

Vectron International**Filter specification****TFS 1000****1/5****Measurement condition**

Ambient temperature:	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 1000 MHz. The insertion loss a_e is defined as loss value determined at f_N . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit		
Insertion loss	a_e	2.3	dB	max.	5.0	dB
Nominal frequency	f_N	-			1000	MHz
Centre frequency	f_c	1000	MHz		-	
Bandwidth	BW					
3 dB		35.29	MHz		-	
Absolute attenuation	a_{abs}					
@ 125 MHz		80	dB	min.	50	dB
@ 250 MHz		70	dB	min.	50	dB
@ 375 MHz		61	dB	min.	50	dB
@ 500 MHz		56	dB	min.	50	dB
@ 625 MHz		52	dB	min.	40	dB
@ 750 MHz		49	dB	min.	40	dB
@ 875 MHz		46	dB	min.	40	dB
Operating temperature range	OTR	-		-40 °C ... + 90 °C		
Storage temperature range		-		-45 °C ... + 95 °C		
Temperature coefficient of frequency	TC_f *	-46	ppm/K		-	

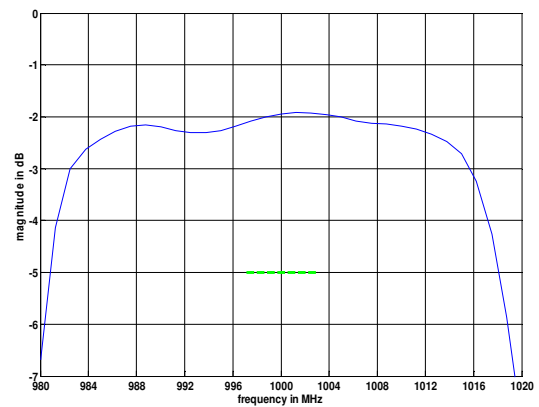
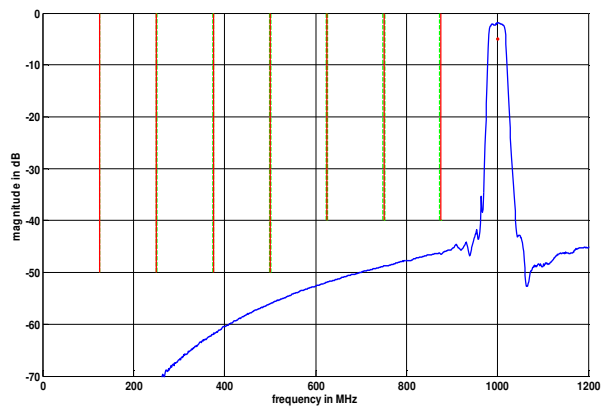
*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

Generated:**Checked / Approved:**

Vectron International GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@vectron.com

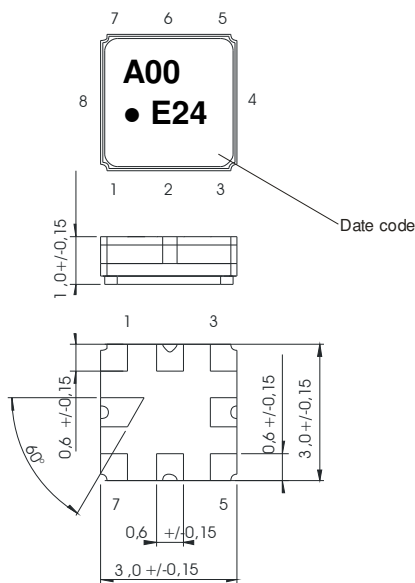
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Filter characteristic



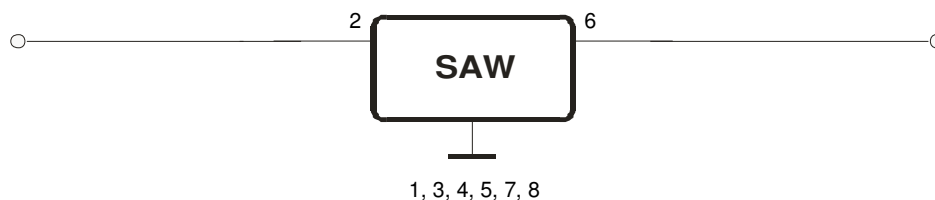
Construction and pin connection

(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 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)

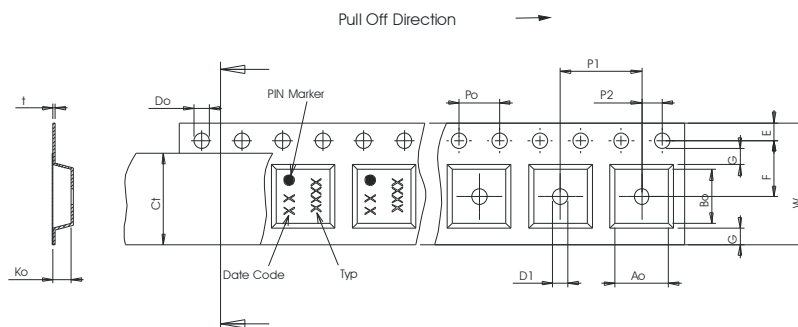
Packing

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;

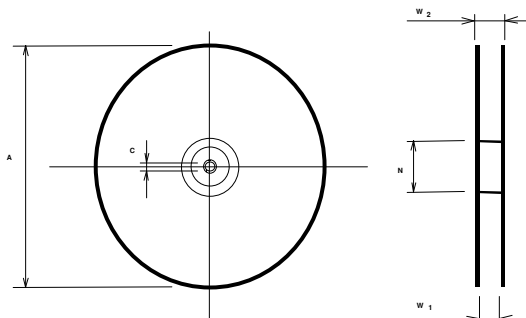
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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



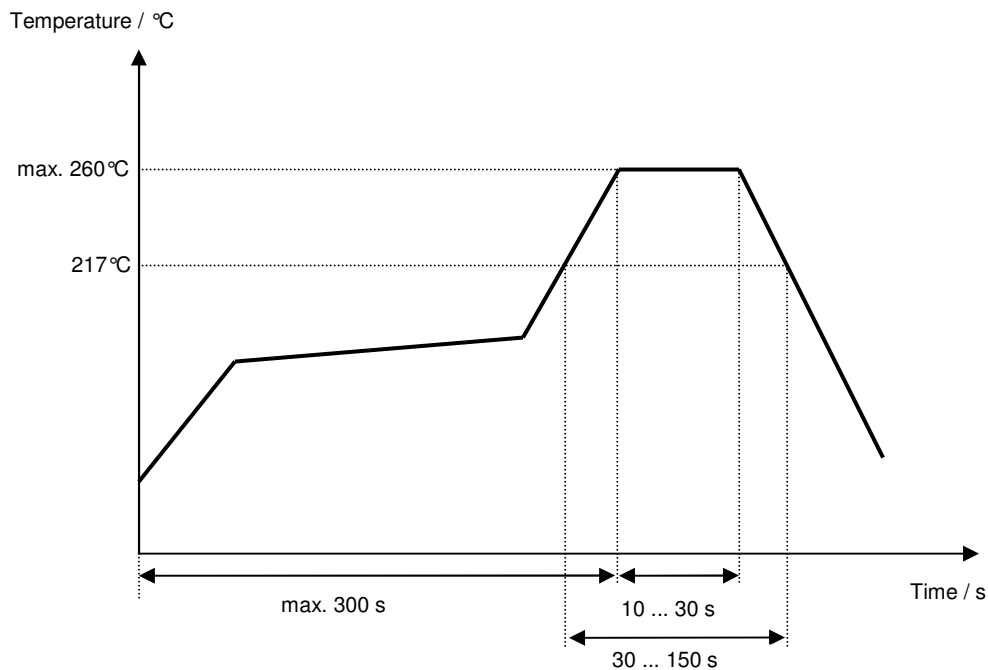
The minimum bending radius is 45 mm.

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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

Vectron International**Filter specification****TFS 1000****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of development specification	S. Channaa	06.10.2009
1.1	Change insertion loss and attenuation	S. Channaa	21.10.2009
1.2	Add typical values and filter characteristic Change stability, generation of filter specification	S. Channaa	11.03.2010
2.0	Changed pull off direction from reel	Schönbein	29.05.2012
2.1	Filter characteristics plots corrected	Schönbein	12.06.2014

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