

Vectron International**Filter specification****TFS 748****1/5****Measurement condition**

Ambient temperature:	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 748,0 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		a_e	3,0 dB	max.	4,0	dB
Nominal frequency		f_N			748,0	MHz
Passband		PB		f_N ±	20,0	MHz
Pass band variation			1,3 dB	max.	2,0	dB
Absolute attenuation		a_{abs}				
100 MHz ... 658 MHz			57 dB	min.	32	dB
658 MHz ... 703 MHz			22 dB	min.	17	dB
793 MHz ... 838 MHz			20 dB	min.	17	dB
838 MHz ... 2000 MHz			42 dB	min.	32	dB
Group delay ripple within PB			15 ns	max.	50	ns
Phase linearity within PB **			0,2 °	max.	2	°rms
Return loss within PB			16 dB	min.	10	dB
Input power level			-	max.	0	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	-		

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

**) over any 1,25 MHz continuous bandwidth within passband

Generated:**Checked / Approved:**

Vectron International GmbH & Co. KG

Potsdamer Straße 18

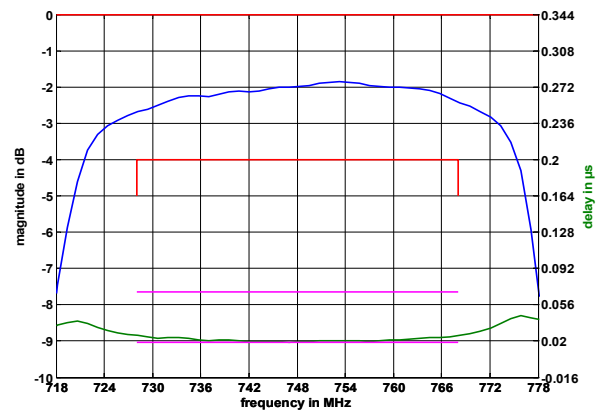
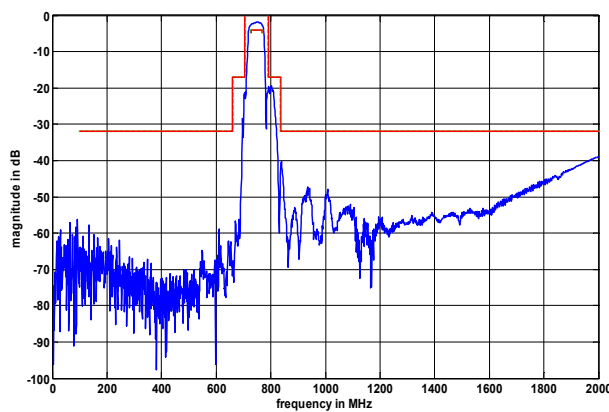
D 14 513 TELTOW / Germany

Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30

E-Mail: tft@vectron.com

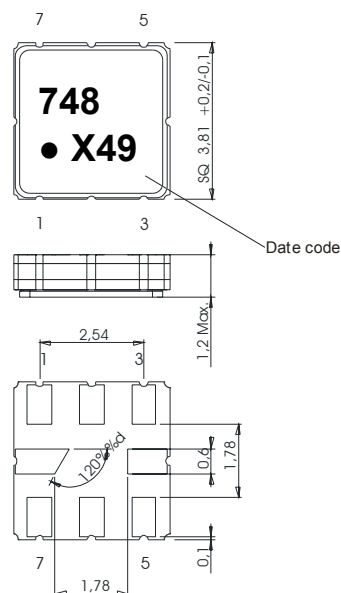
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Filter characteristic



Construction and pin connection

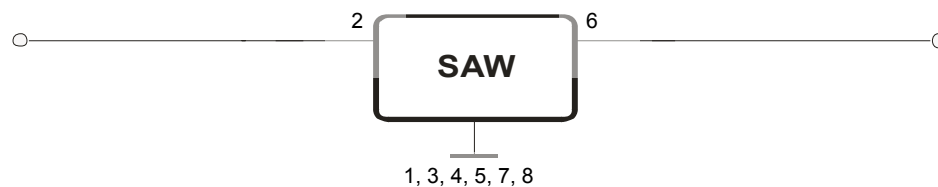
(All dimensions in mm)



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

Date code: Year + week
 X 2009
 A 2010
 B 2011
 ...

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 plan, 3 plans;
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 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. ESD MIL-STD-883E using coupling network of ISO 10605 and EN 6100-4-2
HBM:250V; CDM:V;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

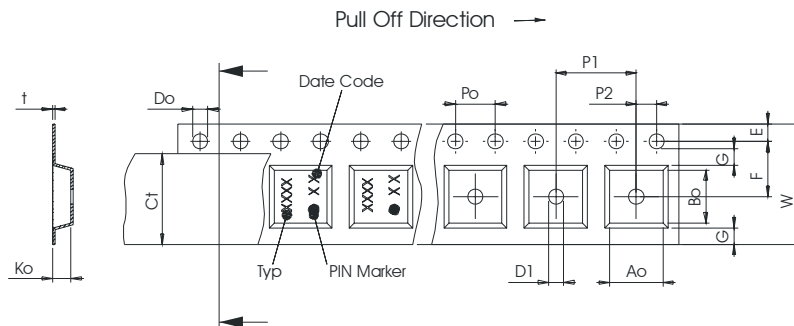
Packing

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;

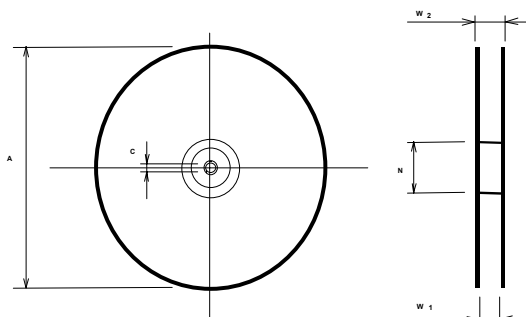
max. pieces of filters per reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 12,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 5,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 8,00 ± 0,1
D1(min)	: 1,50
Ao	: 4,30 ± 0,1
Bo	: 4,30 ± 0,1
Ct	: 9,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 8,4 +1,5/-0
W2(max)	: 14,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

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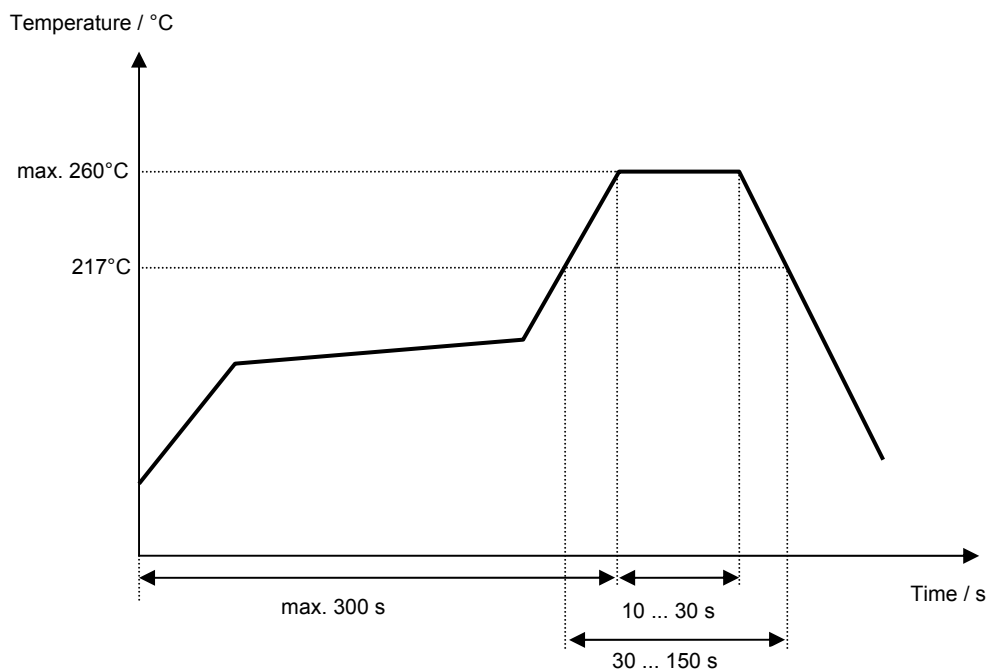
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30

E-Mail: tft@vectron.com

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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 GmbH & Co. KG****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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Vectron International**Filter specification****TFS 748****5/5****History**

Version	Reason of changes	Name	Date
1.0	- Generation of development specification	Noack	14.08.2009
1.1	- Generation of filter specification - add typical values and filter characteristic	Noack	30.11.2009
1.2	- Change packing (tape and reel)	Noack	16.02.2010

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