

VI TELEFILTER

Filter specification

TFS 82C

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	1,36 kΩ	-16,3 pF
Output:	1,80 kΩ	- 4,8 pF

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS 82C is the minimum of the pass band attenuation. This value is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 82 MHz without any tolerance. The values of relative attenuation a_{rel} 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
Insertion loss (reference level)	a_e	31 dB	max. 33 dB
Nominal frequency	f_N		82,0 MHz
Centre frequency	f_C	82,0 MHz	-
Pass band	PB	-	$f_N \pm 3,75$ MHz
Pass band ripple	p-p	1,5 dB	max. 3 dB
Relative attenuation	a_{rel}		
f_N	... $f_N \pm 3,75$ MHz	1,5 dB	max. 3 dB
$f_N \pm 4,05$ MHz	... $f_N \pm 4,15$ MHz	40 dB	min. 35 dB
$f_N \pm 4,15$ MHz	... $f_N \pm 50,00$ MHz	45 dB	min. 40 dB
Average group delay in pass band		4,7 μ s	max. 5 μ s
Group delay ripple in pass band	p-p	82 ns	max. 200 ns
Operating temperature range	OTR	-	23 °C \pm 2 °C
Storage temperature range		-	-40 °C ... + 85 °C
Temperature coefficient of frequency	TC_f^{**}	-0,04 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.

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

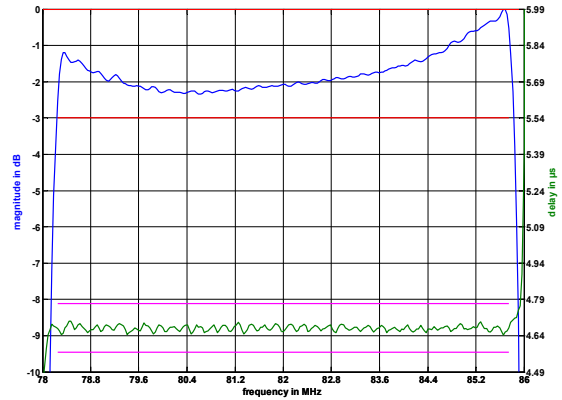
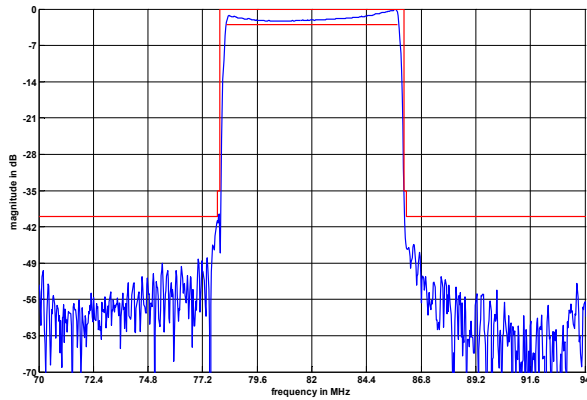
Generated:

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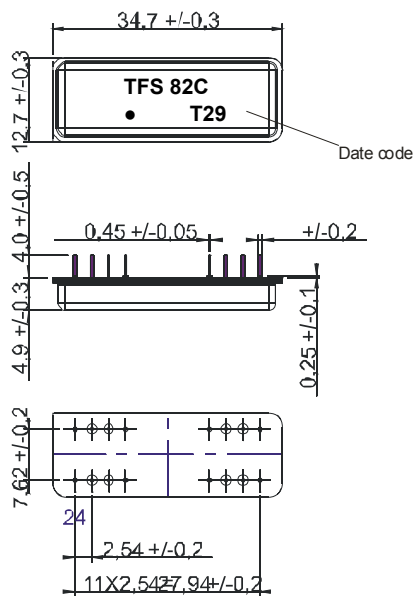
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Filter characteristic



Construction and pin connection

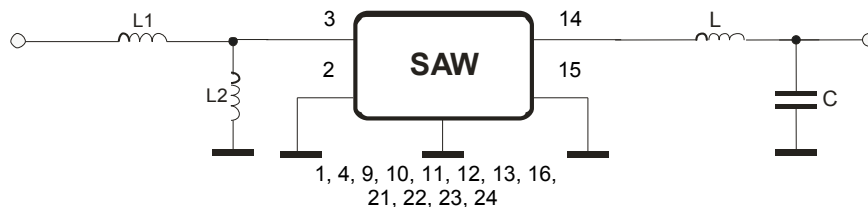
(All dimensions in mm)



- 1 Ground
- 2 Input RF Return
- 3 Input
- 4 Ground
- 9,10,11,12 Ground
- 13 Ground
- 14 Output
- 15 Output RF Return
- 16 Ground
- 21,22,23,24 Ground

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

50 Ω Test circuit



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Stability characteristics

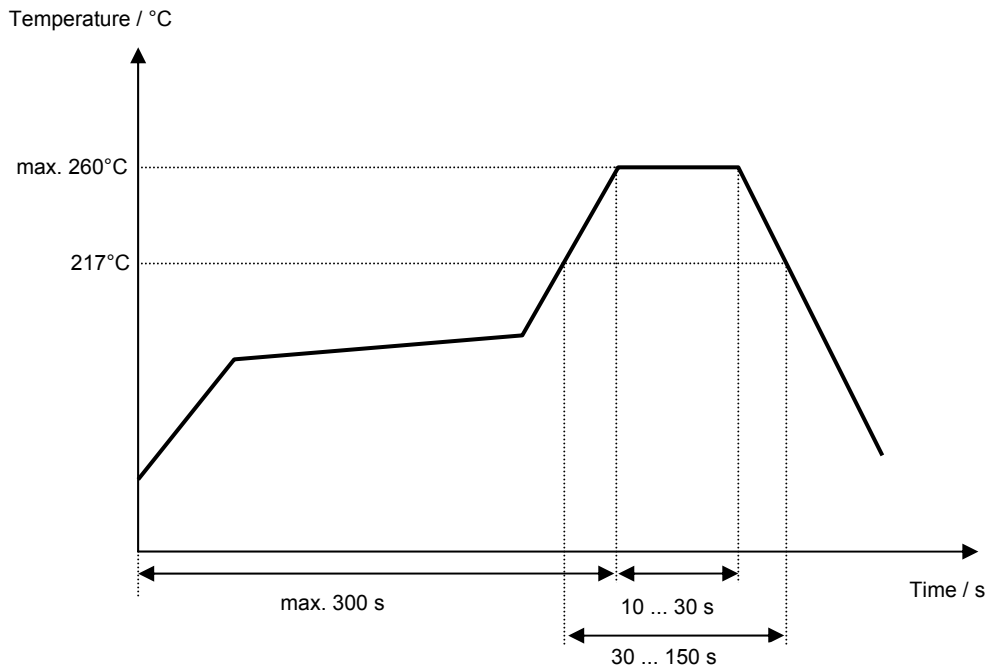
After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
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;

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 82C****5/5****History**

Version	Reason of Changes	Name	Date
1.0	generated development specification	Dr. Sabah	21.12.1999
1.1	- terminating impedance, typical values and filter characteristic added - matching configuration changed - air reflow temperature conditions and stability characteristics added	Pfeiffer	13.07.2005

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