

**Vectron International****Filter specification****TFS 847B****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50Ω	
Output:	50Ω	

**Characteristics**

## Remark:

The maximum attenuation in the passband is defined as the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed at 847MHz 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.

<b>D a t a</b>		<b>typ. value</b>	<b>tolerance / limit</b>
<b>Insertion loss in PB</b>	$a_e$	2 dB	max. 3 dB
<b>Nominal frequency</b>	$f_N$		847 MHz
<b>Passband</b>	PB		$f_N \pm 15$ MHz
<b>Passband variation</b>		1.2 dB	max. 2 dB
<b>Passband ripple</b>	p-p	0.4 dB	max. 1.5 dB
<b>Absolute attenuation</b>	$a_{abs}$		
791 MHz ... 819 MHz		30 dB	min. 25 dB
819 MHz ... 821 MHz		35 dB	min. 20 dB
<b>VSWR within PB</b>		2 : 1	max. 2.2 : 1
<b>Power durability</b>			max. 10 dBm
<b>Operating temperature range</b>	OTR		- 10 °C ... + 70 °C
<b>Storage temperature range</b>			- 40 °C ... + 85 °C
<b>Temperature coefficient of frequency</b>	$TC_f$ *)	-42 ppm/K	

\*)  $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_o) \times f_{CAT}(\text{MHz})$

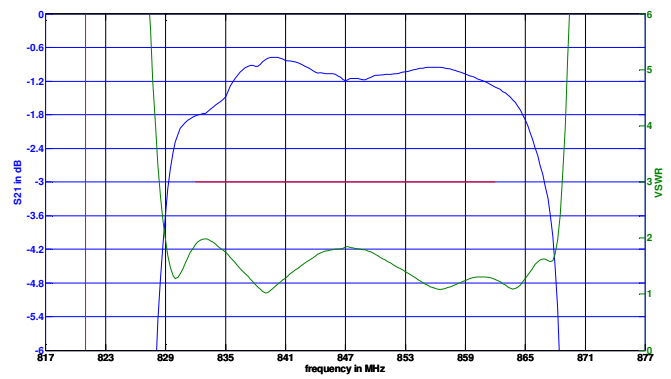
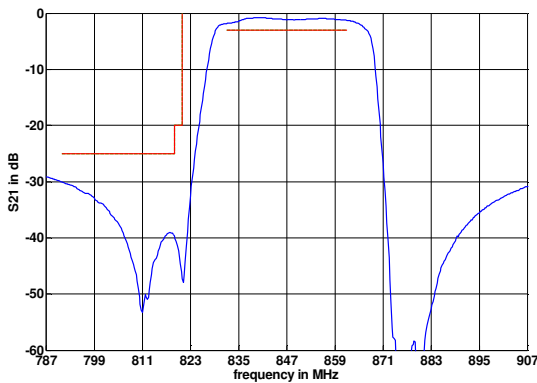
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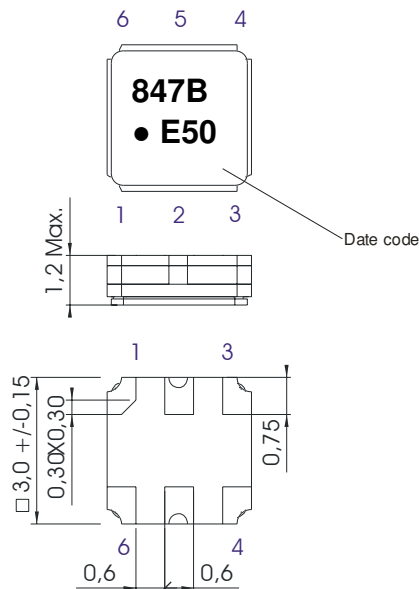
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**Filter characteristic**



**Construction and pin connection**

(All dimensions in mm)

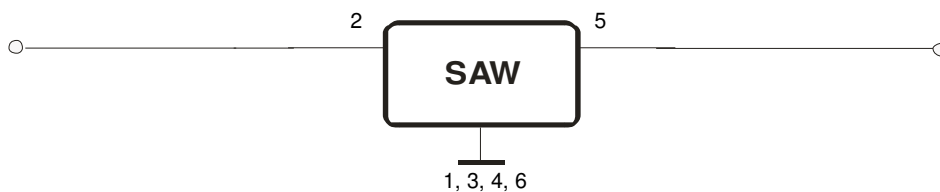


1	Ground
2	Input
3	Ground
4	Ground
5	Output
6	Ground

Date code: Year + week

E	2014
F	2015
G	2016
...	

**50 Ohm Test circuit**



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**Stability characteristics, reliability**

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

1. Shock: 500g, 1ms, half sine wave, 3 shocks each plane;  
DIN IEC 68 T2 - 27
2. Vibration: 10Hz to 500Hz, 0.35 mm or 5g 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 / 15min. 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)

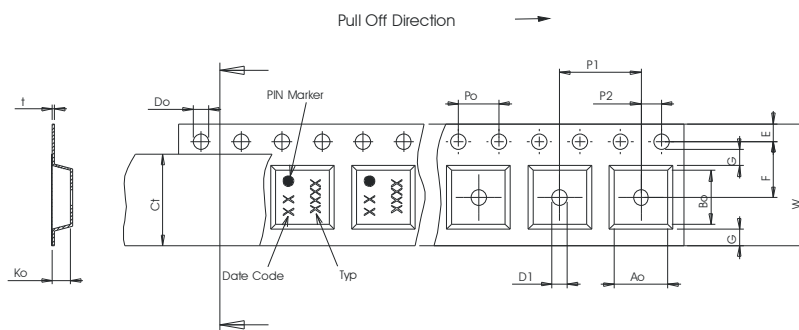
**Packing**

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 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

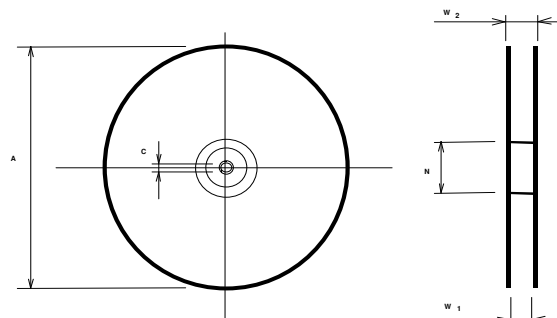
**Tape (all dimensions in mm)**

- W : 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 : 5.3 ± 0.1



**Reel (all dimensions in mm)**

- A : 330 or 180
- W1 : 8.4 +1.5/-0
- W2(max) : 14.4
- N(min) : 60.0
- C : 13.0 ± 0.2



The minimum bending radius is 45 mm.

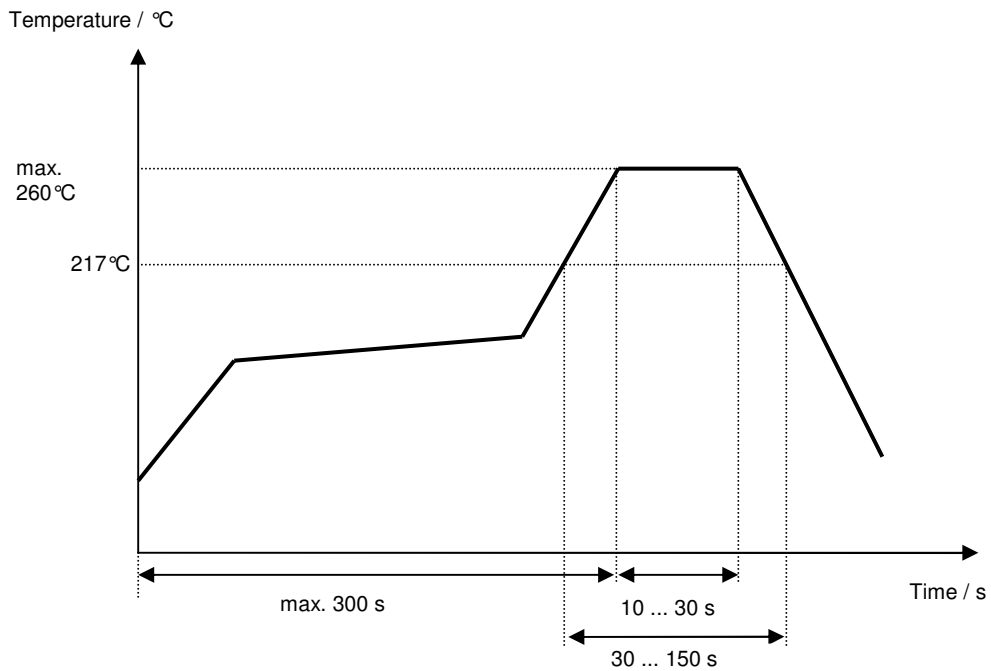
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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
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**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	Generation of filter specification	S.Springfeldt	12.12.2014