

Vectron International**Filter specification****TFS1307****1/5****Measurement condition**

Ambient temperature T_A :	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	50 Ω	
Output:	50 Ω	

Characteristics

Remark:

The nominal frequency f_N is fixed at 1307.45 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 1307 is the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)	a_e	3.0	dB	max.	5.0	dB
Nominal frequency	f_N	-			1307.45	MHz
Centre frequency	f_C	1307.45	MHz			
Bandwidth	BW					
3 dB		73	MHz		-	
Relative attenuation	a_{rel}					
@ 163.433 MHz		76	dB	min.	50	dB
@ 326.863 MHz		80	dB	min.	50	dB
@ 490.295 MHz		69	dB	min.	50	dB
@ 653.726 MHz		60	dB	min.	50	dB
@ 817.158 MHz		54	dB	min.	50	dB
@ 980.589 MHz		50	dB	min.	47	dB
Input power level		-		max.	10	dBm
Operating temperature range	OTR	-			-40 °C ... +90 °C	
Storage temperature range		-			-45 °C ... +95 °C	
Temperature coefficient of frequency	TC_f^*	-73	ppm/K			

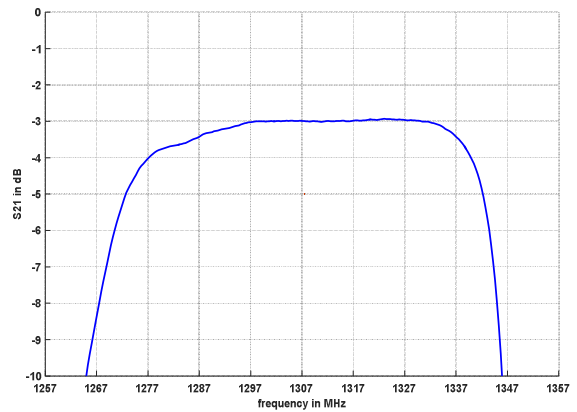
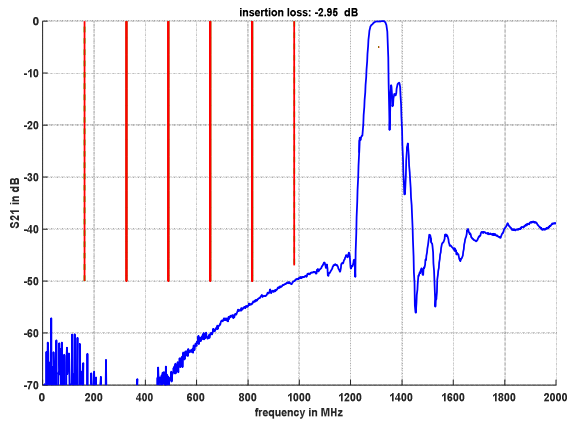
*) $\Delta f = TC_f(T - T_A)f_N$. No relevant temperature-induced charge generation.

Generated:**Checked / Approved:**

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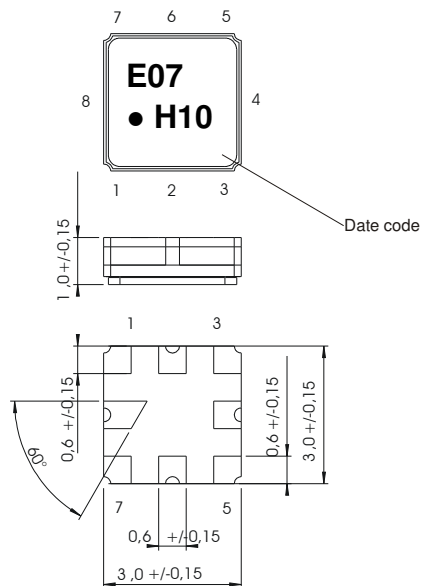
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Filter characteristic



Construction and pin connection

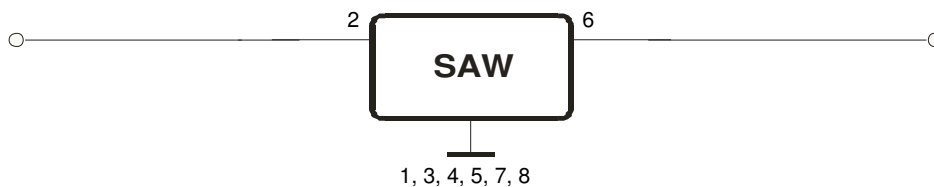
(All dimensions in mm)



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

Date code: Year + week
 H 2016
 J 2017
 K 2018
 ...

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 68 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 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;
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

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

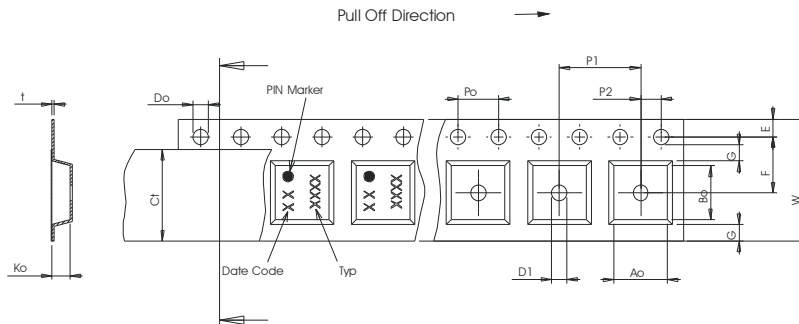
Packing

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;

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

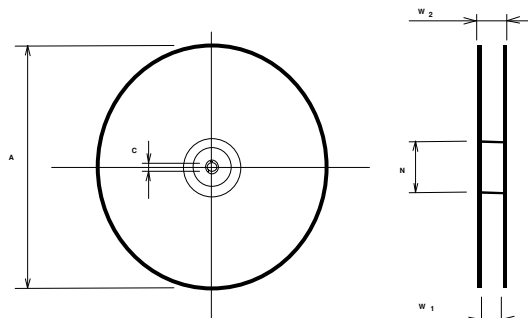
Tape (all dimensions in mm)

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.

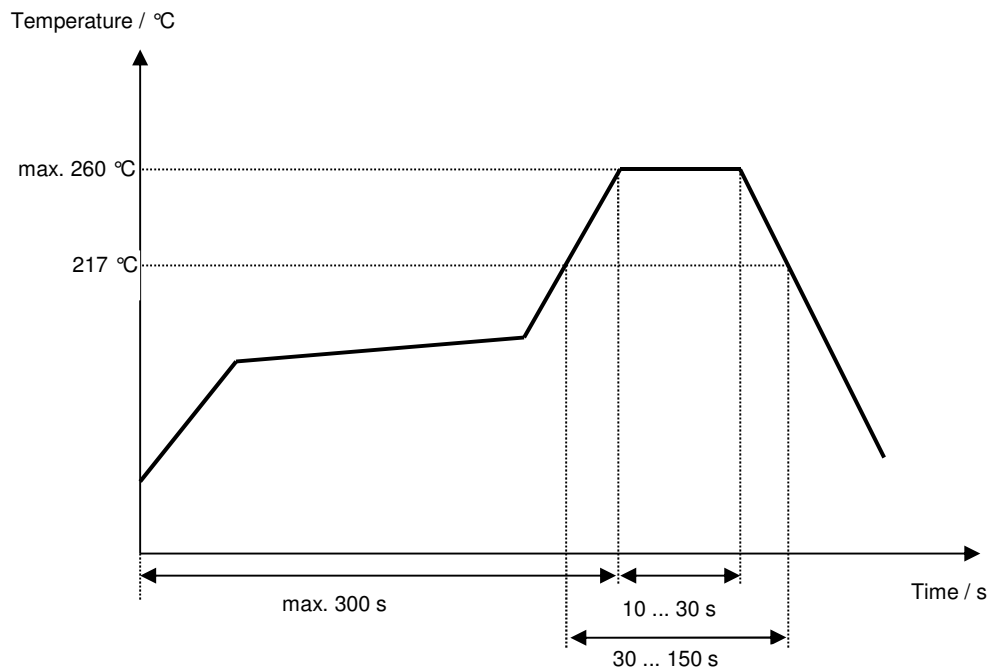
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Air reflow temperature conditions

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.	Ngnintedem	15.01.2016
2.0	Generation of filter specification. Relaxation at 980.59 MHz from 50 dB to 47 dB.	Ngnintedem	01.03.2016
2.1	Plots reworked.	Ngnintedem	02.03.2016