

Vectron International

Filter specification

TFS 433AH

Measurement condition

| | | |
|-----------------------------|--------------|---------|
| Ambient temperature T_A : | 23 | °C |
| Input power level: | 0 | dBm |
| Terminating impedance: | | |
| Input: | 190 Ω | -3.4 pF |
| Output: | 190 Ω | -3.4 pF |

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS 433AH is the minimum of the pass band attenuation a_{min} . The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e . The centre frequency f_C is the arithmetic mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the insertion loss a_e . The nominal frequency f_N is fixed at 433.92 MHz without any tolerance. The given values for the relative attenuation a_{rel} have to be achieved at the frequencies given below even if the centre frequency f_C is shifted due to the temperature coefficient of frequency TC_f in the operating temperature range and due to a production tolerance for the centre frequency f_C .

| D a t a | typ. value | | tolerance / limit | | |
|---|-------------------|--------------------------|--------------------------|------|-----------------|
| Insertion loss (reference level) | a_e | 2.6 dB | | max. | 3.5 dB |
| Nominal frequency | f_N | - | | | 433.92 MHz |
| Centre frequency | f_C | 433.92 MHz | | | - |
| Bandwidth | BW | | | | |
| 2 dB | | 700 kHz | | min. | 400 kHz |
| 3 dB | | 800 kHz | | min. | 440 kHz |
| 6 dB | | 955 kHz | | min. | 560 kHz |
| Relative attenuation | a_{rel} | | | | |
| f_N ... $f_N \pm 200.00$ kHz | | - dB | | max. | 2.0 dB |
| $f_N \pm 200.00$ kHz ... $f_N \pm 220.00$ kHz | | - dB | | max. | 3.0 dB |
| $f_N \pm 220.00$ kHz ... $f_N \pm 280.00$ kHz | | - dB | | max. | 6.0 dB |
| $f_N - 1.0$ MHz ... $f_N - 5.92$ MHz | | 17 dB | | min. | 15 dB |
| $f_N - 5.92$ MHz ... $f_N - 19.92$ MHz | | 42 dB | | min. | 40 dB |
| $f_N - 19.92$ MHz ... $f_N - 423.92$ MHz | | 55 dB | | min. | 45 dB |
| $f_N + 1.00$ MHz ... $f_N + 8.00$ MHz | | 14 dB | | min. | 10 dB |
| $f_N + 116.08$ MHz ... $f_N + 566.00$ MHz | | 60 dB | | min. | 45 dB |
| Input power level | | - | | max. | 0 dBm |
| Operating temperature range | OTR | - | | | -25 ... +80 °C |
| Storage temperature range | | - | | | -55 ... +125 °C |
| Frequency inversion temperature | | 10 °C | | | - |
| Temperature coefficient of frequency | TC_f *) | -0.04 ppm/K ² | | | - |

*) $\Delta f = TC_f(T - T_0)^2 f_N$

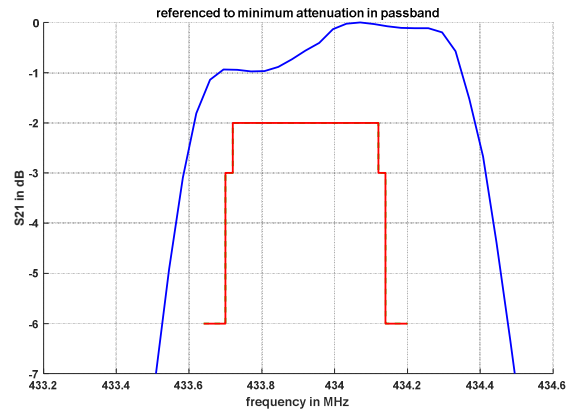
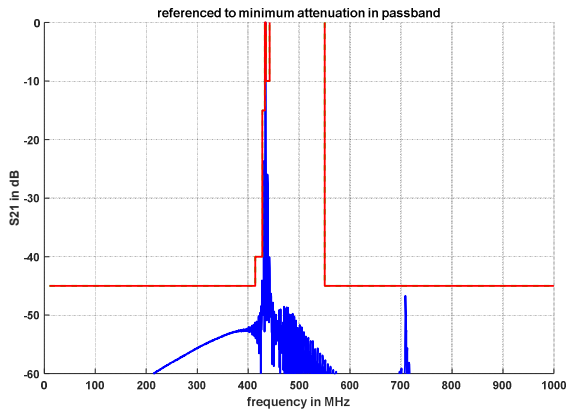
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Checked / Approved:

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

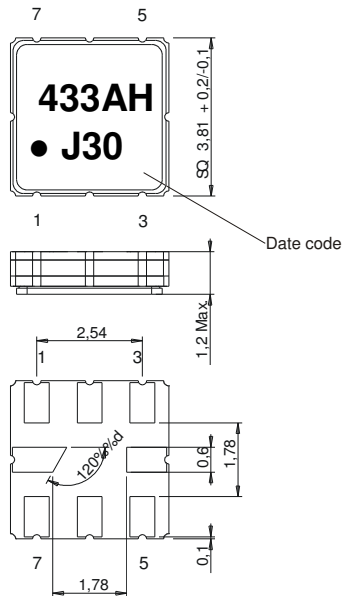
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Filter characteristic



Construction and pin connection

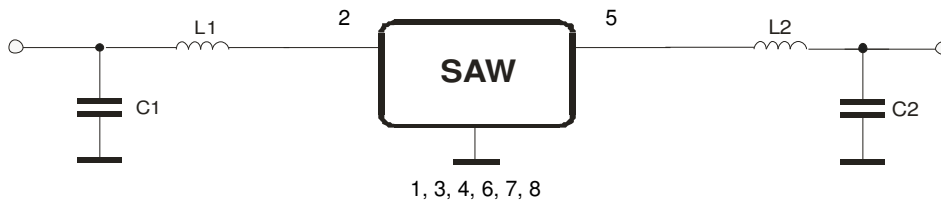
(All dimensions in mm)



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

Date code: Year + week
 J 2017
 K 2018
 L 2019
 ...

50 Ω Test circuit



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Stability characteristics, reliability

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

1. Shock: 500 g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 60068 T2 - 27
2. Vibration: 10 Hz to 2000 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 60068 T2 - 6
3. Change of temperature: -55 °C to 125 °C / 15 min. each / 100 cycles
DIN IEC 60068 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. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

This filter is RoHS compliant (2011/65/EU)

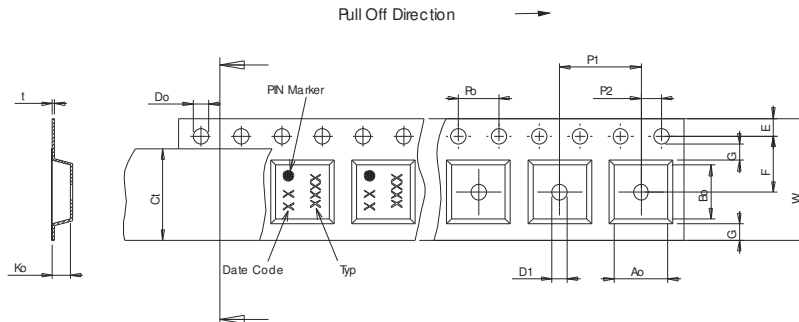
Packing

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;

| | |
|---|-------------|
| reel of empty components at start: | min. 300 mm |
| reel of empty components at start including leader: | min. 500 mm |
| trailer: | min. 300 mm |

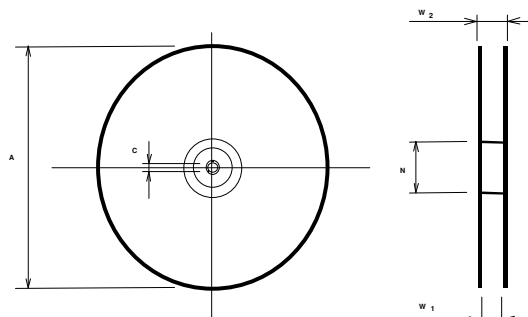
Tape (all dimensions in mm)

- 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 : 9.2 ±0.1
- Ko : 1.80 ±0.1
- t : 0.30 ±0.05



Reel (all dimensions in mm)

- A : 330 or 180
- W1 : 12.4 +2/-0
- W2(max) : 18.40
- N(min) : 50.00
- C : 13.0 +0.5/-0.2



The minimum bending radius is 45 mm.

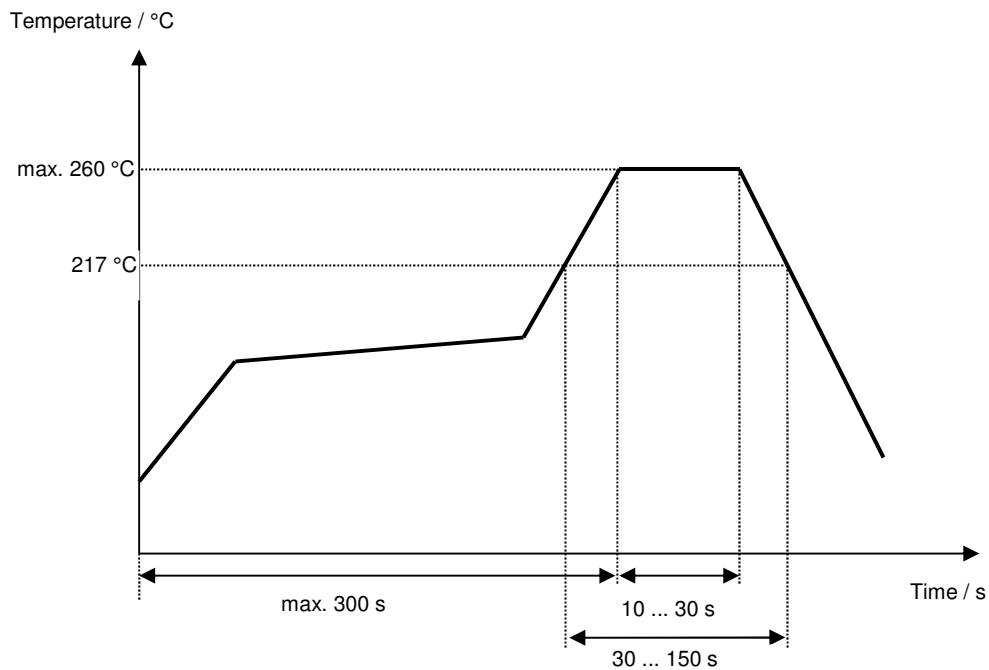
Vectron International GmbH
Potsdamer Straße 18
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Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@vectron.com

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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



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History

| Version | Reason of Changes | Name | Date |
|----------------|--|-------------|-------------|
| 1.0 | Generation of filter specification. | Abutaimah | 08.03.2017 |
| 1.1 | update typos update storage temperature range update tape & reel | Schönbein | 26.07.2017 |

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9