Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance:
Input: 100 Ω
Output: 100 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 1228.8 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed over the whole operating temperature range. The frequency shift of the filter within 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	1.8	dB	max.	3.0	dB
Nominal frequency	f_N				1228.8	MHz
Passband	PB			f_N	± 12.5	MHz
Pass band variation		0.8	dB	max.	1.5	dB
Absolute attenuation	a_{abs}					
0.3 MHz … 1152 MHz		34	dB	min.	30	dB
1152 MHz … 1191 MHz		35	dB	min.	20	dB
1267 MHz … 1306 MHz		42	dB	min.	20	dB
1306 MHz … 3000 MHz		34	dB	min.	30	dB
Input power level in PB		-		max.	10	dBm
Operating temperature range	OTR	-			- 40 °C ... + 85 °C	
Storage temperature range		-			- 45 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f *	-46	ppm/K			

*) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_o) \times f_{CAT}$ (MHz)

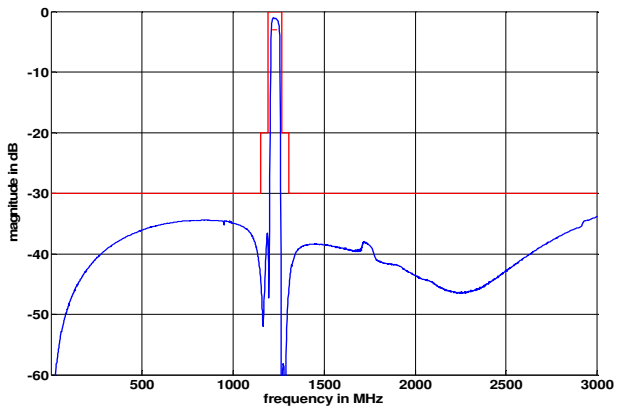
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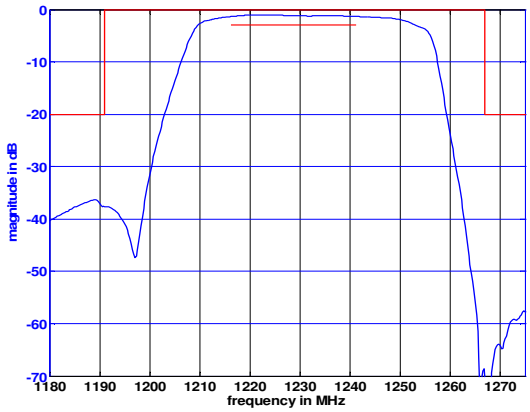
Checked / Approved:

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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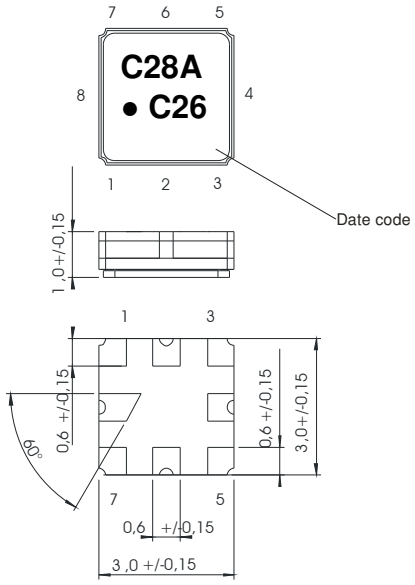
Filter characteristics





Construction and pin connection

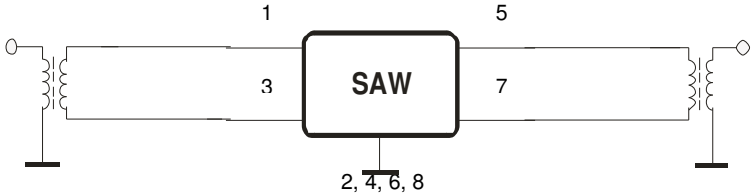
(All dimensions in mm)



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

Date code:	Year + week
C	2012
D	2013
E	2014
...	

50 Ohm Test circuit



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Stability characteristics, reliability

After the following tests the filter shall meet the whole specification:

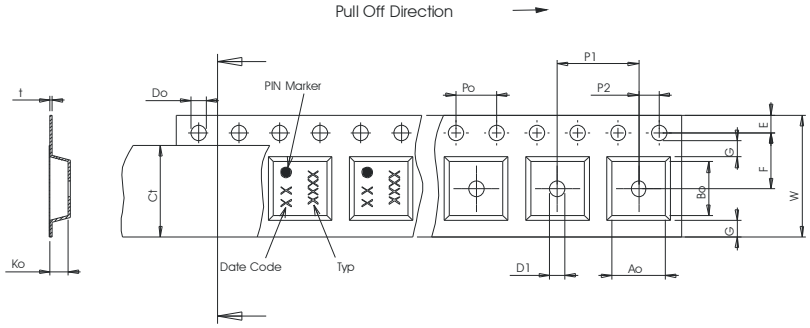
1. Shock:	500g, 1 ms, half sine wave, 3 shocks each plane; DIN IEC 68 T2 - 27
2. Vibration:	10 Hz to 500 Hz, 0,35 mm or 5 g respectively, 1 octave per min, 10 cycles per plan, 3 plans; DIN IEC 68 T2 - 6
3. Change of temperature:	-55 °C to 125°C / 30 min. each / 10 cycles DIN IEC 68 part 2 – 14 Test N
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	ANSI/ESD S20.20-1999**,** class 1A for HBM
6. Moisture	IPC/JEDEC J-STD-20 MSL classifications, MSL 1

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

Packing

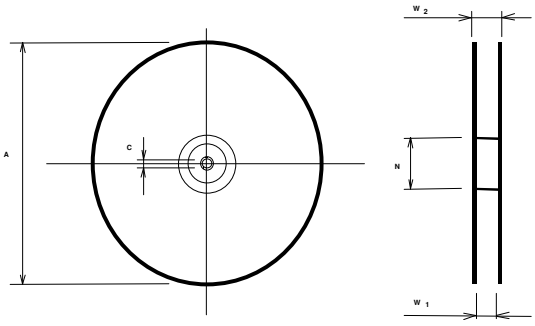
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters per reel:	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.

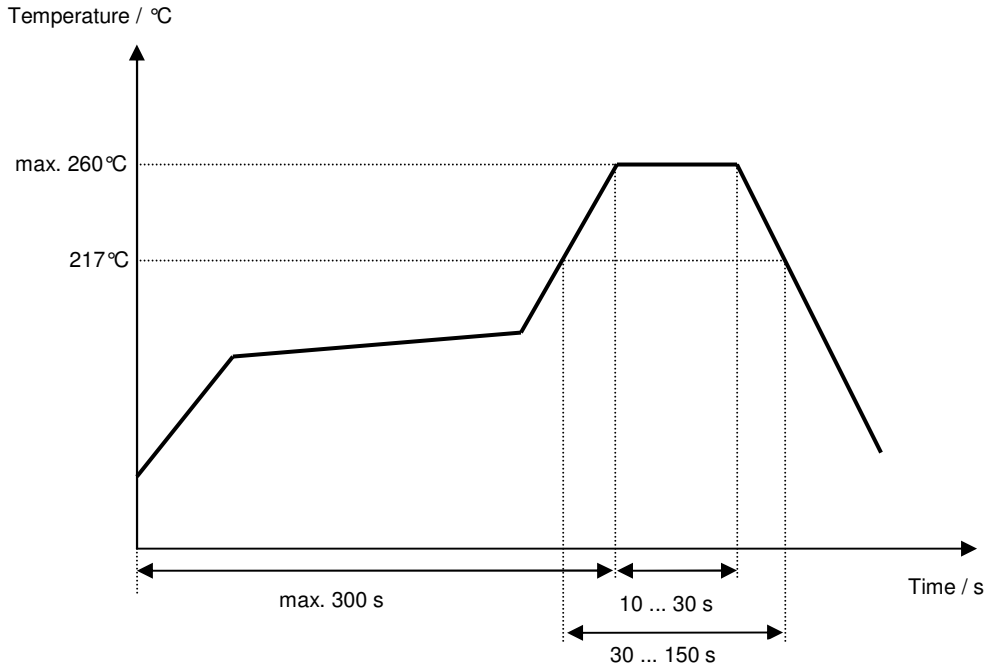
Vectron International GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@vectron.com

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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
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History

Version	Reason of Changes	Name	Date
1.0	Generation of development specification.	Schönbein	08.06.12
1.1	Update package drawing+ reliability requirements	Schönbein	18.06.12
1.2	Changed pinning back to spec version 1.0	Schönbein	19.06.12
1.3	Generation of filter specification	S.Springfeldt	27.06.12

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