

**Microchip****Filter specification****TFS 1430A****1/5****Measurement condition**

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

**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 1430,0 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   |        |     |
|---------------------------------------------|---------------------|------------|---------------|---------------------|--------|-----|
| <b>Insertion loss</b><br>(reference level)  |                     | $a_e$      | 2,3    dB     | max.                | 3,0    | dB  |
| <b>Nominal frequency</b>                    |                     | $f_N$      | -             |                     | 1430,0 | MHz |
| <b>Passband</b>                             |                     | PB         | -             | min.                | 30,0   | MHz |
| <b>Absolute attenuation</b>                 |                     | $a_{abs}$  |               |                     |        |     |
| 1                                           | MHz ... 1210    MHz |            | 42    dB      | min.                | 35     | dB  |
| 1210                                        | MHz ... 1375    MHz |            | 44    dB      | min.                | 10     | dB  |
| 1485                                        | MHz ... 2000    MHz |            | 50    dB      | min.                | 10     | dB  |
| <b>Input power level</b>                    |                     |            | -             | max.                | 20 *   | dBm |
| <b>Operating temperature range</b>          |                     | OTR        | -             | - 40 °C ... + 95 °C |        |     |
| <b>Storage temperature range</b>            |                     |            | -             | - 40 °C ... + 95 °C |        |     |
| <b>Temperature coefficient of frequency</b> |                     | $TC_f$ **  | - 41    ppm/K | -                   |        |     |

\*) This power level is only allowed for short term operation (cycle time 1:1000), the max. input power for continuous operation is max.10dBm only

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

**Generated:**

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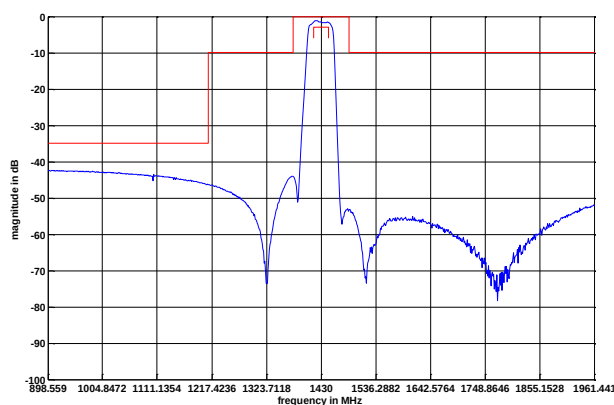
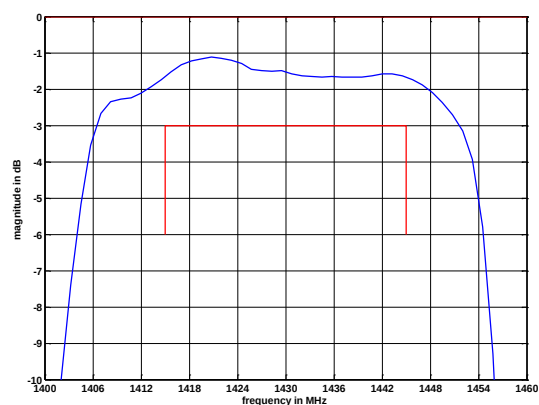
**Checked / Approved:**

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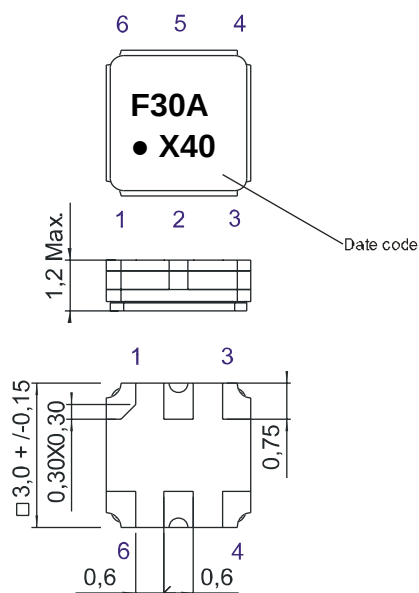
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## Filter characteristic



## Construction and pin connection

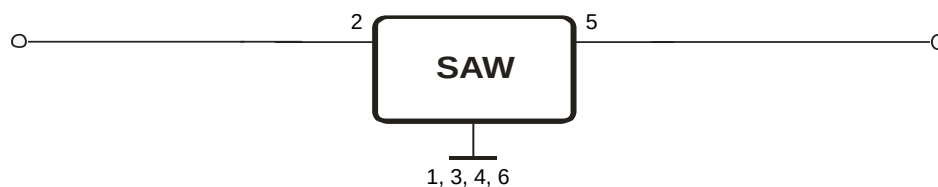
(All dimensions in mm)



|   |        |
|---|--------|
| 1 | Ground |
| 2 | Input  |
| 3 | Ground |
| 4 | Ground |
| 5 | Output |
| 6 | 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)

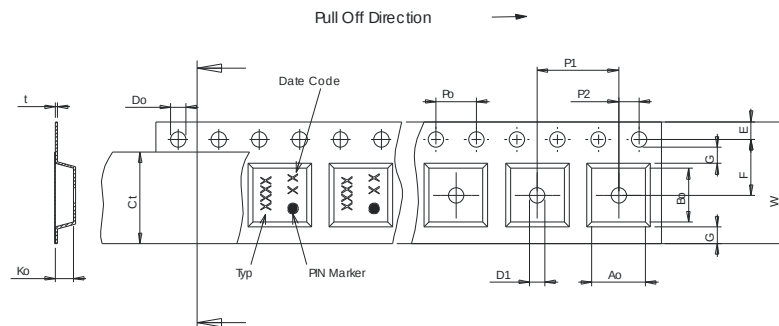
**Packing**

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;

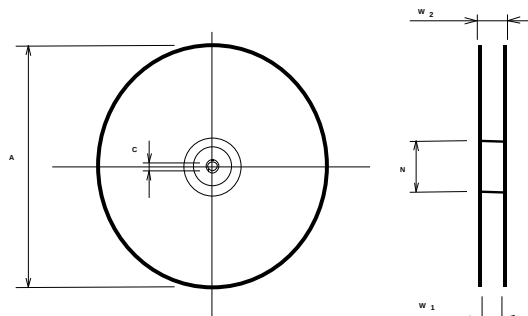
max. pieces of filters per reel: 9000  
reel of empty components at start: min. 300 mm  
reel of empty components at start including leader: min. 500 mm  
trailer: min. 300 mm

**Tape (all dimensions in mm)**

|         |                |
|---------|----------------|
| W       | : 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      | : 5,5 ± 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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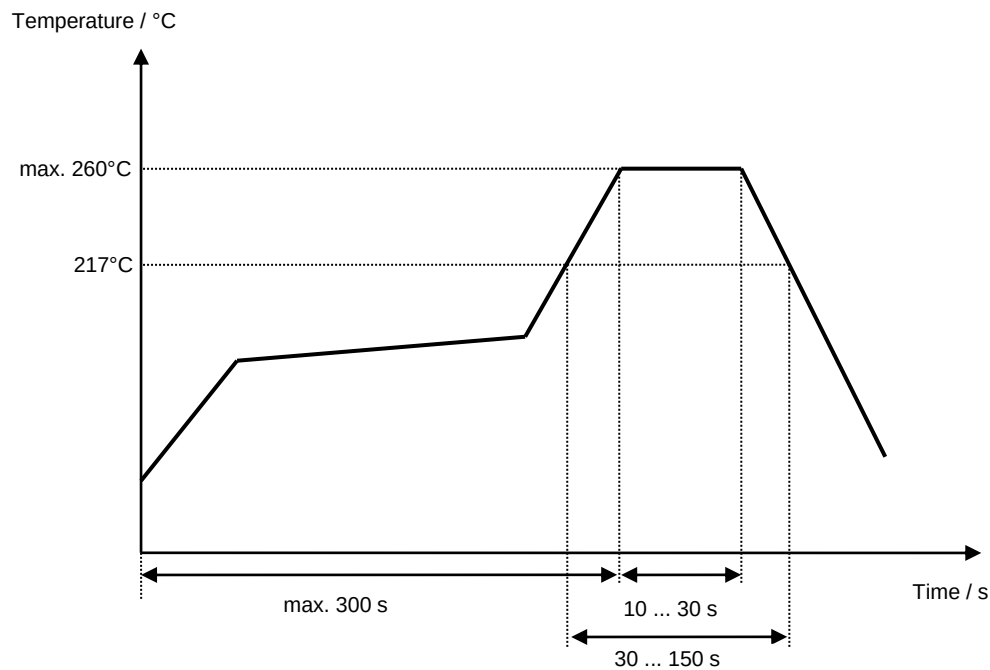
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**Air reflow temperature conditions**

| <b>Conditions</b>                          | <b>Exposure</b>             |
|--------------------------------------------|-----------------------------|
| 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****Microchip Frequency Technology GmbH****Potsdamer Straße 18****D 14 513 TELTOW / Germany****Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30**

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**Microchip****Filter specification****TFS 1430A****5/5****History**

| <b>Version</b> | <b>Reason of changes</b>                                                               | <b>Name</b> | <b>Date</b> |
|----------------|----------------------------------------------------------------------------------------|-------------|-------------|
| 1.0            | - Generation of development specification                                              | S. Channaa  | 05.06.2009  |
| 1.1            | - Add typical values and filter characteristic<br>- Generation of filter specification | S. Channaa  | 01.10.2009  |