

VI TELEFILTER**Filter specification****TFS 70AP****1/5****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 0 dBm
 Terminating impedance: *
 Input: 204 Ω || -57 pF
 Output: 237 Ω || -70 pF

Characteristics**Remark:**

The nominal frequency f_N is fixed at 70,00 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 70AP is the insertion loss a_e . The centre frequency f_c is the arithmetic mean value of the upper and lower frequencies at the 1,5 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	a_e	19,5	dB	max. 22 dB
Nominal frequency	f_N	-		70,00 MHz
Pass band	PB	-		$f_N \pm 0,61$ MHz
Amplitude ripple	PB	0,5	dB	max. 0,7 dB
Deviation from linear phase		1	deg	max. 5 deg
Triple transit suppression		50	dB	min. 30 dB
Relative attenuation	a_{rel}			
	$f_N \pm 0,630$ MHz	0,7	dB	max. 1,5 dB
	$f_N \pm 0,750$ MHz	40	dB	min. 35 dB
	$f_N \pm 0,900$ MHz	60	dB	min. 50 dB
Operating temperature range		-		- 5 °C ... + 65 °C
Storage temperature range		-		- 40 °C ... + 85 °C
Temperature coefficient of frequency (**)	TCf	-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.

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

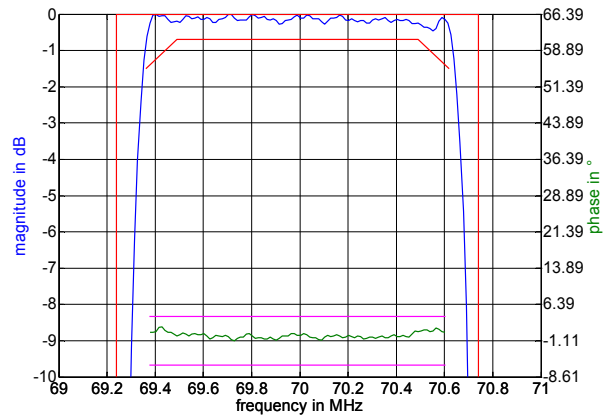
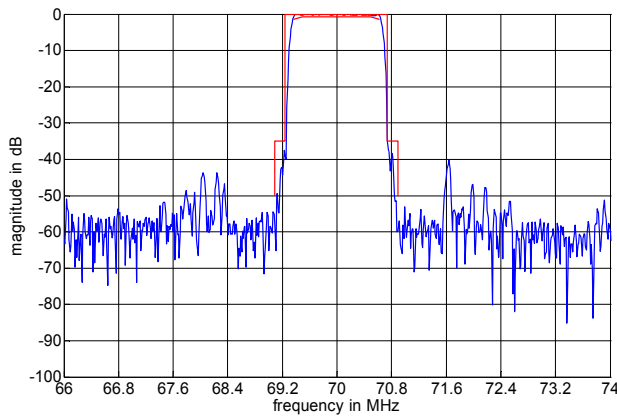
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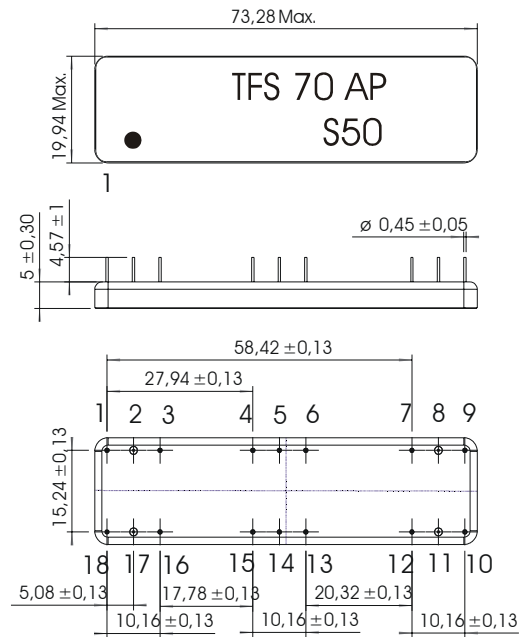
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Filter characteristic



Construction and pin connection

(All dimensions in mm)

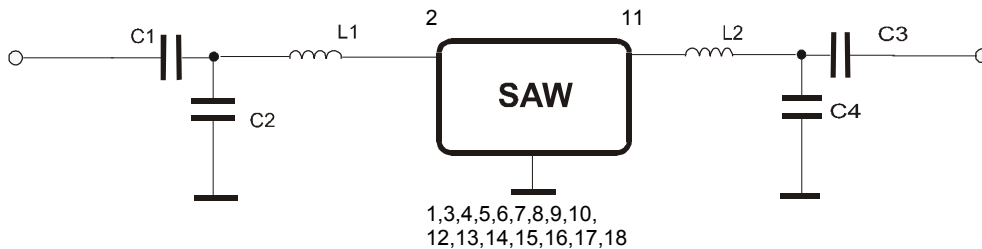


Date code: Year+week

S	2004
T	2005
U	2006
...	

Pin 1	Ground
Pin 2	Input
Pin 3	Ground
Pin 4	Ground
Pin 5	Ground
Pin 6	Ground
Pin 7	Ground
Pin 8	Ground
Pin 9	Ground
Pin 10	Ground
Pin 11	Output
Pin 12	Ground
Pin 13	Ground
Pin 14	Ground
Pin 15	Ground
Pin 16	Ground
Pin 17	Ground
Pin 18	Ground

50 Ohm Test circuit



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Stability characteristics

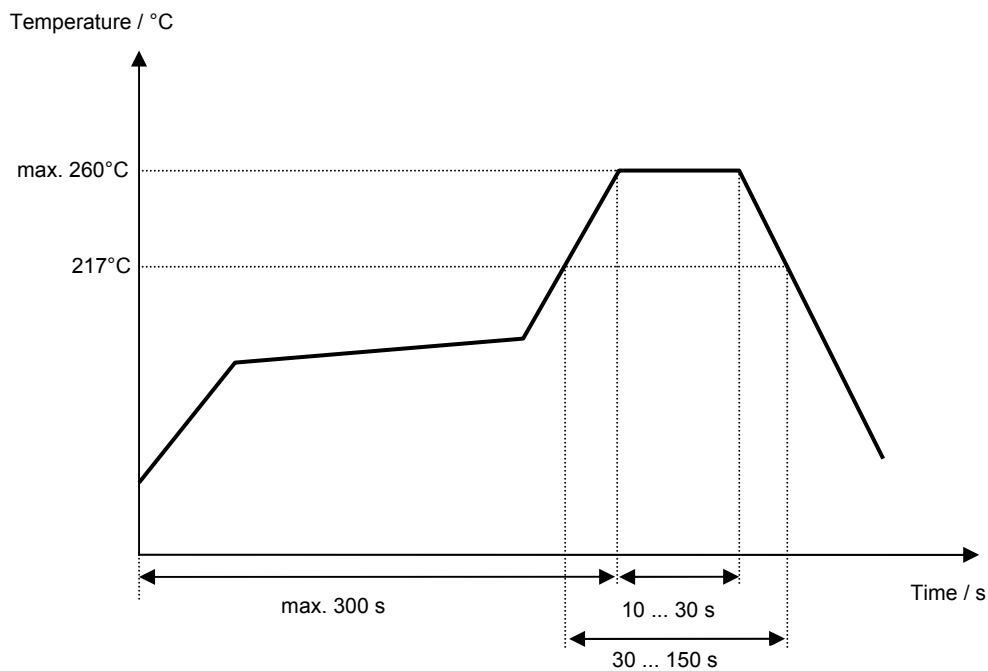
After the following tests the filter shall meet the whole specification:

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;

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



VI TELEFILTER**Filter specification****TFS 70AP****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of specification	Steiner	23.04.2004
1.1	air reflow temperature conditions modified terminating impedances corrected	Pfeiffer	10.12.2004

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