

Vectron International**Filter specification****TFS 1569****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 1569 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	3.6	dB	max.	5.0	dB
Nominal frequency	f_N	-			1569.0	MHz
Passband	PB	-		f_N	± 44.0	MHz
Pass band variation		1.3	dB	max.	3.0	dB
Absolute attenuation	a_{abs}					
0.3 MHz ... 1400 MHz		31	dB	min.	25	dB
1700 MHz ... 2500 MHz		34	dB	min.	25	dB
Group delay ripple within PB		5	ns	max.	8	ns
Input power level		-		max.	12	dBm
Operating temperature range	OTR	-			- 40 °C ... + 85 °C	
Storage temperature range		-			- 45 °C ... + 85 °C	
Temperature coefficient of frequency	TC _f *	- 74	ppm/K			

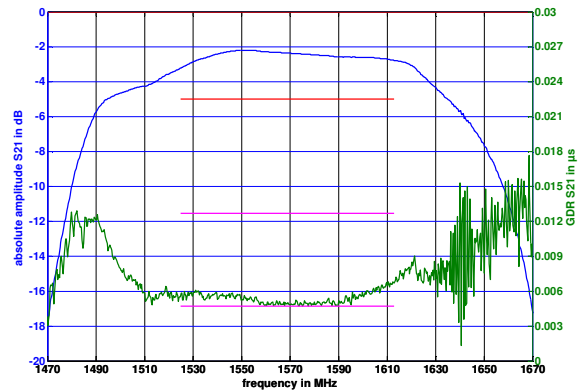
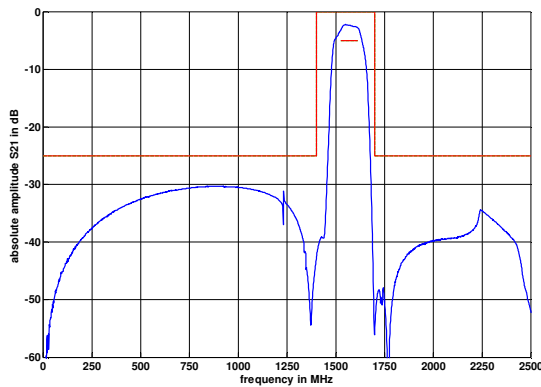
*) $\Delta f(\text{Hz}) = \text{TC}_f(\text{ppm/K}) \times (T - T_0) \times f_{T_0}(\text{MHz})$

Generated:**Checked / Approved:**

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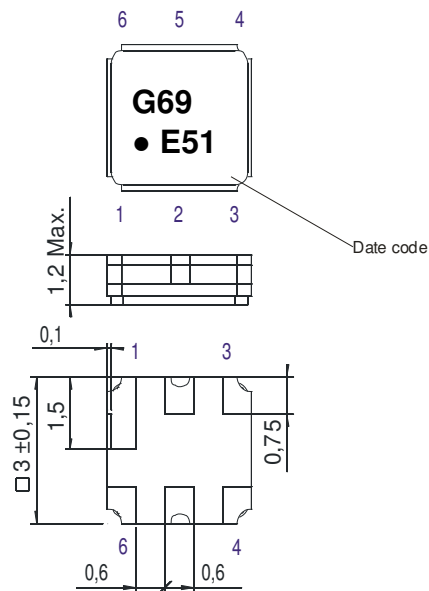
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Filter characteristic



Construction and pin connection

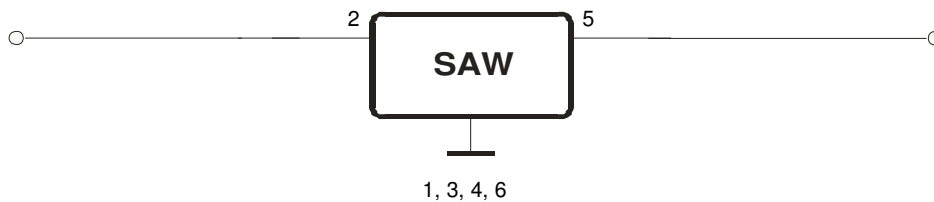
(All dimensions in mm)



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;

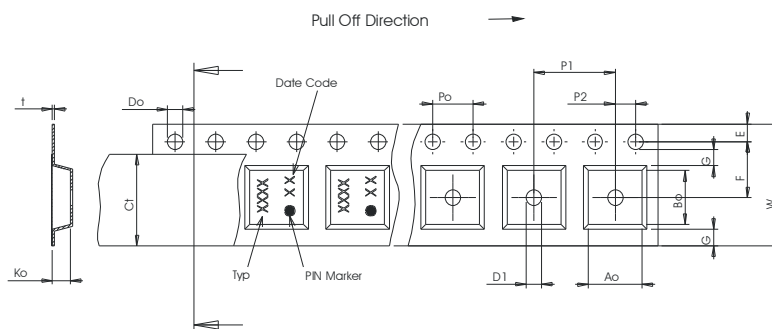
This filter is RoHS compliant (2011/65/EU)

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 |

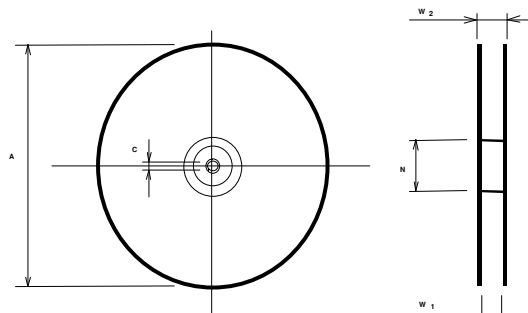
Tape (all dimensions in mm)

- 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.

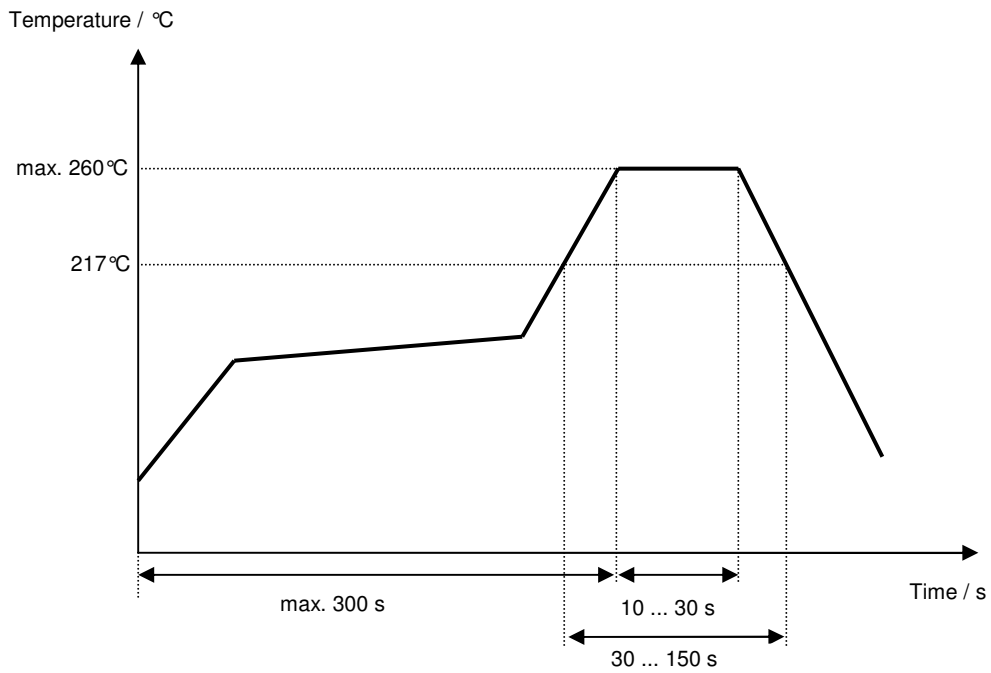
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Air reflow temperature conditions

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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History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	20.02.2006
1.1	- Correction of remark - Add typical values and filter characteristic - Generation of filter specification	Noack	02.06.2006
1.2	- Update data table, filter characteristic and stability characteristics	Noack	16.12.2014