

Vectron International**Filter specification****TFS 1080F****1/5****Measurement condition**

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

Characteristics

Remark:

The maximum attenuation in the passband is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1080MHz 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 in PB | a_e | 4.5 | dB | max. | 5 | dB |
| Nominal frequency | f_N | | | | 1080 | MHz |
| Passband | PB | | | $f_N \pm$ | 6 | MHz |
| Passband variation | | 2 | dB | max. | 3 | dB |
| Pass band ripple | | 0.2 | dB | max. | 1.5 | dB |
| Absolute attenuation | a_{abs} | | | | | |
| 700 MHz ... 1050 MHz | | 45 | dB | min. | 40 | dB |
| 1050 MHz ... 1060 MHz | | 43 | dB | min. | 30 | dB |
| 1100 MHz ... 1105 MHz | | 45 | dB | min. | 30 | dB |
| 1105 MHz ... 1300 MHz | | 55 | dB | min. | 40 | dB |
| Absolute group delay | | 60 | ns | max. | 100 | ns |
| Group delay ripple within passband | | 40 | ns | max. | 100 | ns |
| Input power level in PB | | | | max. | 0 | dBm |
| Operating temperature range | OTR | | | | - 40 °C ... + 65 °C | |
| Storage temperature range | | | | | - 50 °C ... + 70 °C | |
| Temperature coefficient of frequency | TC_f *) | -42 | ppm/K | | | |

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

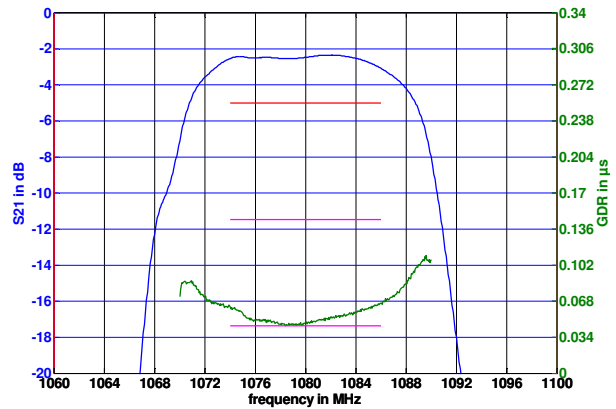
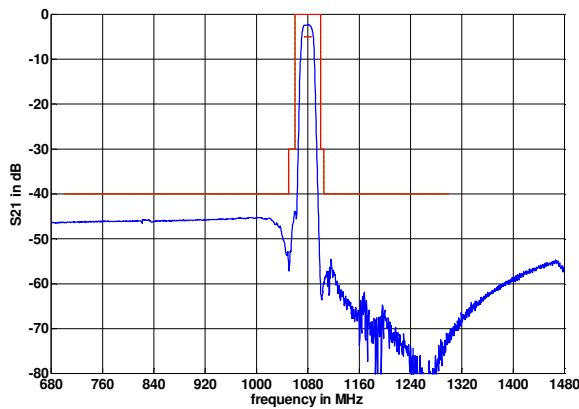
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Checked / Approved: _____

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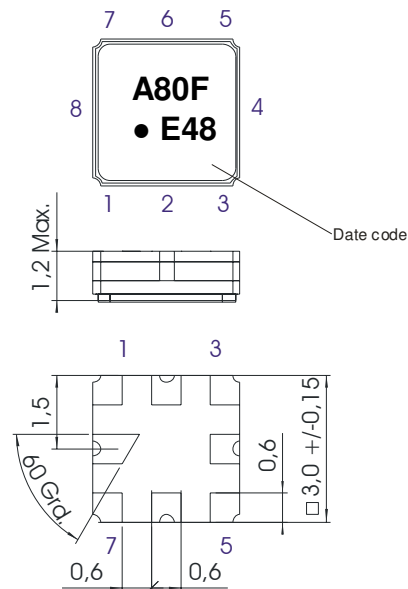
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Filter characteristic



Construction and pin connection

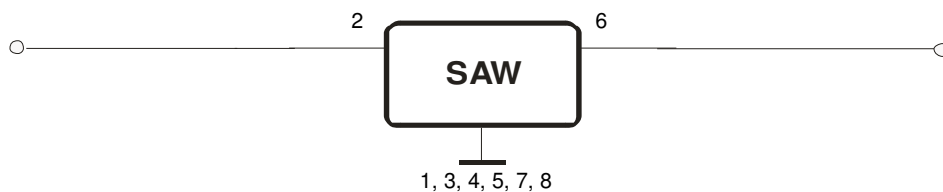
(All dimensions in mm)



- 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 Ohm Test circuit



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Stability characteristics, reliability

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

- 1. Shock: 500g, 1ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
- 2. Vibration: 10Hz to 500Hz, 0.35 mm or 5g 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 / 15min. 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)

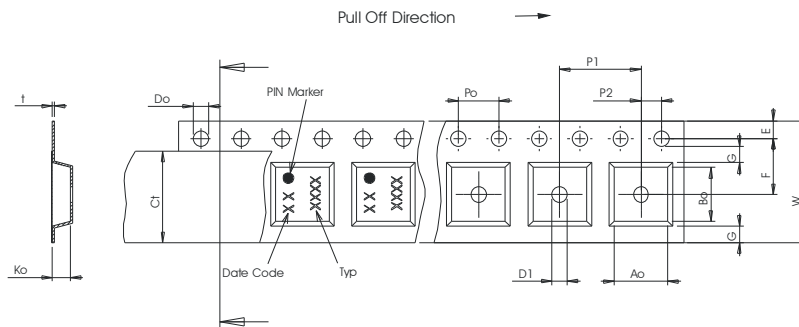
Packing

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

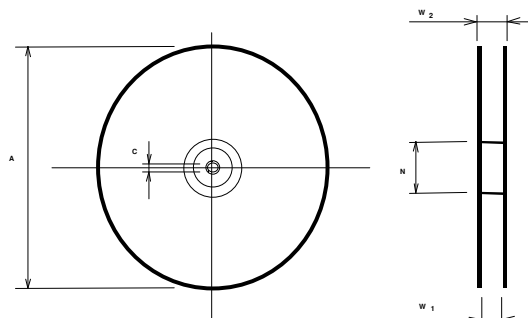
Tape (all dimensions in mm)

- 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.

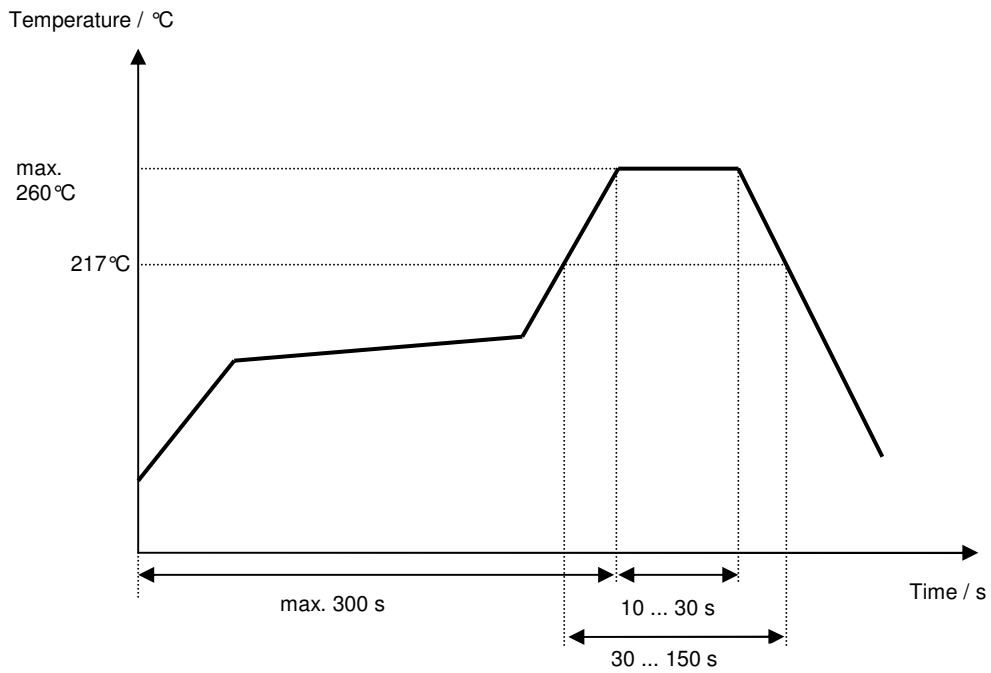
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Air reflow temperature conditions

| 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



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History

| Version | Reason of Changes | Name | Date |
|----------------|---|---------------|-------------|
| 1.0 | Generation of development specification | S.Springfeldt | 12.09.2014 |
| 1.1 | Generation of filter specification | S.Springfeldt | 28.11.2014 |