

Vectron International**Filter specification****TFS 915L****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω
Source:	128 Ω	-2.5 pF
Load:	128 Ω	-2.5 pF

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS 915L is the minimum attenuation in the passband. The minimum attenuation in the passband is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 915 MHz without any tolerance or limit. 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	3.2	dB	max.	5.5	dB
Nominal frequency	f_N	-			915	MHz
Passband @ 3dB	PB	1265	KHz	$f_N \pm$	0.35	MHz
Amplitude ripple	within PB	0.4	dB	max.	3.5	dB
Relative attenuation	a_{rel}					
@ $f_N - 10.7$ MHz		50	dB	min.	20	dB
@ $f_N + 10.7$ MHz		45	dB	min.	20	dB
@ $f_N - 21.4$ MHz		60	dB	min.	30	dB
@ $f_N + 21.4$ MHz		45	dB	min.	30	dB
Input power level		-		max.	0	dBm
Operating temperature range	OTR	-		- 10 °C ... + 60 °C		
Storage temperature range		-		- 40 °C ... + 85 °C		
Frequency inversion temperature		25	°C		-	
Temperature coefficient of frequency	TC_f *	- 0.035	ppm/K ²		-	

*) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$.

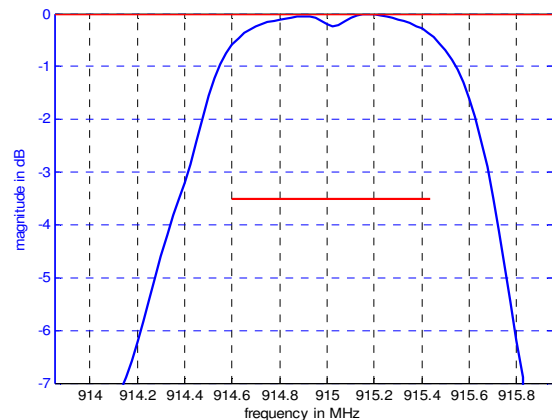
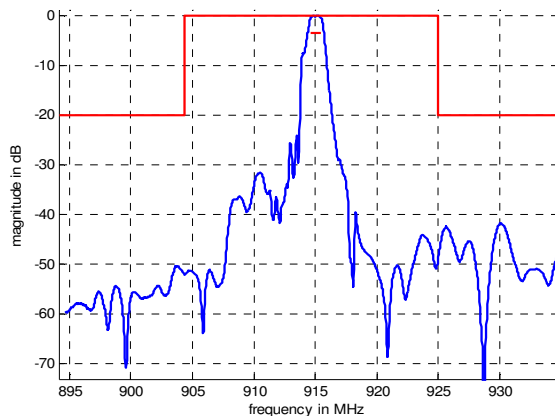
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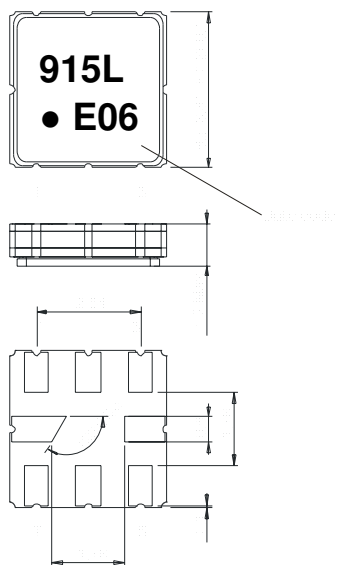
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Filter characteristic



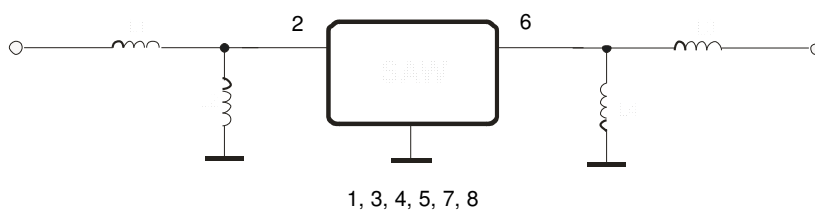
Construction and pin connection

(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 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)

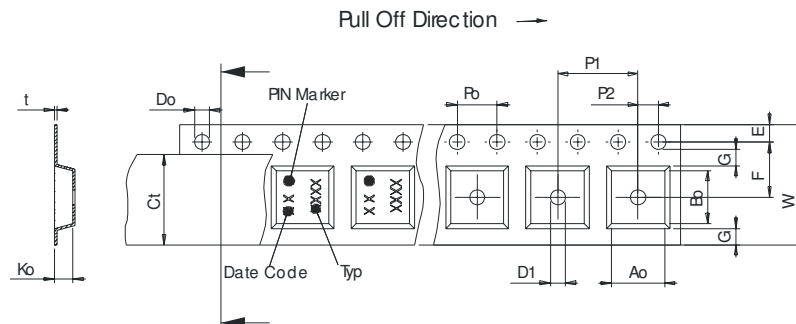
Packing

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;

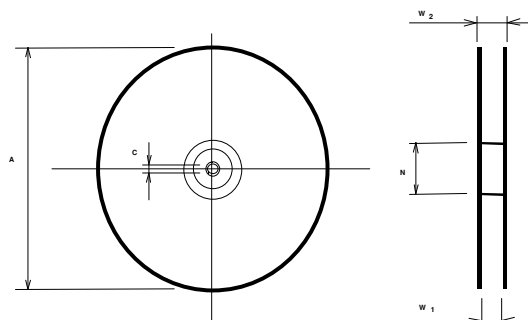
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 12,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 5,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 8,00 ± 0,1
D1(min)	: 1,50
Ao	: 4,30 ± 0,1
Bo	: 4,30 ± 0,1
Ct	: 9,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 12,4 +2/-0
W2(max)	: 18,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



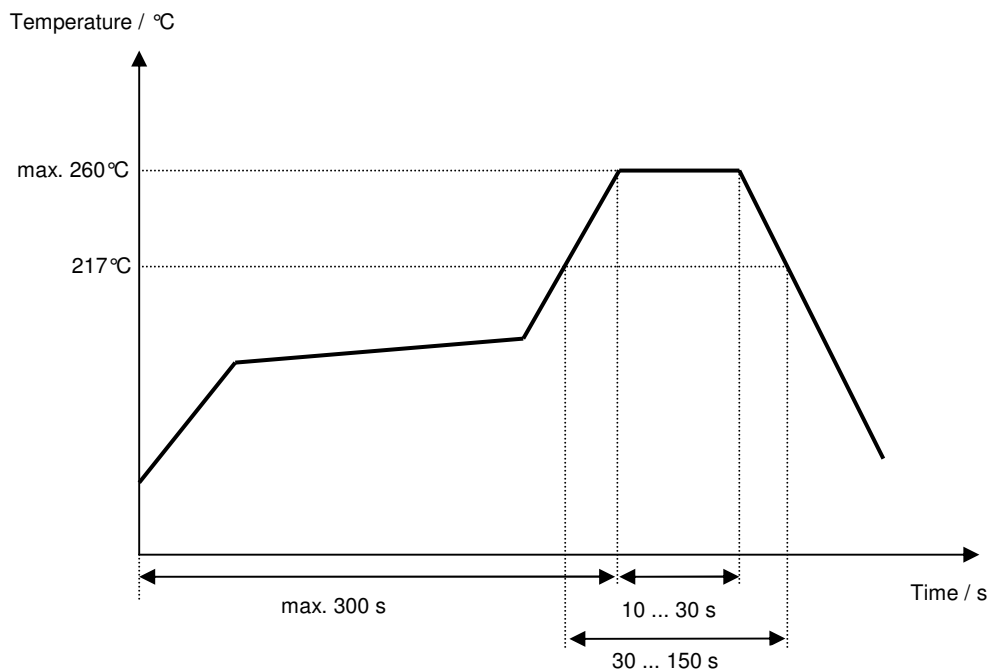
The minimum bending radius is 45 mm.

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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 915L****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of filter specification	Dr. Sabah	16.08.2005
1.1	Maximum input power updated	Kortenbeutel	04.02.2014

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