**Measurement condition**

| | | |
|---|---|---|
| Ambient temperature: | 25 | °C |
| Input power level: | 0 | dBm |
| Terminating impedance: | | |
| Input: | 50 | Ω |
| Output: | 50 | Ω |

**Characteristics**

Remark:
The minimum of the attenuation $a_{min}$ is defined as the insertion loss $a_e$. The centre frequency $f_c$ is the measured frequency at 3 dB. The frequency shift of the filter in the operating temperature range is not included in the production tolerance scheme.

| **D a t a** | | **typ. value** | | **tolerance / limit** | | |
|---|---|---|---|---|---|---|
| **Insertion loss** | $a_e$ | 6,2 | dB | max. | 11,5 | dB |
| **Center frequency** (center frequency between 3dB points) | $f_C$ | 586,0375 | MHz | | ± 99,5 | kHz |
| **Phase at $f_c$** | | 153 | ° | | - | |
| **Unloaded quality factor** | $Q_U$ | 7700 | | | - | |
| **Ageing of $f_c$** | ** | - | | max. | -30/+10 | ppm/yr |
| **Spurious responses** | | 7 | dB | | - | |
| **Equivalent circuit elements** | | | | | | |
| Motional capacitance | $C_1$ | 0,3 | fF | | - | |
| Motional inductance | $L_1$ | 245 | nH | | - | |
| Motional resistance | $R_1$ | 90 | Ω | max. | 276 | Ω |
| Input / output capacitance | $C_0$ | 2,2 | pF | | ± 0,3 | pF |
| **Input power level** | ** *** | - | | max. | 10 | dBm |
| **DC breakdown voltage** | | - | | min. | 30 | V |
| **Operating temperature range** | OTR | - | | + 23 °C ... + 27 | | °C |
| **Operable temperature range** | | - | | - 40 °C ... + 85 | | °C |
| **Storage temperature range** | | - | | - 40 °C ... + 85 | | °C |
| **Frequency inversion temperature** | $T_0$ | 26 | °C | | ± 15 | °C |
| **Temperature coefficient of frequency** | $TC_f$ * | - 0,036 | ppm/K² | | - | |

*) $\Delta f(Hz) = TC_f(ppm/K) \times (T-T_0)^2 \times f_{To}(MHz)$.
**) at +65 °C case temperature or less
***) one I/O port is connected to the RF power source (at $f_C$) and the other I/O port is shorted to ground

**Generated:**

**Checked / Approved:**

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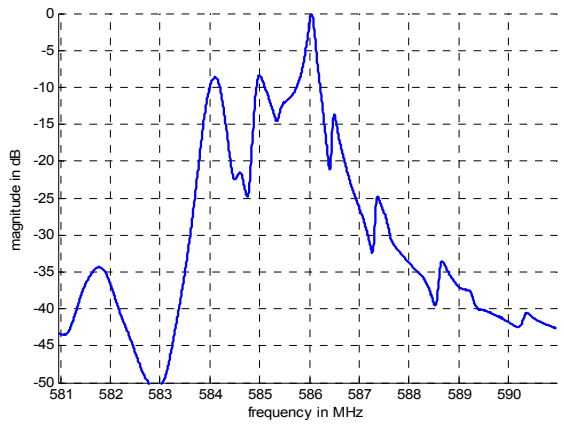
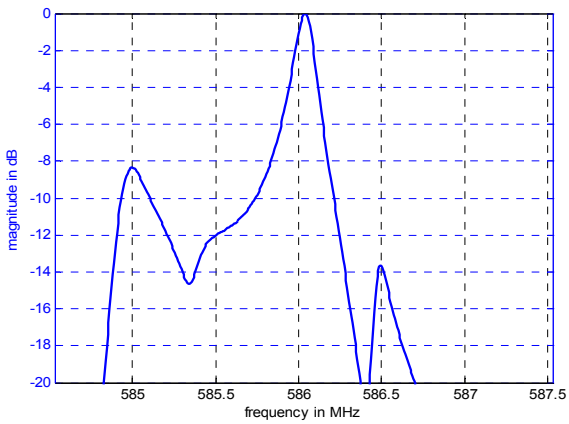
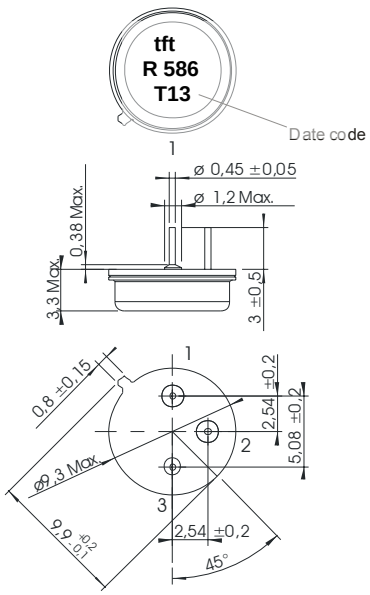
## Filter characteristic




## Construction and pin connection

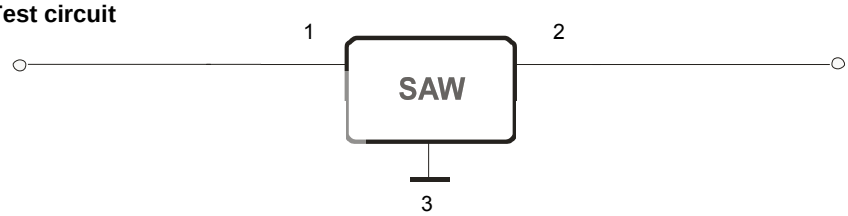
(All dimensions in mm)



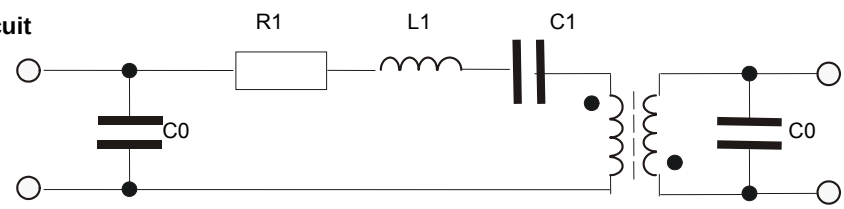

| | |
|---|---|
| 1 | Ground |
| 2 | Input |
| 3 | Output |

| Date code: | Year + week |
|---|---|
| T | 2005 |
| U | 2006 |
| V | 2007 |
| ... | |

## 50 Ohm Test circuit




## Equivalent Circuit

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### Stability characteristics

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

| | |
|---|---|
| 1. Shock: | 500g, 1 ms, half sine wave, 3 shocks each plane;<br>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;<br>DIN IEC 68 T2 - 6 |
| 3. Change of temperature: | -55 °C to 125°C / 30 min. each / 10 cycles<br>DIN IEC 68 part 2 – 14 Test N |
| 4. Resistance to solder heat (reflow): | reflow possible: twice max.;<br>for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4; |

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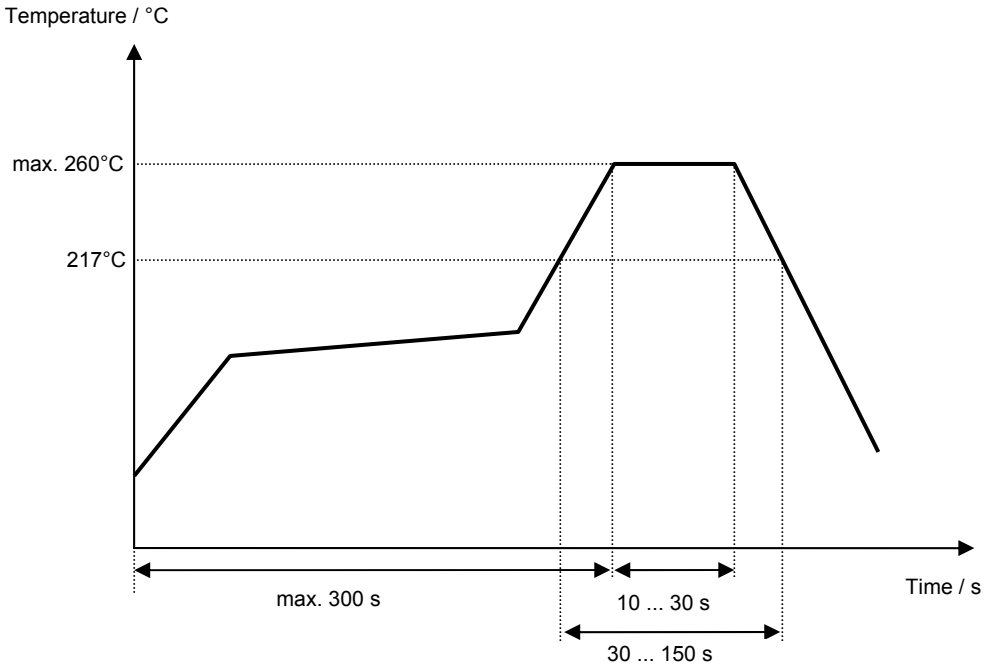
**Air reflow temperature conditions**

| 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 | Martens | 02.12.2004 |
| 1.1 | - labelling corrected | Steiner | 04.03.2005 |
| 2.0 | - generation of resonator specification | Steiner | 21.03.2005 |

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