

Vectron International**Filter specification****TFS 867A****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 867,5 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	2,7	dB	max.	3,0	dB	
Nominal frequency						f _N	-			867,5	MHz	
Passband						PB	-		f _N	±	12,5	MHz
Pass band ripple							0,9	dB	max.	1,5	dB	
Absolute attenuation						a _{abs}						
0,3	MHz	...	750	MHz		50	dB	min.	20	dB		
750	MHz	...	835	MHz		42	dB	min.	30	dB		
915	MHz	...	1000	MHz		46	dB	min.	30	dB		
1000	MHz	...	2000	MHz		45	dB	min.	20	dB		
Return loss within PB							12,5	dB	min.	9,5	dB	
Input power level							-		max.	0	dBm	
Operating temperature range						OTR	-		- 20 °C ... + 85 °C			
Storage temperature range							-		- 40 °C ... + 85 °C			
Temperature coefficient of frequency						TC _f *	- 40	ppm/K	-			

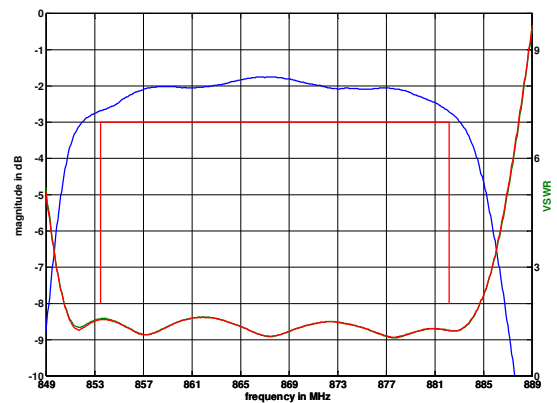
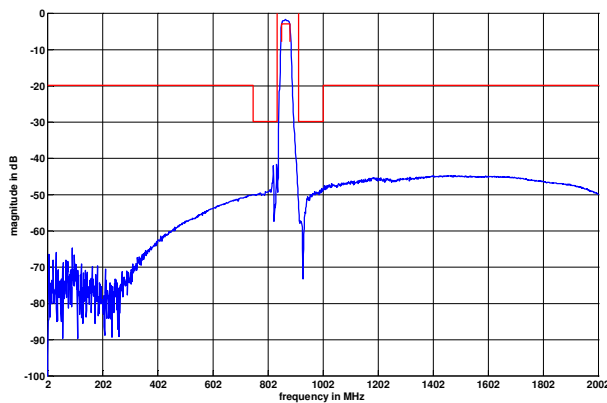
*) $\Delta f_C(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_A) \times f_{CTA}(\text{MHz})$

Generated:**Checked / Approved:**

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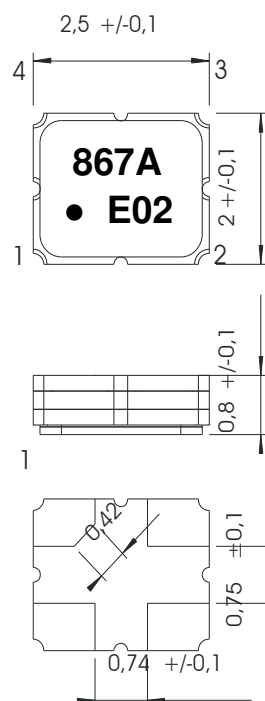
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Filter characteristic



Construction and pin connection

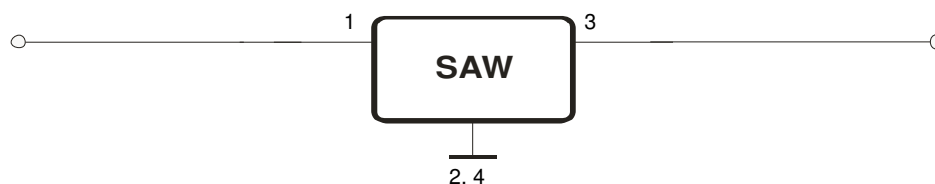
(All dimensions in mm)



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

Date code: Year + week
 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 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)

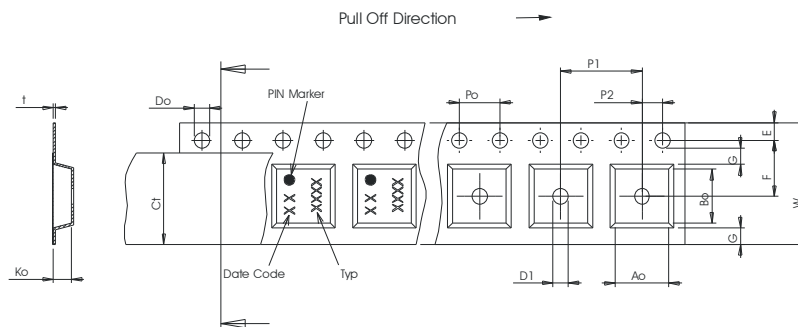
Packing

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;

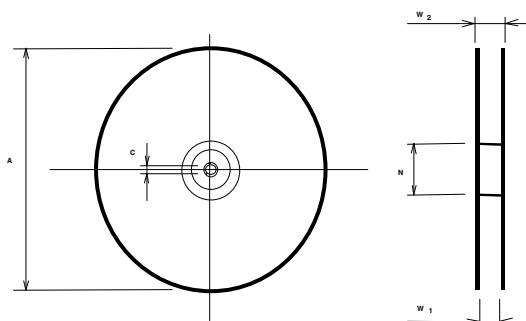
max. pieces of filters per reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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)	: 1,00
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



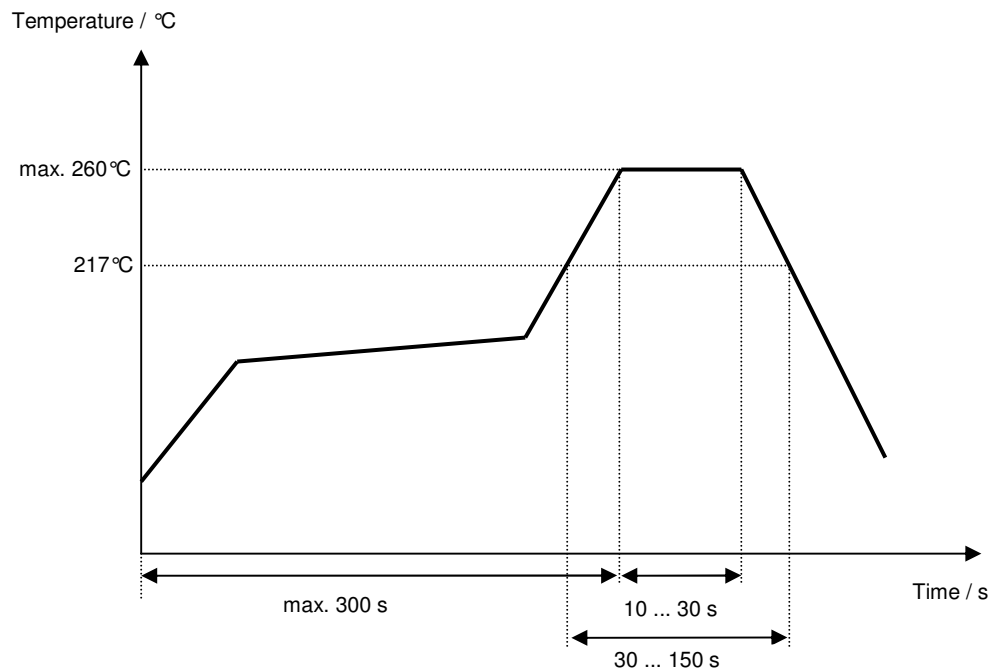
The minimum bending radius is 45 mm.

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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

Vectron International**Filter specification****TFS 867A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	26.01.2006
1.1	- Change insertion loss	Strehl	21.03.2006
1.2	- Add typical value for pass band ripple, PB2 and insertion loss in PB2	Strehl	17.07.2006
1.3	- Add typical value and filter characteristic - Generation of filter specification	Strehl	20.11.2006
1.4	- passband insertion loss modified - change return loss limit	Steiner	21.12.2006
1.5	- package drawing updated	Steiner	22.12.2006
1.6	- Change construction	Strehl	10.04.2007
1.7	- Change packing	Strehl	27.08.2007
1.8	- RoHS statement upgraded	Noack	14.05.2012
1.9	- maximum input power updated	Kortenbeutel	07.01.2014

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