

Vectron International**Filter specification****TFS 672****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	150 Ω 0 pF	
Output:	150 Ω 0 pF	

Characteristics

Remark:

The insertion loss a_e is defined as loss value determined at f_N . The nominal frequency f_N is fixed at 672.00 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 (reference level)	a_e	2.5	dB	max.	4.5	dB
Nominal frequency	f_N	-			672.00	MHz
Centre frequency	f_C	672.00	MHz		-	
Bandwidth 3 dB	BW	23	MHz		-	
Absolute attenuation @ 112 MHz ... 448 MHz 224 MHz ... 560 MHz 448 MHz ... 896 MHz 784 MHz ... 1232 MHz 896 MHz ... 3000 MHz	a_{abs}	65 64 62 62 58 46	dB dB dB dB dB dB	min. min. min. min. min. min.	55 60 57 57 52 30	dB dB dB dB dB dB
Input power level		-		max.	0	dBm
Operating temperature range	OTR	-		-40 °C ...	+85 °C	
Storage temperature range		-		-55 °C ...	+125 °C	
Temperature coefficient of frequency	TC_f^*	-73	ppm/K		-	

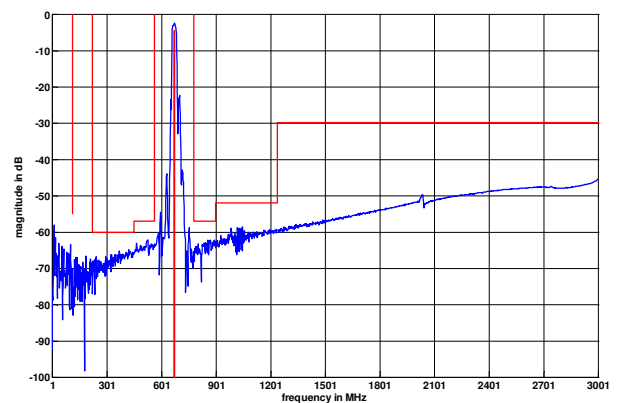
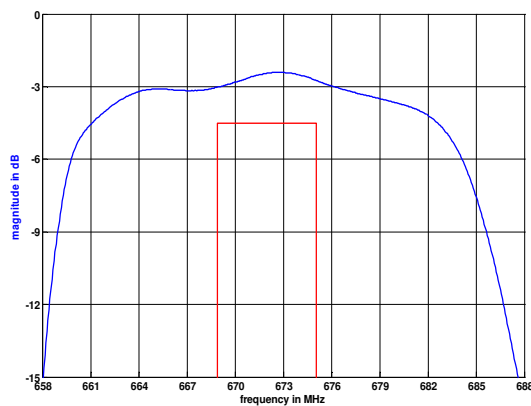
*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{CAT}(\text{MHz})$. Material: LiNbO3_64° black, so in principle pyrofree.

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

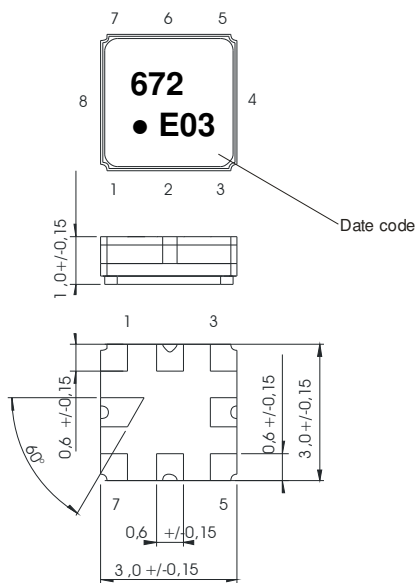
Vectron International GmbH reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Filter characteristic



Construction and pin connection

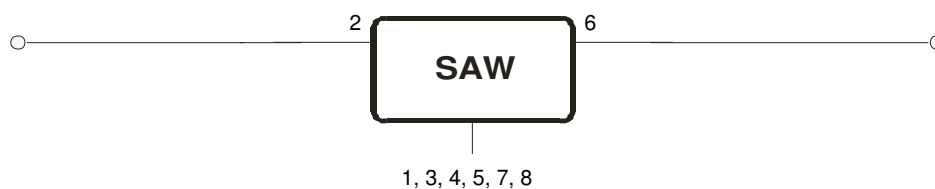
(All dimensions in mm)



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
...	

150 Ω Test circuit



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

Vectron International GmbH reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

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 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)

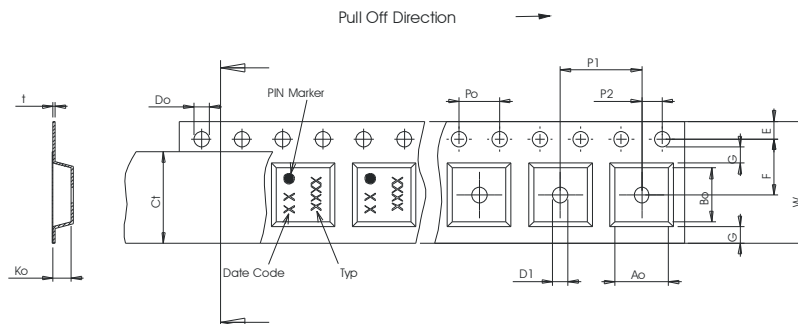
Packing

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;

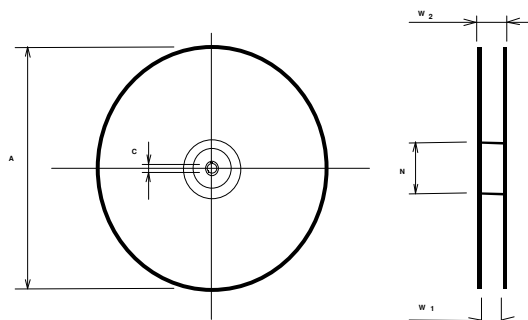
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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



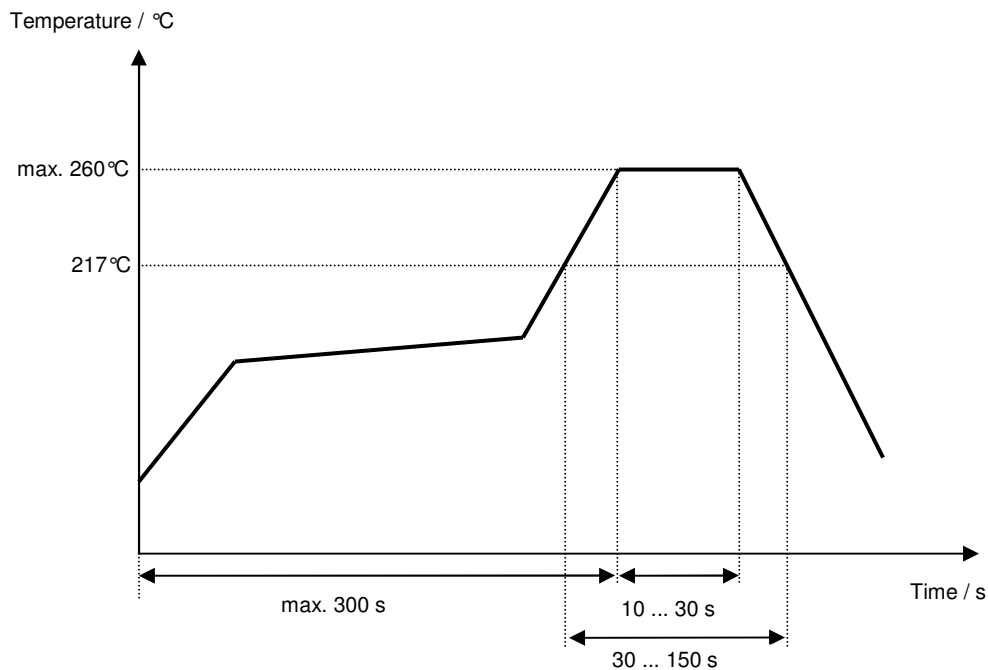
The minimum bending radius is 45 mm.

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

Vectron International GmbH reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

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 672****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of development specification	Strehl	13.11.2006
1.1	Generation of filter specification Added typical values Changed absolute attenuation tolerance scheme Added filter characteristic	Martens	13.12.2006
1.2	Changed remark	Martens	15.12.2006
2.0	Changed pull off direction from reel	Schönbein	11.05.2012
2.1	Remark on pyrofree material added to data table	Schönbein	25.04.2013
2.2	Maximum input power updated	Kortenbeutel	16.01.2014