

VI TELEFILTER

Filter specification

TFS 434D

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	240 Ω -2,5 pF	
Output:	240 Ω -2,5 pF	

Characteristics

Remark:

The nominal frequency f_N is fixed at 434,42 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 434D is 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 . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit	
Insertion loss (reference level)		$a_e = a_{min}$	1,8 dB	max.	3,0 dB
Nominal frequency		f_N	-	434,42	MHz
Centre frequency 3dB		f_C	434,46 MHz	-	
Passband		PB	-	$f_N \pm 0,16$	MHz
Relative attenuation		a_{rel}			
$f_N - 0,16$	MHz ... $f_N + 0,16$	MHz	0,7 dB	max.	2 dB
$f_N - 0,18$	MHz ... $f_N + 0,18$	MHz	1,2 dB	max.	3 dB
$f_N - 0,22$	MHz ... $f_N + 0,22$	MHz	3,1 dB	max.	6 dB
$f_N - 423,92$	MHz ... $f_N - 19,92$	MHz	55,6 dB	min.	52 dB
$f_N - 19,92$	MHz ... $f_N - 10,42$	MHz	53,6 dB	min.	48 dB
$f_N - 10,42$	MHz ... $f_N - 2,20$	MHz	49,5 dB	min.	29 dB
$f_N - 2,20$	MHz ... $f_N - 1,80$	MHz	54,7 dB	min.	26 dB
$f_N - 1,80$	MHz ... $f_N - 0,82$	MHz	17,8 dB	min.	15 dB
$f_N + 1,00$	MHz ... $f_N + 8,08$	MHz	35,4 dB	min.	18 dB
$f_N + 8,08$	MHz ... $f_N + 66,08$	MHz	43,2 dB	min.	40 dB
$f_N + 66,08$	MHz ... $f_N + 266,08$	MHz	62,3 dB	min.	50 dB
$f_N + 266,08$	MHz ... $f_N + 371,08$	MHz	51,6 dB	min.	45 dB
$f_N + 371,08$	MHz ... $f_N + 566,08$	MHz	65,5 dB	min.	60 dB
Input power level			-	max.	10 dBm
Permissible DV voltage		V_{DC}	-	max.	6 V
Operating temperature range		OTR	-	- 40 °C ... + 95 °C	
Storage temperature range			-	- 45 °C ... + 120 °C	
Temperature coefficient of frequency		TC_f^{**}	-0,03 ppm/K ²		

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

***) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{cat}(\text{MHz})$.

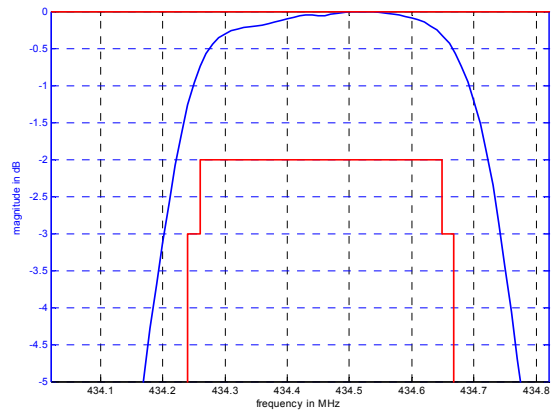
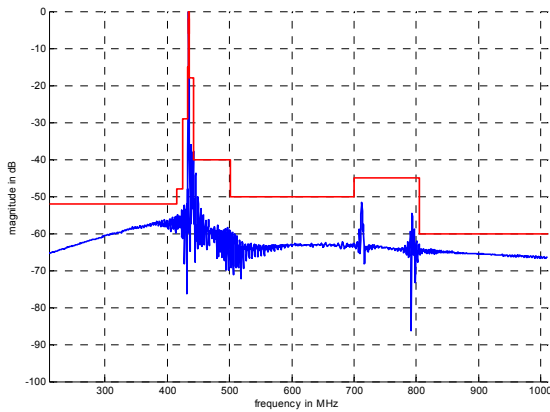
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Checked / Approved:

Tele Filter GmbH
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

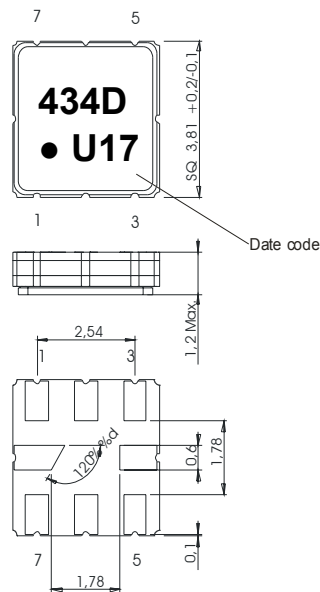
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Filter characteristic



Construction and pin connection

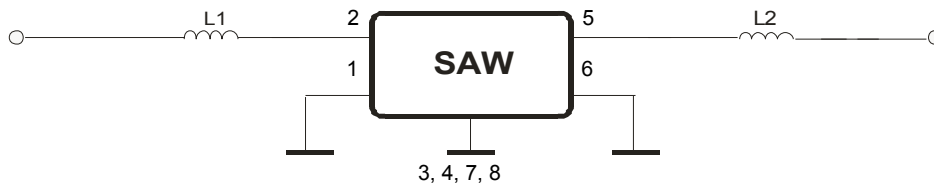
(All dimensions in mm)



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

Date code: Year + week
 U 2006
 V 2007
 W 2008
 ...

50 Ω Test circuit



Tele Filter GmbH
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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;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

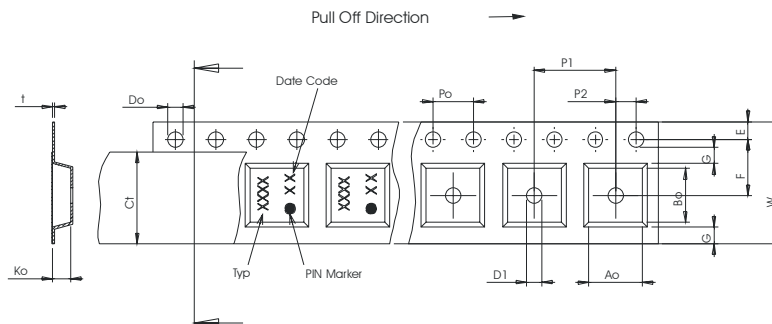
Packing

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:	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

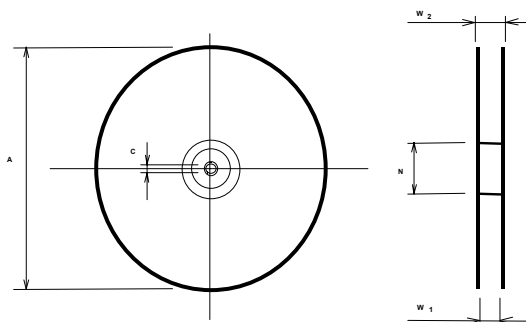
Tape (all dimensions in mm)

- W : 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 : 9,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 12,4 +2/-0
- W2(max) : 18,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

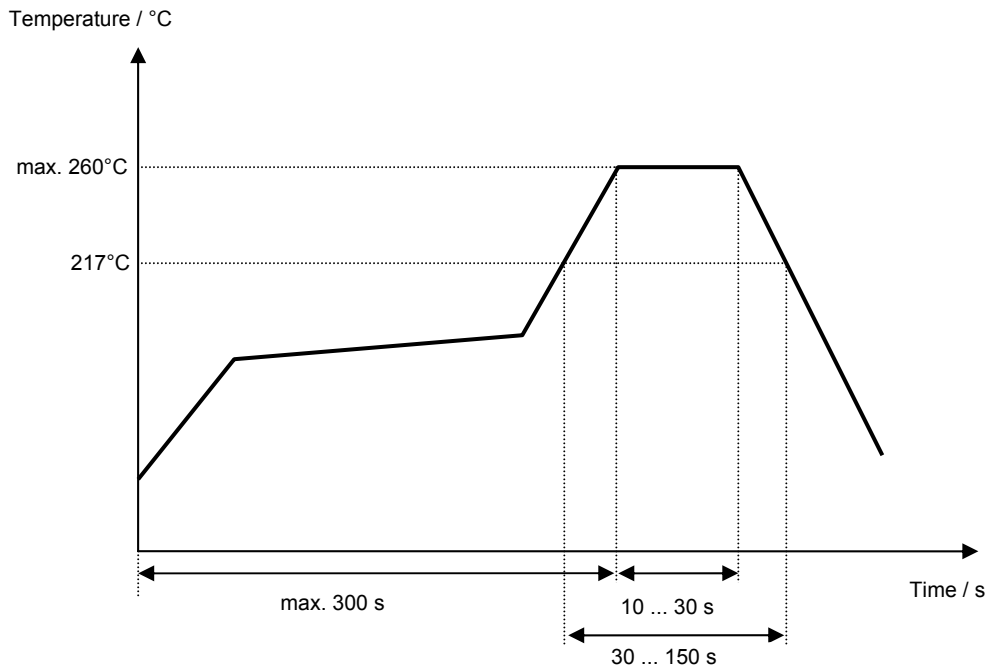
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Air reflow temperature conditions

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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VI TELEFILTER**Filter specification****TFS 434D****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	24.03.2006
1.1	- Change relative attenuation	Strehl	28.03.2006
1.2	- Add typical values, add filter characteristic - Generation of filter specification	Channaa	24.04.2006

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