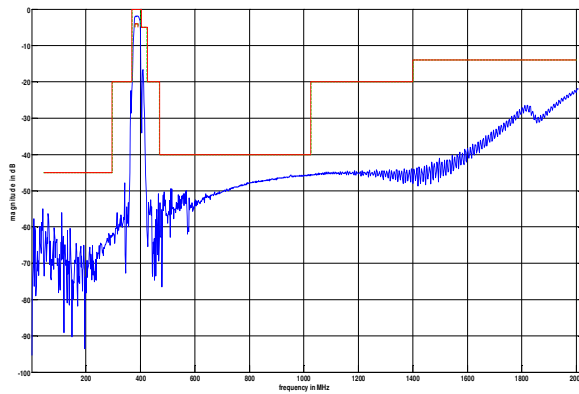
***) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

Generated:**Checked / Approved:**

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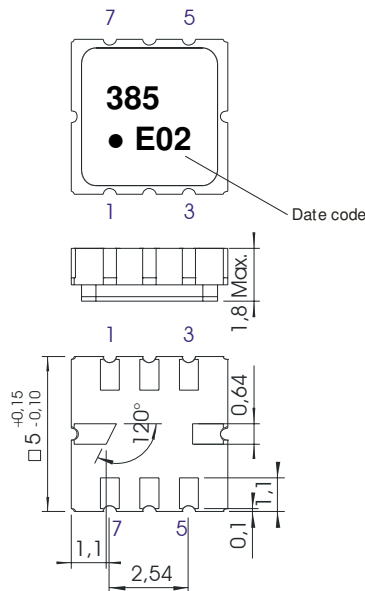
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Filter characteristic



Construction and pin connection

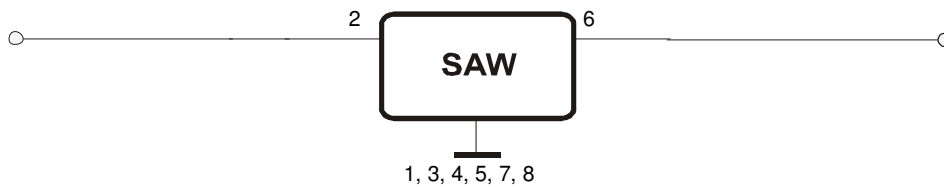
(All dimensions in mm)



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

Date code: Year + week
 E 2014
 F 2015
 G 2016
 ...

50 Ω Test circuit



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Stability characteristics, reliability

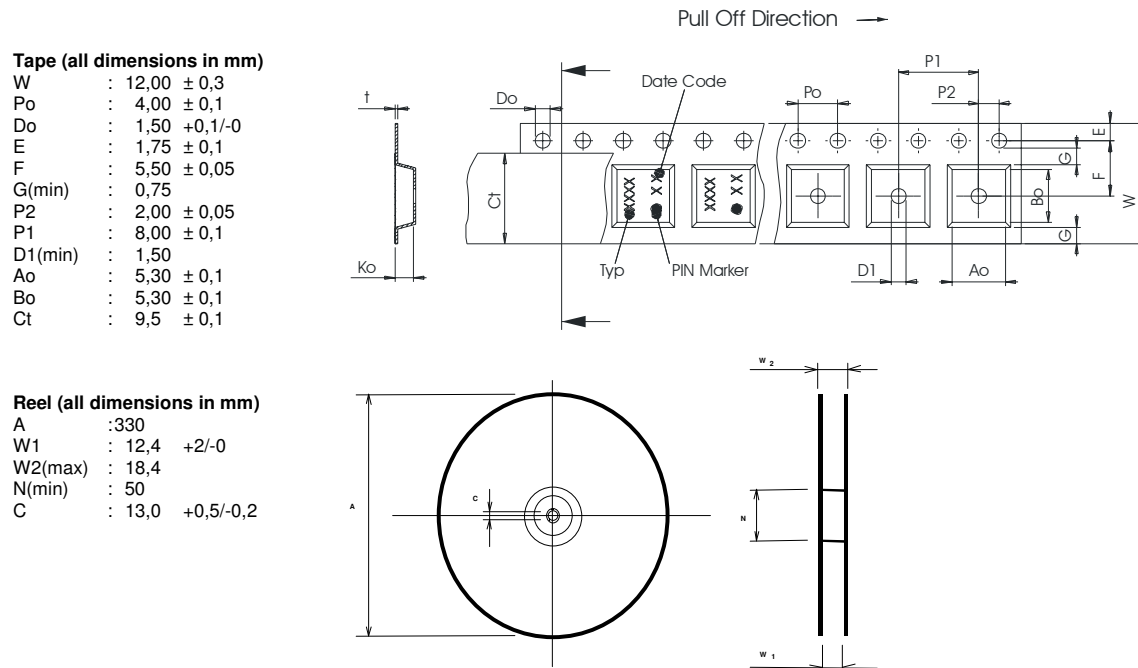
After the following tests the filter shall meet the whole specification:

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 refer to the attached "Air reflow temperature conditions" on page 4;

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 peer 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 |



The minimum bending radius is 45 mm.

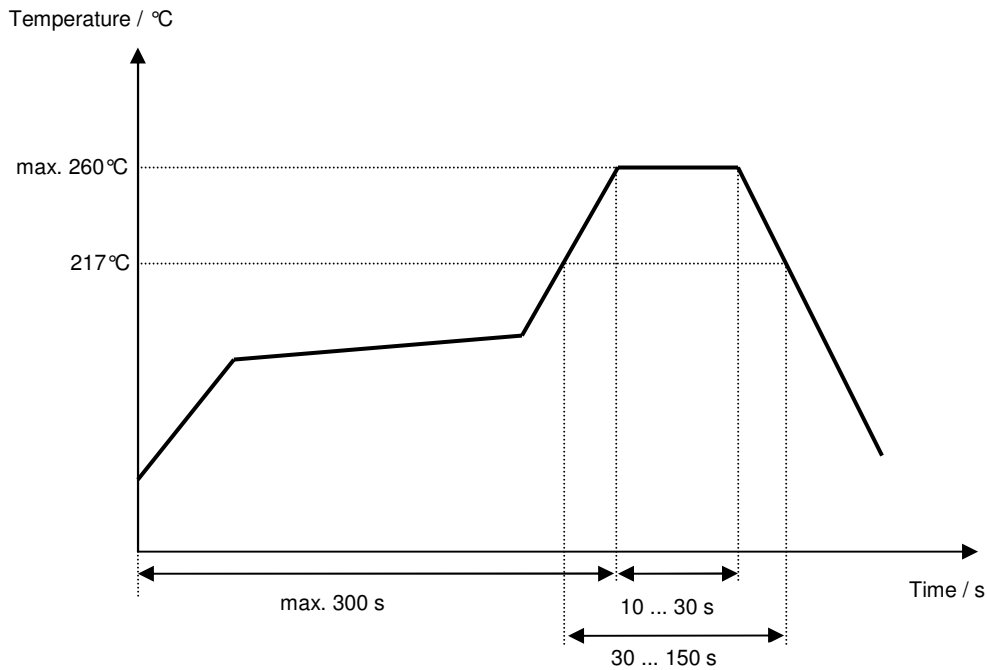
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Air reflow temperature conditions

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	Noack	17.08.2004
1.1	- Add rejection step 1400 – 2000 MHz: 14 dB - Add typical values - Change stability characteristics and reflow profile	Strehl	15.04.2005
2.0	- updating the filter specification after transferring to TFT (change of typical values) - updating temperature coefficient after measurement	S.Springfeldt	11.11.2010
2.1	- maximum input power updated	Kortenbeutel	06.01.2014