

**Vectron International****Filter specification****TFS 1842****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	13	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 1842,5 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	
<b>Insertion loss within PB</b> (reference level)		$a_e$	3,5 dB	max.	3,9 dB
<b>Nominal frequency</b>		$f_N$	-		1842,5 MHz
<b>Centre frequency</b>		$f_C$	1842,5 MHz		-
<b>Passband</b>		PB	90 MHz	$f_N \pm$	37,5 MHz
<b>Pass band ripple</b>			1 dB	max.	1,9 dB
<b>Absolute attenuation</b>		$a_{abs}$			
10 MHz ... 370 MHz			48	min.	40 dB
370 MHz ... 1300 MHz			43	min.	37 dB
1300 MHz ... 1600 MHz			35	min.	30 dB
1600 MHz ... 1705 MHz			29	min.	25 dB
1705 MHz ... 1785 MHz			11	min.	10 dB
1920 MHz ... 1980 MHz			30	min.	10 dB
1980 MHz ... 2530 MHz			28	min.	25 dB
2530 MHz ... 2680 MHz			24	min.	20 dB
2680 MHz ... 3400 MHz			18	min.	15 dB
3400 MHz ... 3975 MHz			13	min.	10 dB
3975 MHz ... 6000 MHz			6	min.	5 dB
<b>VSWR within PB</b>					
input			2,3 : 1	max.	2,5:1
output			2,5 : 1	max.	2,7:1
<b>Input power level</b>			-	max.	15 dBm
<b>Operating temperature range</b>		OTR	-		- 20 °C ... + 80°C
<b>Storage temperature range</b>			-		- 40 °C ... + 85°C
<b>Temperature coefficient of frequency</b>		$TC_f$ *	- 40 ppm/K		-

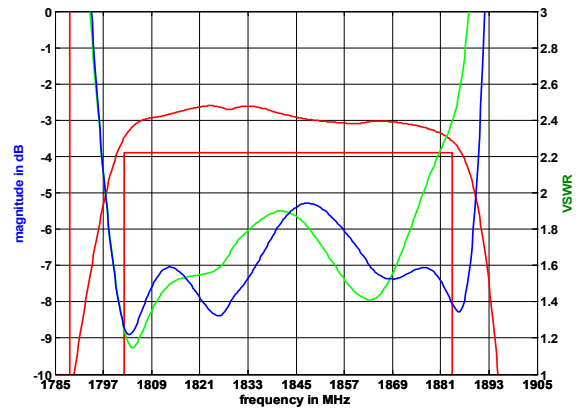
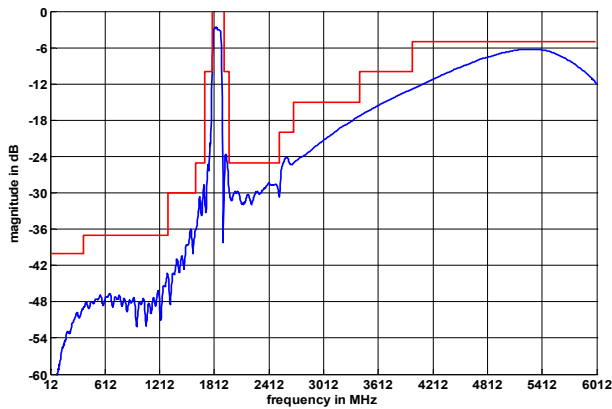
\*)  $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$

**Generated:****Checked / Approved:**

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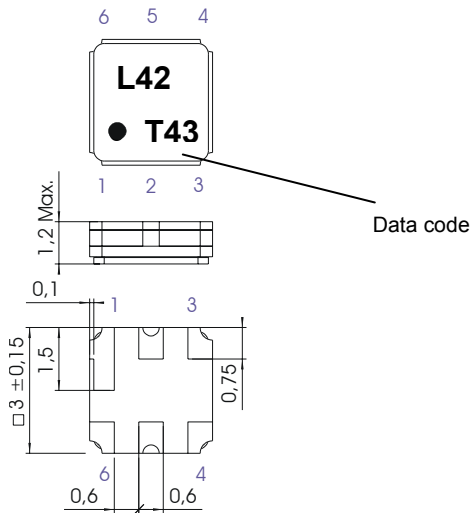
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**Filter characteristic**



**Construction and pin connection**

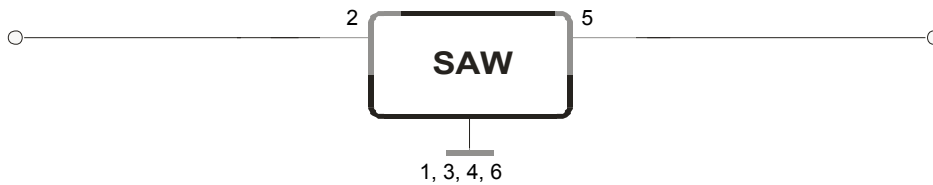
(All dimensions in mm)



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

Date code: Year + week  
 T 2005  
 U 2006  
 V 2007  
 ...

**50 Ω Test circuit**



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**Stability characteristics**

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 plan, 3 plans;  
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: twice max.;  
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

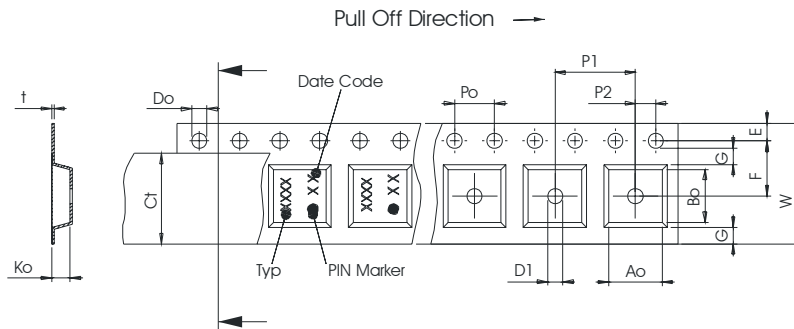
**Packing**

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 peer 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

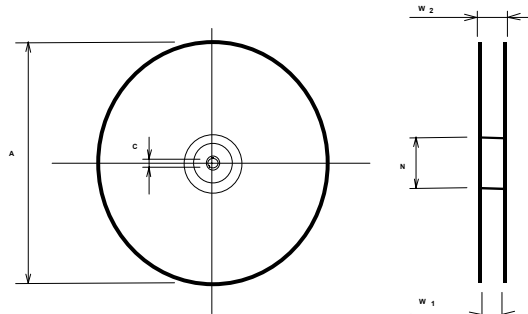
**Tape (all dimensions in mm)**

- 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.

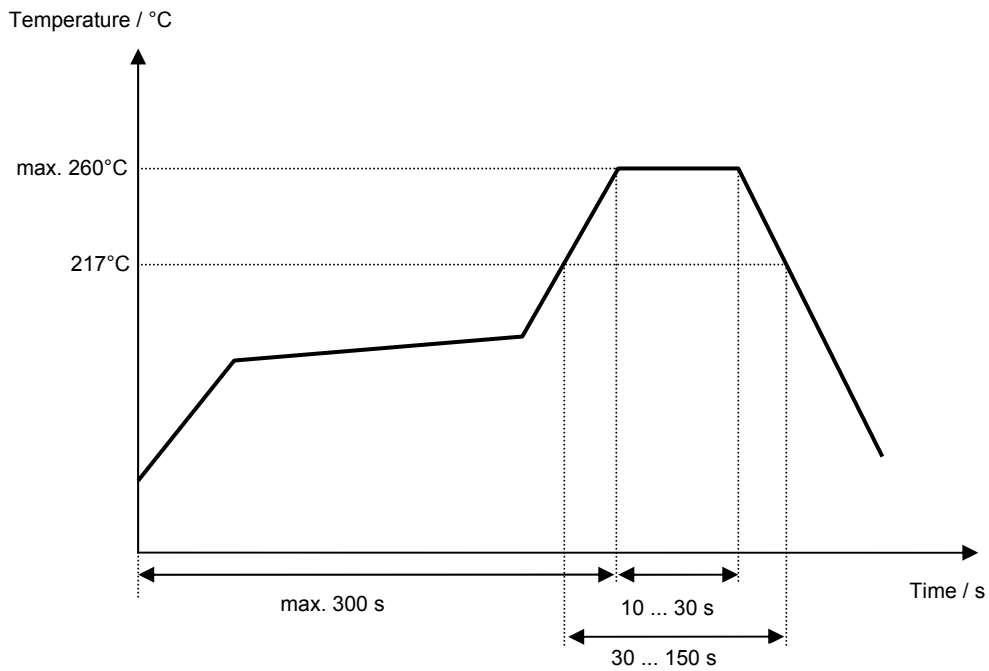
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**Air reflow temperature conditions**

<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 Change</b>	<b>Name</b>	<b>Date</b>
1.0	generation of "Development specification" according to customer requirements	Steiner	24.07.2003
1.1	generate preliminary specification change rejection 4200.0 ... 4920.0 MHz : from 15 dB to 10 dB 4920.0 ... 5200.0 MHz : from 10 dB to 7 dB	Konietzko	16.09.2003
1.2	package corrected	Pfeiffer	24.09.2003
1.3	change pass band change relative attenuation to absolute attenuation	Roizengaft	14.10.2003
1.4	typical values for VSWR added	Steiner	22.10.2003
1.5	definition of packing	Roizengaft	30.10.2003
1.6	change absolute attenuation change stability characteristics	Strehl	06.06.2005
1.7	add typical values and filter characteristic preparation of generation of filter specification	Strehl	15.07.2005
1.8	generation of filter specification	Channaa	27.10.2005
1.9	change operating temperature range and add operable temperature range change stability characteristics	Strehl	04.06.2007
2.0	change back to V1.8	Noack	29.05.2008