Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 989,93 Ω || -12,44 pF
Output: 1063,97 Ω || - 11,96 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS96C 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 96.585MHz 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	6,3		max.	9	dB
Nominal frequency	f_N	-			96,585	MHz
Passband	PB		MHz	f_N ±	0,2	MHz
Amplitude ripple within f_N... f_N ± 0,2 MHz p-p		0,43	dB	max.	1	dB
Bandwidth	BW					
1 dB		0,46	MHz	min.	0,4	MHz
10 dB		0,55	MHz	max.	0,6	MHz
Relative attenuation	a_{rel}					
f_N ... f_N ± 0,2 MHz		0,43	dB	max.	1	dB
f_N ± 0,3 MHz ... f_N ± 0,6 MHz		16	dB	min.	10	dB
f_N ± 0,6 MHz ... f_N ± 3,5 MHz		32	dB	min.	30	dB
f_N ± 3,5 MHz ... f_N ± 10,0 MHz		55	dB	min.	40	dB
f_N ± 10,0 MHz ... f_N ± 50,0 MHz		60	dB	min.	50	dB
Group delay ripple within f_N... f_N ± 0,2 MHz p-p		1907		max.	4000	ns
Return loss within PB		13		min.	10	dB
Input power level		-		max.	10	dBm
Mass		4,3		max.	5	g
Operating temperature range	OTR			- 20 °C ... + 70 °C		
Storage temperature range				- 40 °C ... + 125 °C		
Temperature coefficient of frequency	TC_f **	-0,04	ppm/K²		-	

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

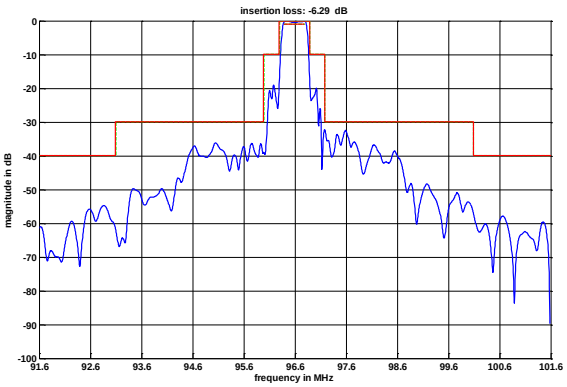
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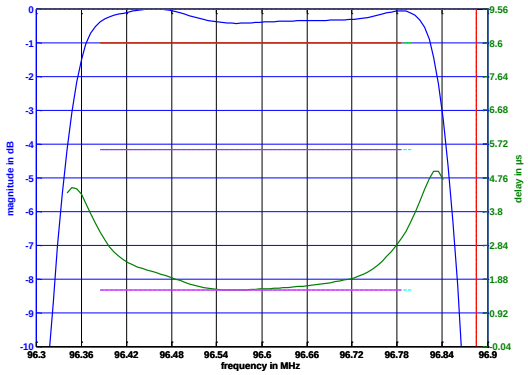
Checked / Approved:

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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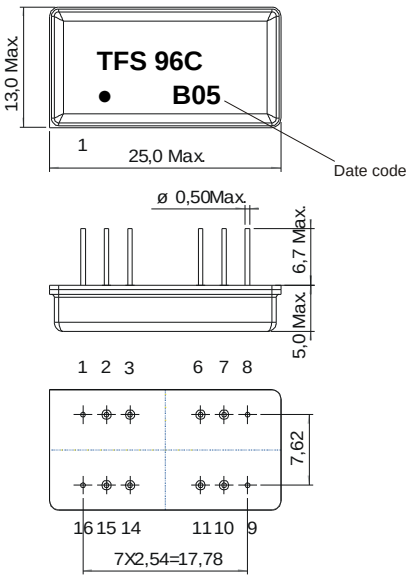
Filter characteristic





Construction and pin connection

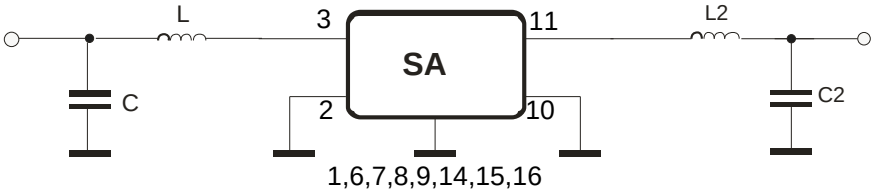
(All dimensions in mm)



1	Ground
2	Input RF Return
3	Input
6	Ground
7	Ground
8	Ground
9	Ground
10	Output RF Return
11	Output
14	Ground
15	Ground
16	Ground

Date code:	Year + week
B	2011
C	2012
D	2013
...	

50 Ohm 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 plane, 3 planes; 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)

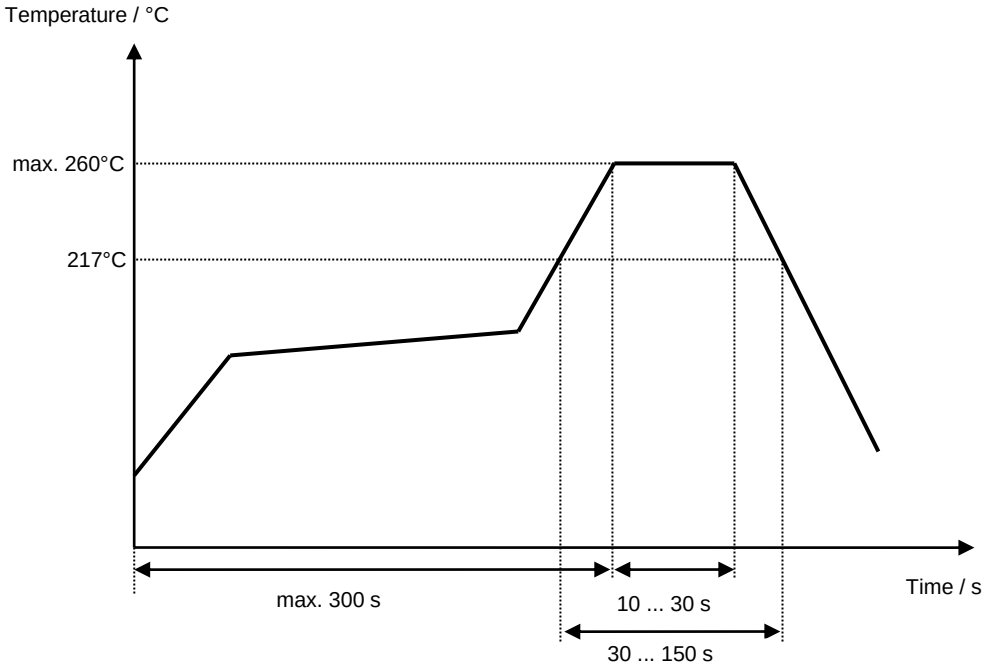
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Air reflow temperature conditions

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	- development specification	Jaffer	24.02.2011
1.1	- changed spec to same as TFS96CS01, ver 2.0.	TCUK	20.05.2011
1.2	- add typ values, update to filter specification.	TCUK	05.10.2011

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