

Vectron International**Filter specification****TFS 1225C****1/5****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 0 dBm

Terminating impedance:

Input: 50 Ω
 Output: 50 Ω
 Source: 49 Ω || -1pF
 Load: 49 Ω || -1pF

Characteristics

Remark:

The maximum attenuation in the passband is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1225.0 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 in PB		a_e	4.8	dB		max.	5.5	dB	
Nominal frequency		f_N	-				1225.0	MHz	
Passband		PB	-			f_N	±	59.0	MHz
Passband variation			2.3	dB		max.	3.0	dB	
Absolute attenuation		a_{abs}							
0.3	MHz ... 1100	MHz	26	dB		min.	23	dB	
1100	MHz ... 1120	MHz	32	dB		min.	10	dB	
1330	MHz ... 1350	MHz	18	dB		min.	10	dB	
1350	MHz ... 3000	MHz	30	dB		min.	23	dB	
Group delay ripple			-						
1166	MHz ... 1187	MHz	8	ns		max.	15	ns	
1187	MHz ... 1217	MHz	7	ns		max.	15	ns	
1217	MHz ... 1237	MHz	5	ns		max.	15	ns	
1237	MHz ... 1254	MHz	9	ns		max.	15	ns	
1254	MHz ... 1284	MHz	11	ns		max.	15	ns	
Group delay variation (unit to unit)		*)	+/- 4	ns		max.	+/- 7	ns	
Return loss within PB			10	dB		min.	8	dB	
Input power level in PB			-			max.	10	dBm	
Operating temperature range		OTR	-				- 40 °C ... + 85 °C		
Storage temperature range			-				- 40 °C ... + 85 °C		
Temperature coefficient of frequency		TC _f **)	-73	ppm/K					

*) measured at: f_N , $f_N + 59$ MHz, $f_N - 59$ MHz

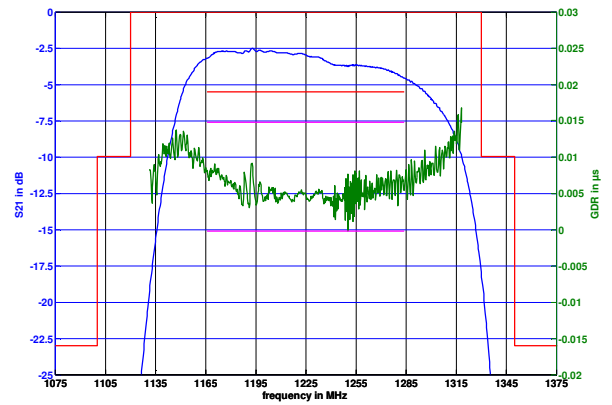
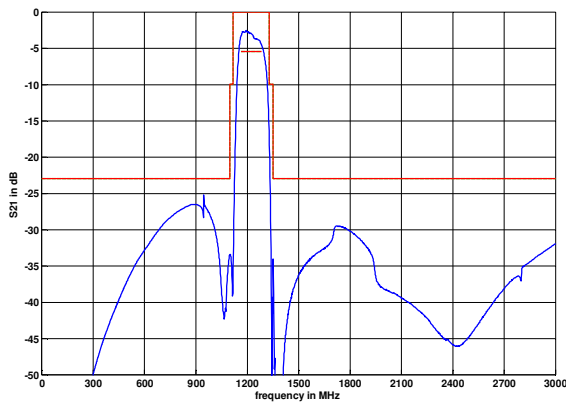
**) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{CAT}(\text{MHz})$

Generated:**Checked / Approved:**

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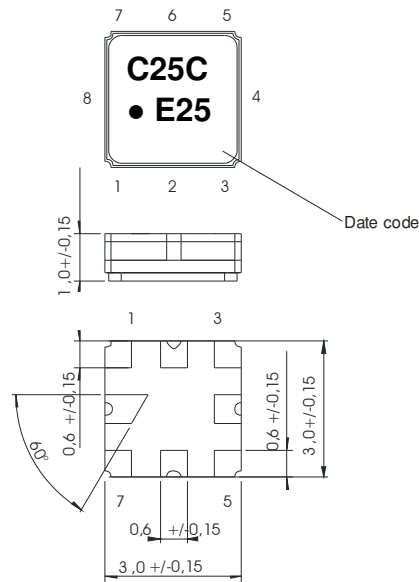
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Filter characteristic



Construction and pin connection

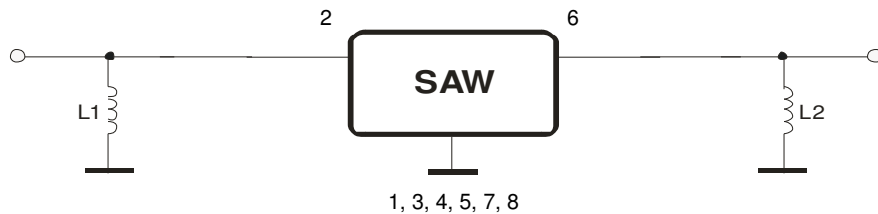
(All dimensions in mm)



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

Date code: Year + week
 E 2014
 F 2015
 G 2016
 ...

50 Ohm 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, see page 4: "Air reflow temperature conditions"

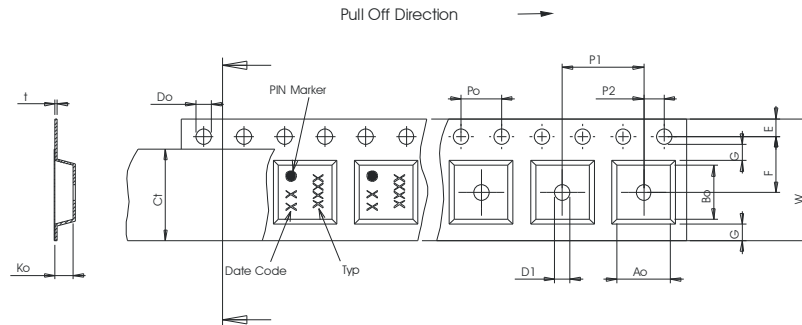
This filter is RoHS compliant (2011/65/EU)

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 |

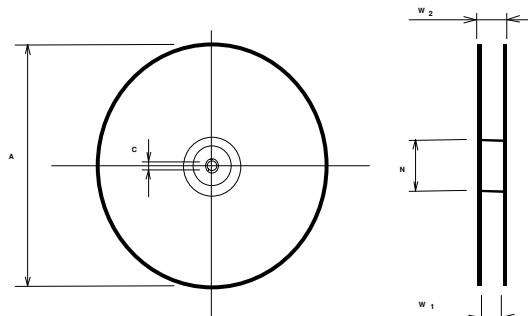
Tape (all dimensions in mm)

- 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 : 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.

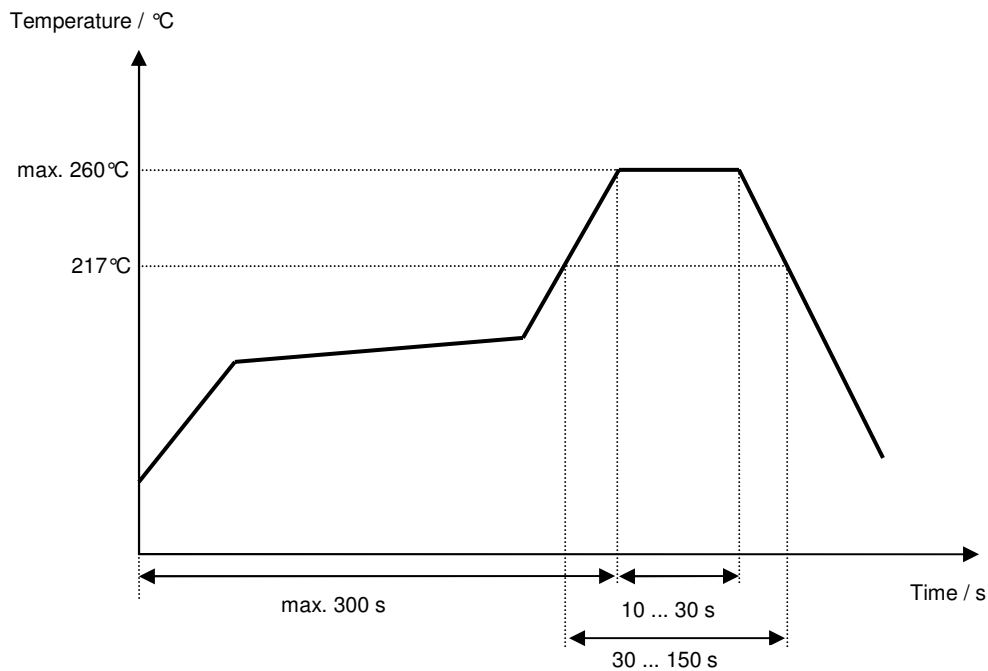
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Air reflow temperature conditions

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	Noack	16.01.2014
1.1	- Generation of filter specification - Add typical values and filter characteristic	Noack	18.06.2014