

**Vectron International****Filter specification****TFS 2595A****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 2595A MHz without any tolerance or limit. The values of absolute attenuation  $a_{abs}$  are guaranteed within the operating temperature range OTR. 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</b>	$a_e$	2,3 dB	max. 3,0 dB
<b>Nominal frequency</b>	$f_N$		2595,0 MHz
<b>Passband</b>	PB		$f_N \pm 25$ MHz
<b>Pass band variation</b>		0,63 dB	max. 1,0 dB
<b>Absolute attenuation</b>	$a_{abs}$		
0,3 MHz ... 2400 MHz		24 dB	min. 20 dB
2875 MHz ... 2930 MHz		33 dB	min. 25 dB
2930 MHz ... 6000 MHz		20 dB	min. 10 dB
<b>Absolute group delay within PB</b>		6 ns	max. 40 ns
<b>Group delay ripple within PB</b>	p-p	3 ns	max. 15 ns
<b>Return loss within PB</b>		11,5 dB	min. 10 dB
<b>Input power level</b>			max. 10** dBm
<b>Operating temperature range</b>	OTR		- 40 °C ... + 85 °C
<b>Storage temperature range</b>			- 40 °C ... + 85 °C
<b>Temperature coefficient of frequency</b>	$TC_f$ *	-46 ppm/K	

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

\*\*) 22dBm/1minute @ 85°C

**Generated:**

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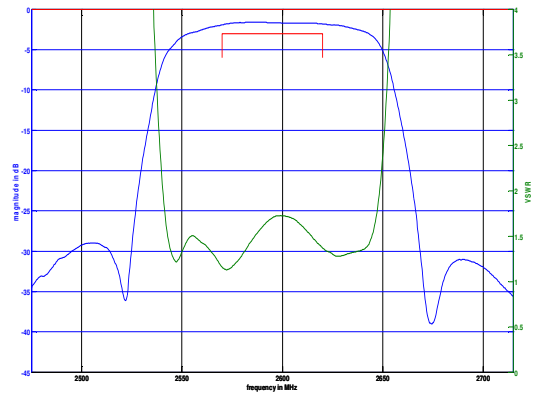
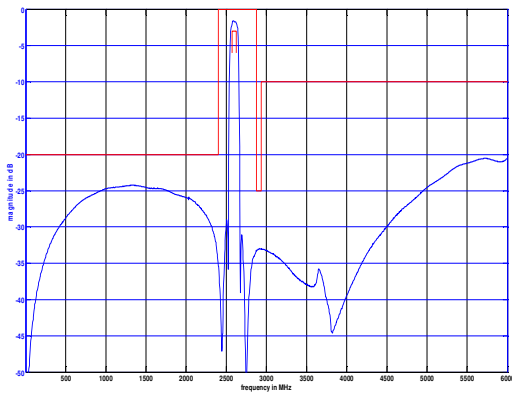
**Checked / Approved:**

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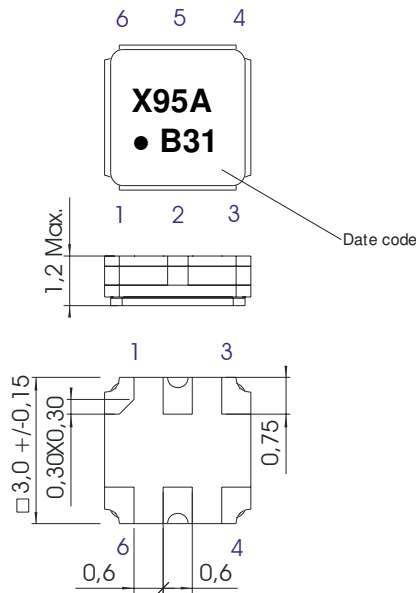
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**Filter characteristic**



**Construction and pin connection**

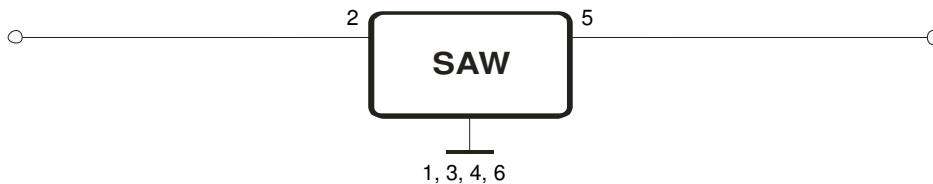
(All dimensions in mm)



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

- Date code: Year + week
- B 2011
  - C 2012
  - D 2013
  - ...

**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;
5. ESD ANSI/ESD S20.20-1999, class 0 for HBM

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

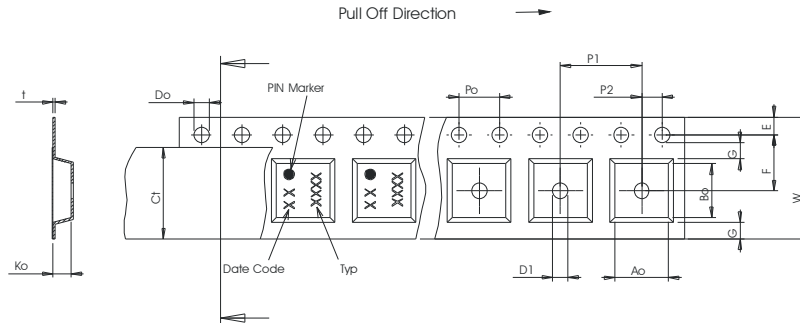
**Packing**

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: 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

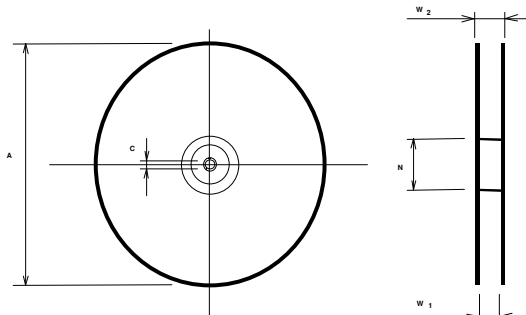
**Tape (all dimensions in mm)**

- 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 : 180
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 60
- C : 13,0 ± 0,2



The minimum bending radius is 45 mm.

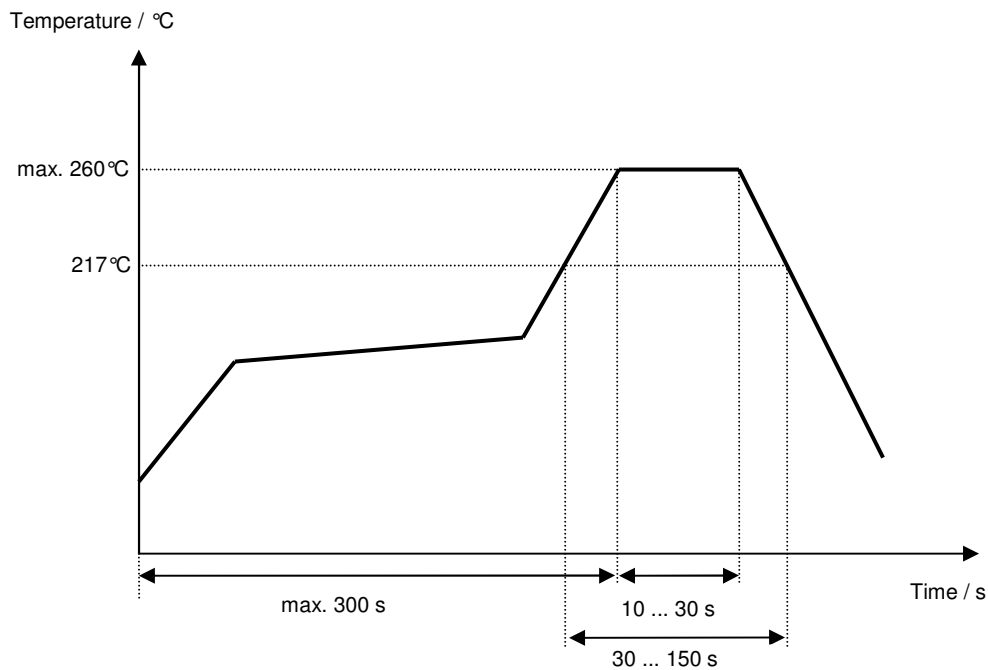
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**Air reflow temperature conditions**

<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 development specification	S.Springfeldt	25.10.2010
1.1	Generation of filter specification, change of filter orientation in 'tape and reel'	S.Springfeldt	30.03.2011
2.0	Change of return loss to 10dB	S.Springfeldt	18.04.2011
2.1	Added ESD classification	S.Springfeldt	02.08.2011