

Vectron International**Filter specification****TFS 2457****1/5****Measurement condition**

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

Characteristics

Remark:

The attenuation at the nominal frequency f_N is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 2457.6 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} and insertion loss a_e 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 | 4.0 | dB | max. | 5.0 | dB |
| Nominal frequency | f_N | - | | | 2457.6 | MHz |
| Centre frequency | f_C | 2429.6 | MHz | | | |
| Bandwidth | BW | | | | | |
| 3 dB | | 171.4 | MHz | | - | |
| Absolute attenuation | a_{abs} | | | | | |
| @ 1230.46 MHz | | 45 | dB | min. | 35 | dB |
| @ 3691.40 MHz | | 37 | dB | min. | 33 | dB |
| @ 4921.87 MHz | | 30 | dB | min. | 25 | dB |
| @ 6152.33 MHz | | 25 | dB | min. | 10 | dB |
| @ 7382.81 MHz | | 16 | 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 * | -72 | ppm/K | | | |

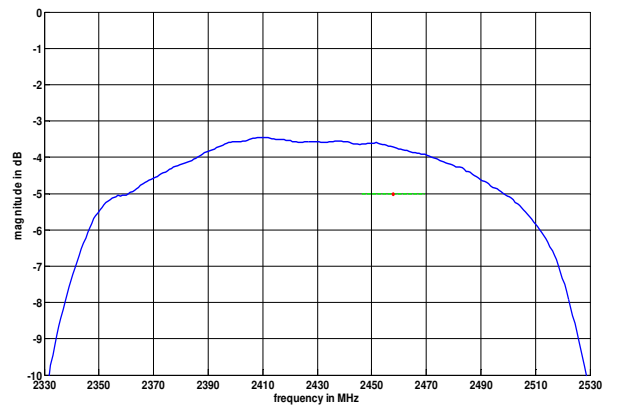
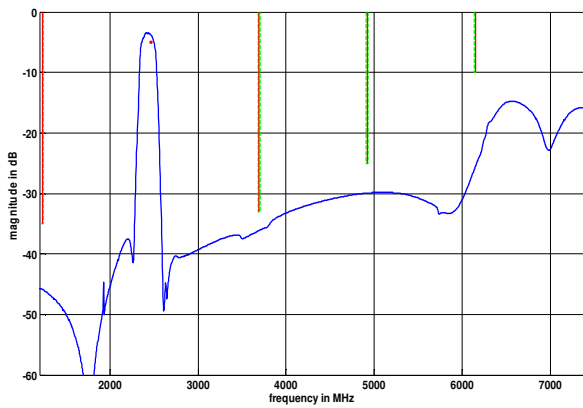
*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$. No relevant temperature-induced charge generation.

Generated:**Checked / Approved:**

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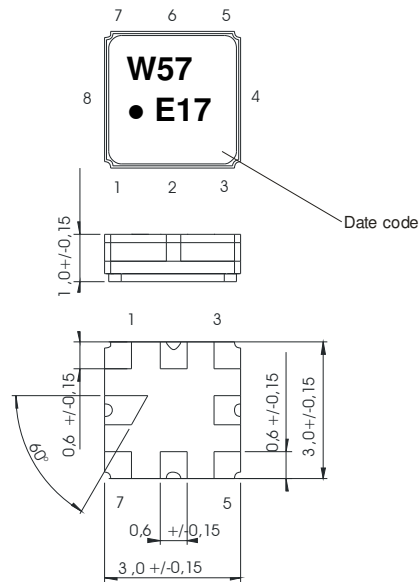
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Filter characteristic



Construction and pin connection

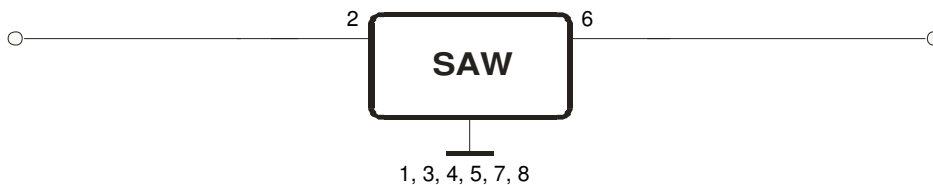
(All dimensions in mm)



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

Date code: Year + week
 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)

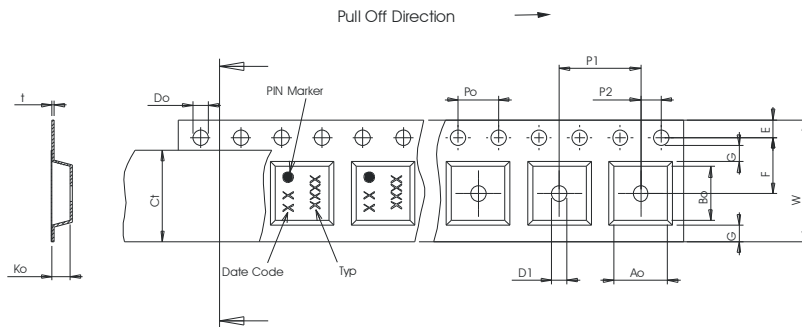
Packing

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

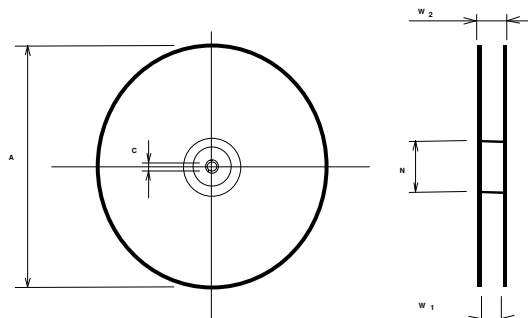
Tape (all dimensions in mm)

- 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 : 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.

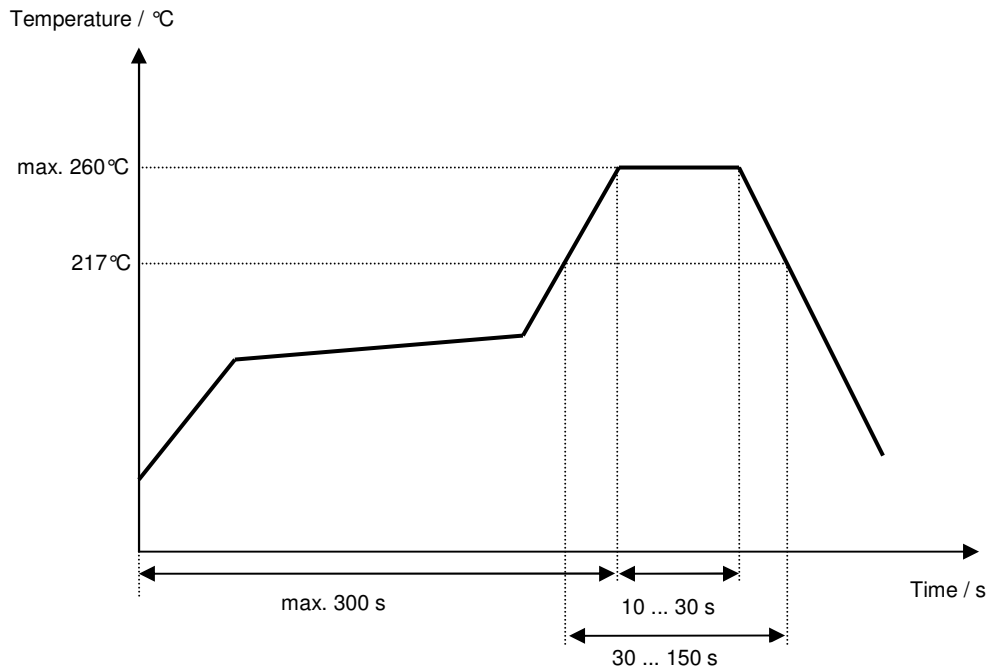
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Air reflow temperature conditions

| 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. | Channaa | 07.03.2011 |
| 2.0 | Typo in 3691,4MHz corrected, add typical values. Add filter characteristic, generation of filter specification. | Channaa | 30.06.2011 |
| 2.1 | Change remark. | Channaa | 23.12.2011 |
| 2.2 | Remark corrected. | Molke | 14.12.2012 |
| 2.3 | Remark changed. Filter characteristic updated. | Schönbein | 24.04.2014 |

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