

Vectron International**Filter specification****TFS 1575D****1/5****Measurement condition**

Ambient temperature T_0 :	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 1575.42 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		
Insertion loss	a_e	3.5	dB	max.	5.0	dB
Nominal frequency	f_N	-			1575.42	MHz
Passband	PB	-		$f_N \pm$	10.0	MHz
Pass band ripple		1.5	dB	max.	2.5	dB
Absolute attenuation	a_{abs}					
1 MHz ... 1510 MHz		41	dB	min.	40	dB
1540 MHz		42	dB	min.	25	dB
1610 MHz		29	dB	min.	25	dB
1630 MHz ... 2000 MHz		42	dB	min.	40	dB
Group delay ripple within PB		15	ns	max.	20	ns
Phase linearity within PB		15	deg	max.	20	deg
Input power level		-		max.	17	dBm
Operating temperature range	OTR	-		- 40 °C ... + 85 °C		
Storage temperature range		-		- 45 °C ... + 125 °C		
Temperature coefficient of frequency	TC_f *)	- 45	ppm/K	-		

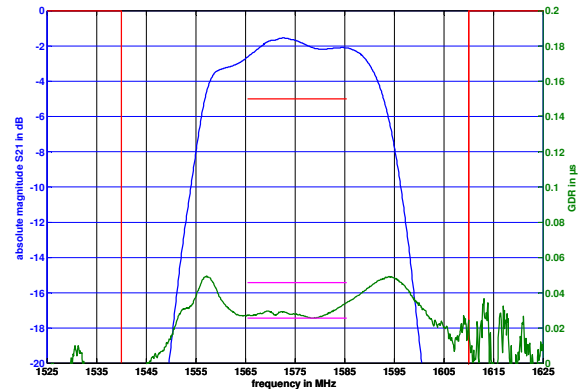
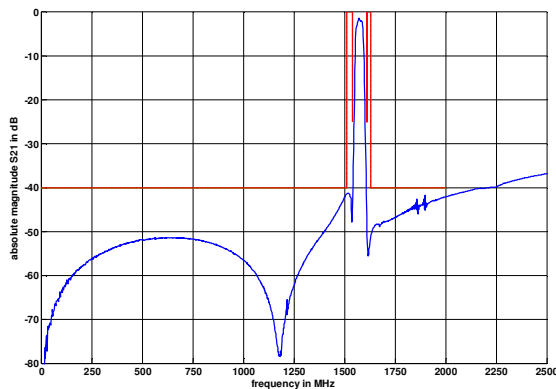
*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

Generated:**Checked / Approved:**

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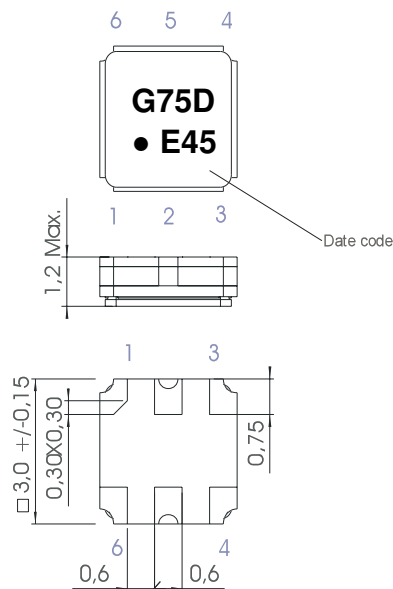
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Filter characteristic



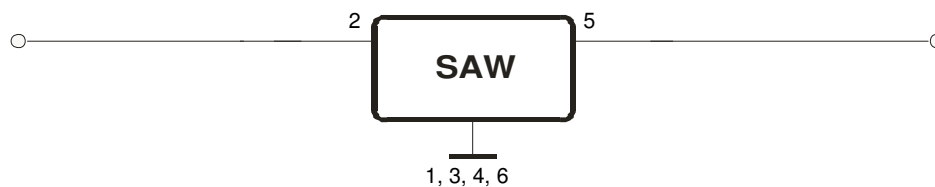
Construction and pin connection

(All dimensions in mm)



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

Date code: Year + week
 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 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 / 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 refer to the attached "Air reflow temperature conditions" on page 4;

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

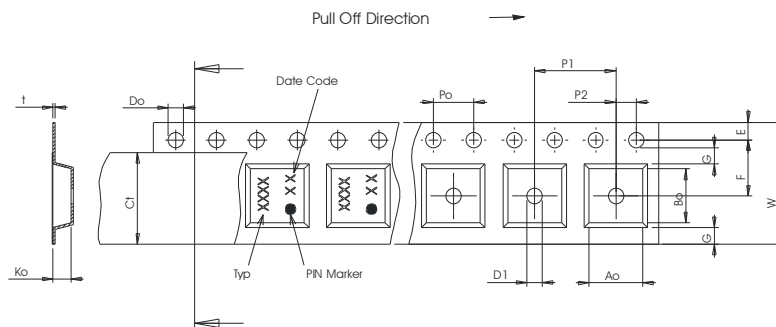
Packing

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;

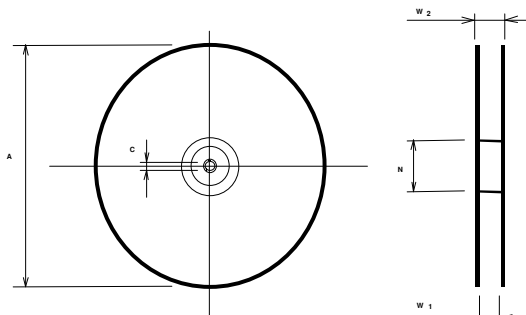
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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
C	: 13,0 ± 0,2



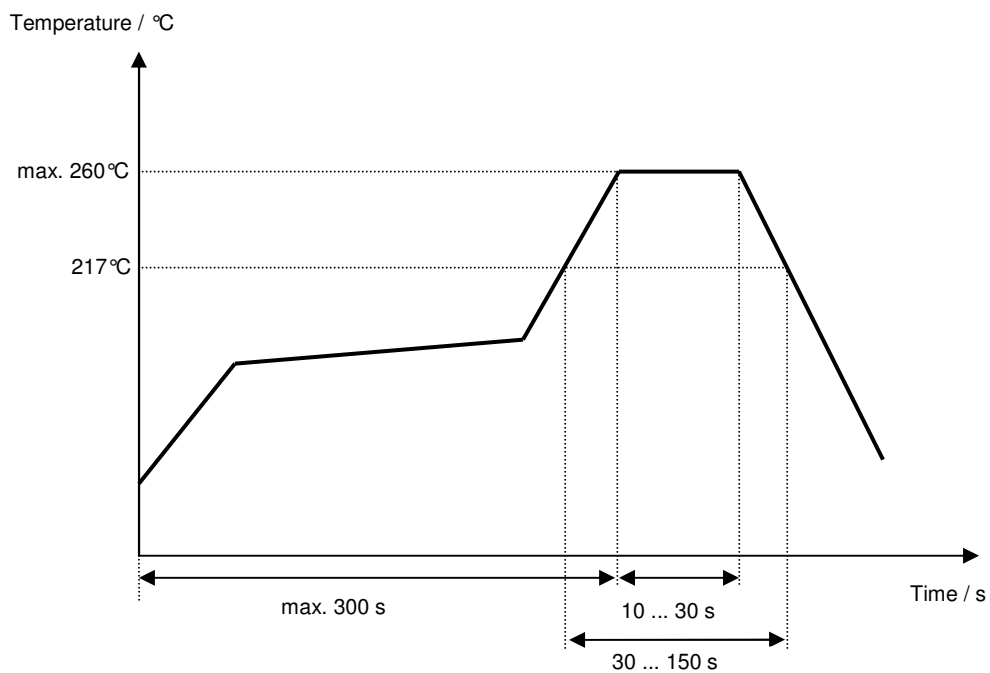
The minimum bending radius is 45 mm.

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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

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Vectron International**Filter specification****TFS 1575D****5/5****History**

Version	Reason of changes	Name	Date
1.0	- Generation of development specification	M. Springfeldt	29.07.2004
1.1	- Add typical values and filter characteristic - Generation of filter specification	Strehl	08.11.2005
1.2	- Change data table (storage temperature range) - Update stability characteristics, reliability and packing	Noack	05.01.2015

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