

VI TELEFILTER**Filter specification****TFS 1387****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	198 Ω	-1,0 pF
Output:	264 Ω	-0,9 pF

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 1387,0 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.

Data		typ. value	tolerance / limit
Insertion loss	a_e	4,0 dB	max. 5,0 dB
Nominal frequency	f_N	-	1387,0 MHz
Passband	PB	-	$f_N \pm 150$ kHz
Pass band ripple		0,8 dB	max. $\pm 1,1$ dB
Bandwidth			
3 dB		1,55 MHz	min. 1,0 MHz
Absolute attenuation	a_{abs}		
0,3 MHz ... 1357 MHz		28 dB	min. 24 dB
1357 MHz ... 1383,5 MHz		26 dB	min. 18 dB
1390 MHz ... 1402 MHz		24 dB	min. 18 dB
1402 MHz ... 1732 MHz		26 dB	min. 24 dB
VSWR within PB		1,4 : 1	max. 1,7 : 1
Input power level		-	max. 20 dBm
Operating temperature range	OTR	-	- 45 °C ... + 70 °C
Storage temperature range		-	- 45 °C ... + 85 °C
Frequency inversion temperature		40 °C	-
Temperature coefficient of frequency	TC_f^{**}	-0,051 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.

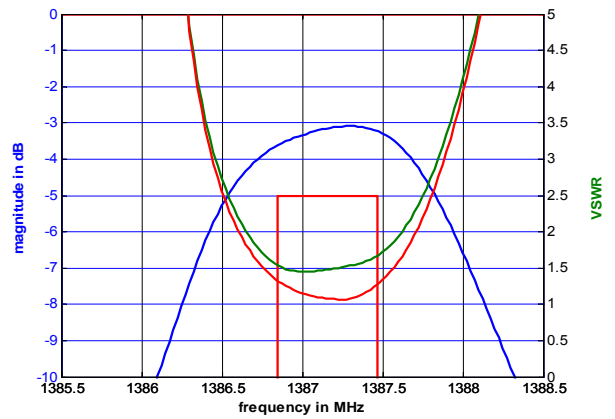
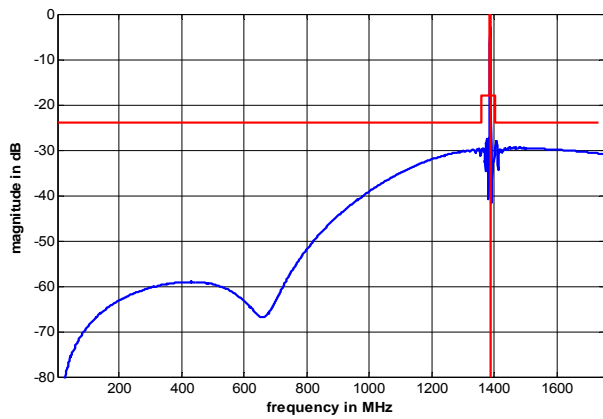
***) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$.

Generated:**Checked / Approved:**

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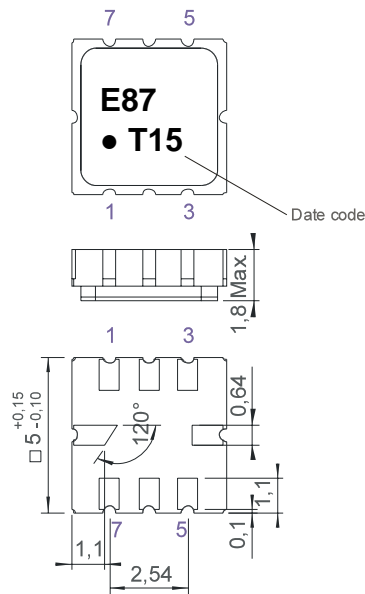
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Filter characteristic



Construction and pin connection

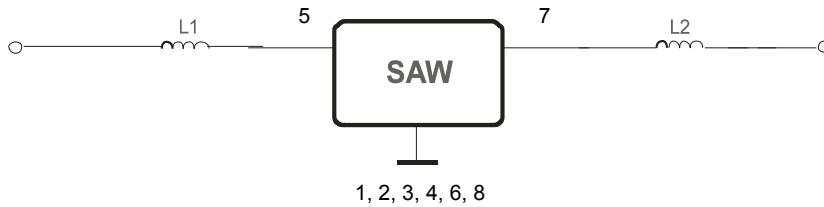
(All dimensions in mm)



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

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

50 Ohm Test circuit



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Stability characteristics

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

1. Shock: 500g, 18 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: twice max. ;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

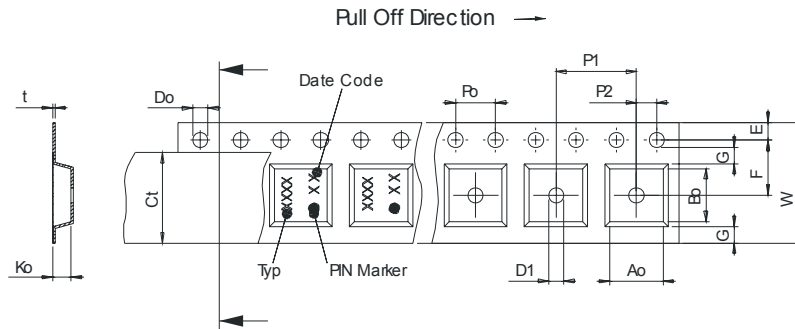
Packing

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 peer 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

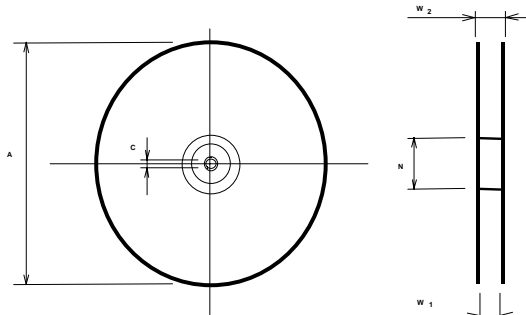
Tape (all dimensions in mm)

- 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 : 5,30 ± 0,1
- Bo : 5,30 ± 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.

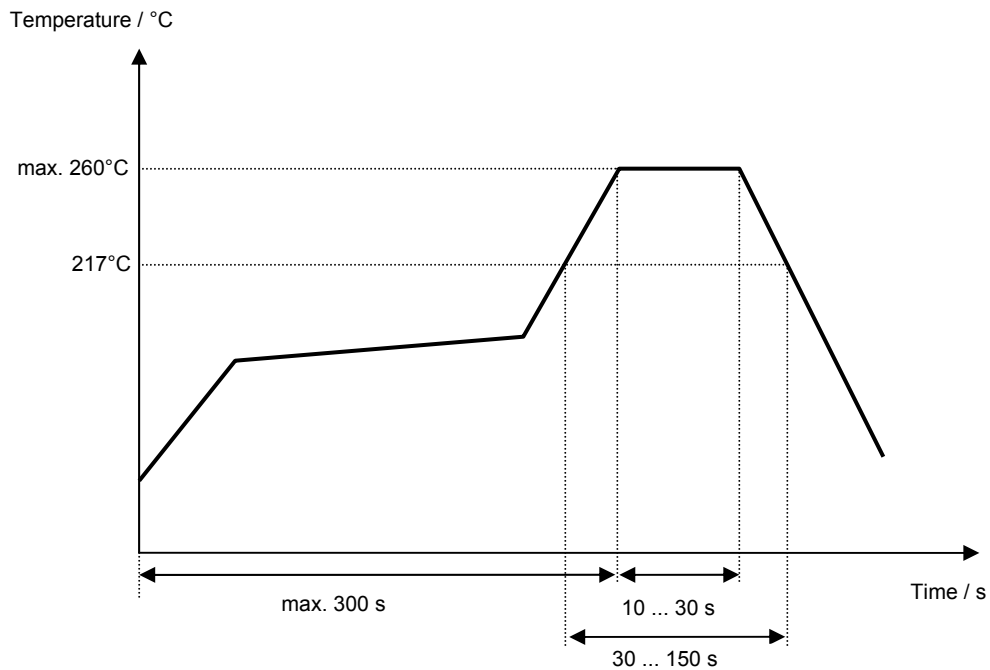
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Air reflow temperature conditions

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 1387****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- generation of development specification	Dr. Sabah	23.06.2004
1.1	- change absolute attenuation 1357 - 1384 MHz to 1357 - 1383,5 MHz - change air reflow profile	Noack	23.11.2004
1.2	- generation of filter specification - add typical value and test circuit	Noack	06.04.2005

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