

**Vectron International****Filter specification****TFS1575Z****1/5****Measurement condition**

Ambient temperature $T_A$ :	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	$\Omega$
Output:	50	$\Omega$

**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 1575.42 MHz without any tolerance or limit. The values of absolute attenuation  $a_{abs}$  are guaranteed over the whole operating temperature range. The frequency shift of the filter within 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 within PB1</b>	$a_{e1}$	2.5	dB	max.	4.0	dB
<b>Insertion loss within PB2</b>	$a_{e2}$	1.8	dB	max.	2.0	dB
<b>Nominal frequency</b>	$f_N$	-			1575.42	MHz
<b>Passband 1</b>	PB1	-		$f_N \pm$	17.5	MHz
<b>Passband 2</b>	PB2	-		$f_N \pm$	10.0	MHz
<b>Passband variation within PB1</b>	PBV1	0.7	dB	max.	1.0	dB
<b>Absolute attenuation</b>	$a_{abs}$					
0.3 MHz ... 1425.0 MHz		43	dB	min.	32	dB
1425.0 MHz ... 1495.0 MHz		44	dB	min.	42	dB
1540.0 MHz		14	dB	min.	10	dB *)
1610.0 MHz		19	dB	min.	10	dB **)
1655.0 MHz ... 1725.0 MHz		52	dB	min.	42	dB
1725.0 MHz ... 3000.0 MHz		36	dB	min.	32	dB
<b>Group delay ripple within PB1</b>	GDR1	29	ns	max.	50	ns
<b>Group delay ripple within PB2</b>	GDR2	13	ns	max.	30	ns
<b>VSWR within PB</b>		1.8 : 1		max.	2.2 : 1	
<b>Input power level in PB</b>		-		max.	15	dBm
<b>Operating temperature range</b>	OTR	-			-45 °C ... +85°C	
<b>Storage temperature range</b>		-			-55 °C ... +125°C	
<b>Temperature coefficient of frequency</b>	$TC_f^{***}$	-42	ppm/K			

\*) stop band attenuation between 1495.0 MHz and 1540.0 MHz decreases linearly from 42 dB to 10 dB

\*\*\*) stop band attenuation between 1610.0 MHz and 1655.0 MHz increases linearly from 10 dB to 42 dB

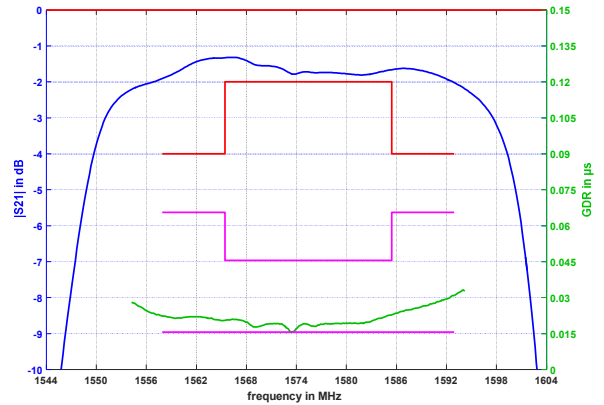
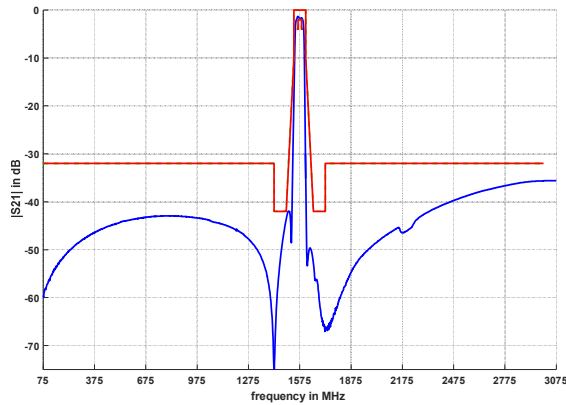
\*\*\*)  $\Delta f = TC_f(T - T_A)f_N$

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

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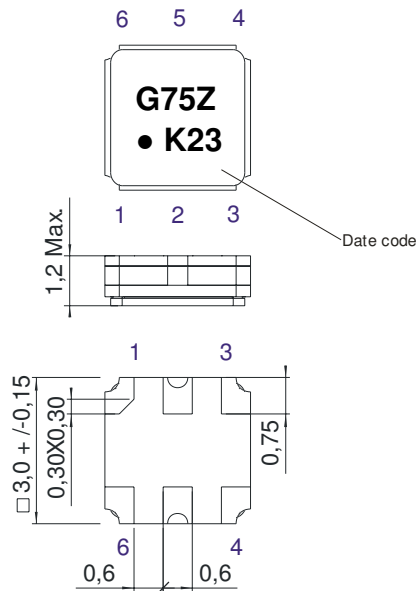
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**Filter characteristic**



**Construction and pin connection**

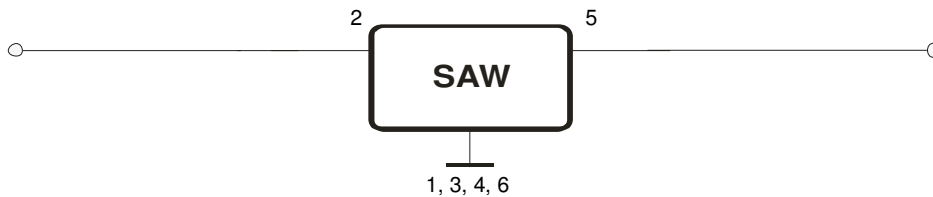
(All dimensions in mm)



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

Date code: Year + week  
 K 2018  
 L 2019  
 M 2020  
 ...

**50 Ω Test circuit**



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**Stability characteristics. reliability**

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

1. Shock: 500 g, 1 ms, half sine wave, 3 shocks each plane;  
DIN IEC 60068 T2 - 27
2. Vibration: 10 Hz to 2000 Hz, 0.35 mm or 5 g respectively, 1 octave per min. 10 cycles per plane, 3 planes; DIN IEC 60068 T2 - 6
3. Change of temperature: -55 °C to 125 °C / 15 min. each / 100 cycles  
DIN IEC 60068 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. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

This filter is RoHS compliant (2011/65/EU)

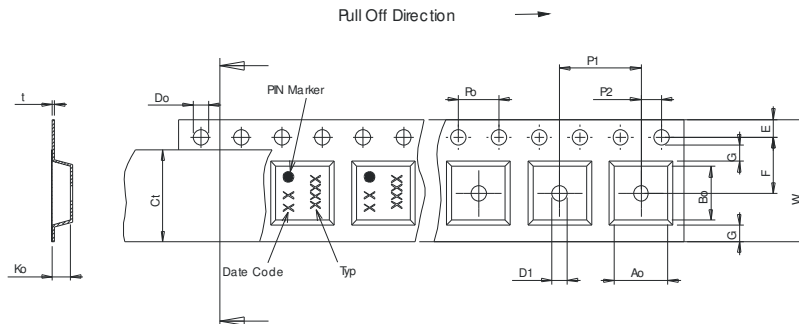
**Packing**

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;

reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

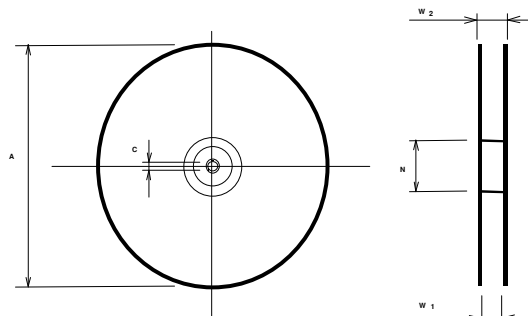
**Tape (all dimensions in mm)**

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	:5.30	±0.1
Ko	:1.50	±0.1
t	:0.25	±0.05



**Reel (all dimensions in mm)**

A	:330	or 180
W1	:8.40	+1.5/-0
W2(max)	:14.40	
N(min)	:60.00	
C	:13.0	±0.2



The minimum bending radius is 45 mm.

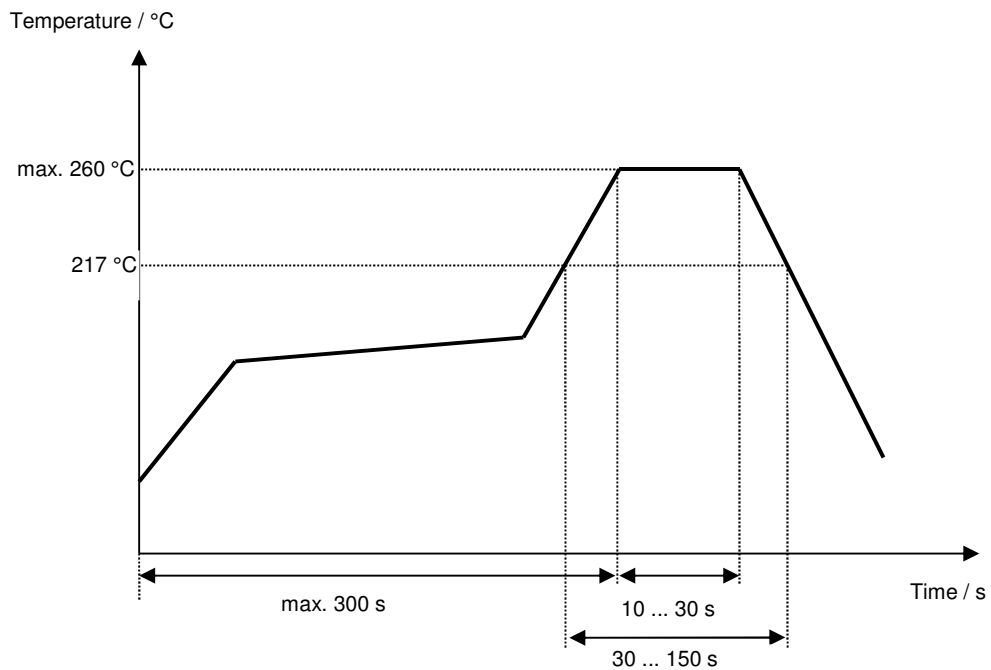
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**Air reflow temperature conditions**

<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	Noack	09.07.2010
2.0	- Change of data table according to new customer requirements	Noack	23.07.2010
3.0	- Change alignment of tape and reel - Add typical values and filter characteristic - Generation of filter specification	Noack	27.05.2011
4.0	- updated data table - updated package drawing - updated stability characteristics - updated Tape & Reel	P. Jaster	07.06.2018
5.0	- updated filter characteristic - updated package	P. Jaster	11.06.2018