

Vectron International**Filter specification****TFS 872****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 872.5 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.

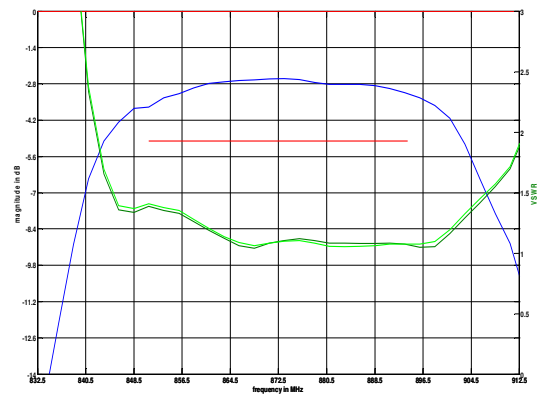
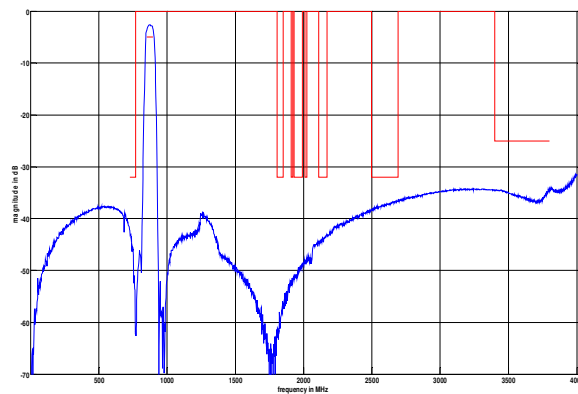
D a t a		typ. value		tolerance / limit		
Insertion loss	a_e	3,9	dB	dB	max.	5,0 dB
Nominal frequency	f_N	-			872,5	MHz
Pass band PB	PB	-			$f_N \pm$	21,5 MHz
Pass band variation in PB		1,2			max.	2,5 dB
Pass band variation over any 15MHz range		1,1	dB		max.	2,0 dB
Absolute attenuation	a_{abs}					
728 MHz .. 768 MHz		42	dB		min.	32 dB
1805 MHz .. 1850 MHz		57	dB		min.	32 dB
1910 MHz .. 1920 MHz		52	dB		min.	32 dB
1930 MHz .. 1990 MHz		49	dB		min.	32 dB
2010 MHz .. 2025 MHz		48	dB		min.	32 dB
2110 MHz .. 2170 MHz		43	dB		min.	32 dB
2496 MHz .. 2690 MHz		36	dB		min.	32 dB
3400 MHz .. 3800 MHz		34	dB		min.	25 dB
Return loss in PB		16	dB		min.	11 dB
Input power level		-			max.	15 dBm
Operating temperature range	OTR	-			- 40 °C ... + 85 °C	
Storage temperature range		-			- 40 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f^*	-73	ppm/K		-	

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

Generated:**Checked / Approved:**

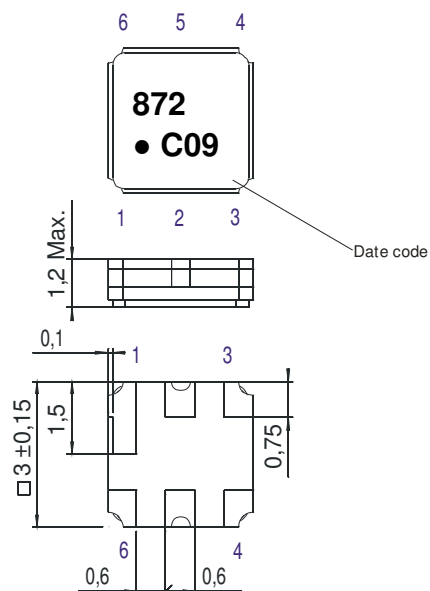
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Construction and pin connection

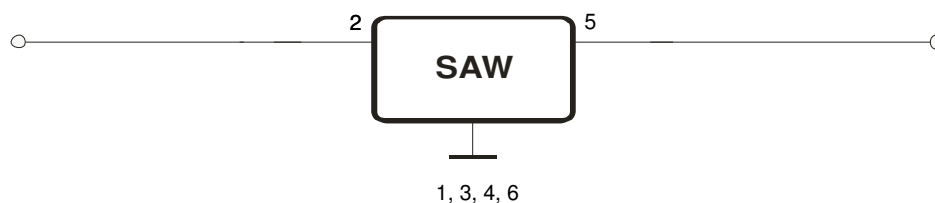
(All dimensions in mm)



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

Date code: Year + week
 C 2012
 D 2013
 E 2014
 ...

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 / 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)

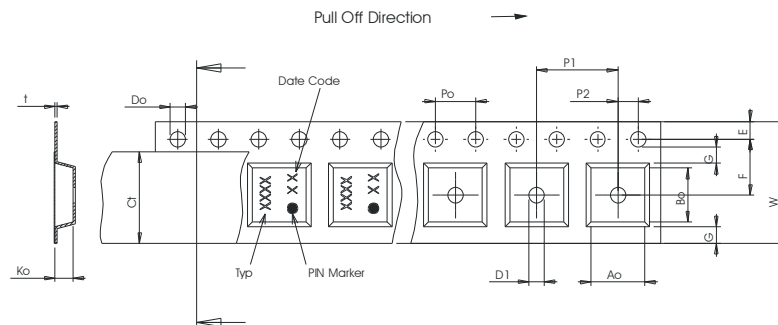
Packing

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;

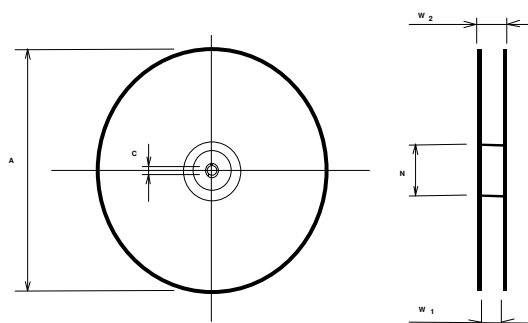
max. pieces of filters per reel: 9000
reel of empty components at start: min. 300 mm
reel of empty components at start including leader: min. 500 mm
trailer: min. 300 mm

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



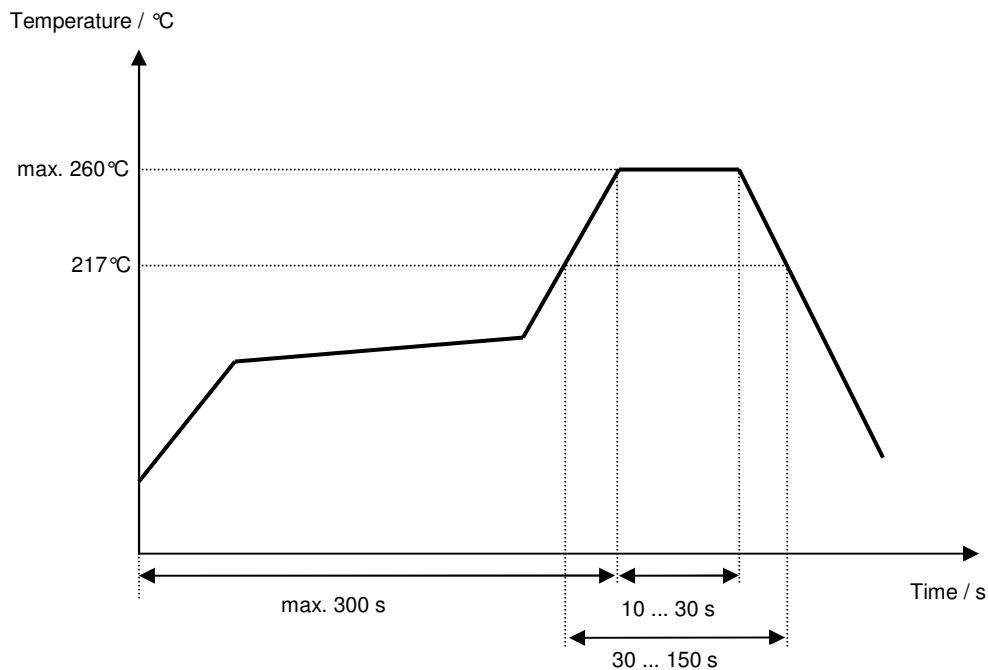
The minimum bending radius is 45 mm.

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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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Vectron International**Filter specification****TFS 872****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	S.Springfeldt	26.11.2009
1.1	- Generation of filter specification	S.Springfeldt	12.02.2010
2.0	- Change of package, insertion loss, return loss and pass band ripple, updating the typical parameters	S.Springfeldt	09.03.2010
2.1	- Reworked input power level from 0dBm up to 15dBm	S.Springfeldt	29.03.2010
2.2	- Change of typical values	S.Springfeldt	21.06.2010
2.3	- Change of storage temperature	S.Springfeldt	13.05.2011
2.4	- Correcting 50 Ω test circuit	S.Springfeldt	01.03.2012

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