Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 560 Ω || -17,0 pF
Output: 610 Ω || -15,5 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS 150AB is the minimum of the pass band attenuation a_{min}. The minimum of the pass band attenuation a_{min} is defined as 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. The temperature coefficient of frequency Tc_f is valid for both the reference frequency f_c and the frequency response of the filter in the operating temperature range. The bandwidth 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	25	dB	max.	27	dB
Centre frequency at ambient temperature	f_c	150,0	MHz		150,0±0,1	MHz
Passband at ambient temperature	PB	-			f_c ± 3,2	MHz
Pass band ripple	p-p	0,6	dB	max.	1,3	dB
Bandwidth at ambient temperature	BW					
1,3 dB		-		min.	6,4	MHz
3,0 dB		6,62	MHz	min.	6,6	MHz
33 dB		7,31	MHz	max.	7,4	MHz
43 dB		7,42	MHz	max.	8,0	MHz
48 dB		7,46	MHz	max.	8,8	MHz
Relative attenuation	a_{rel}					
f_C … f_C ± 3,2 MHz		1	dB	max.	1,3	dB
f_C ± 3,2 MHz … f_C ± 3,3 MHz		2,5	dB	max.	3	dB
f_C ± 3,7 MHz … f_C ± 3,9 MHz		36	dB	min.	33	dB
f_C ± 3,9 MHz … f_C ± 4,3 MHz		50	dB	min.	43	dB
f_C ± 4,3 MHz … f_C ± 17,4 MHz		53	dB	min.	50	dB
f_C ± 17,4 MHz … f_C ± 92 MHz		60	dB	min.	55	dB
Group delay	mean value in PB	3,36	µs	max.	3,4	µs
Group delay ripple within PB	p-p	75	ns	max.	170	ns
Deviation from linear phase within PB	p-p	1,5	deg		-	
Triple transit attenuation compared to main signal		50	dB		-	
Crosstalk attenuation compared to main signal		65	dB		-	
Operating temperature range	OTR	-		- 25 °C ... + 80°C		
Storage temperature range		-		- 40 °C ... + 85°C		
Frequency inversion temperature		46	°C			
Temperature coefficient of frequency	TC_f **	-0,03	ppm/K²		-	

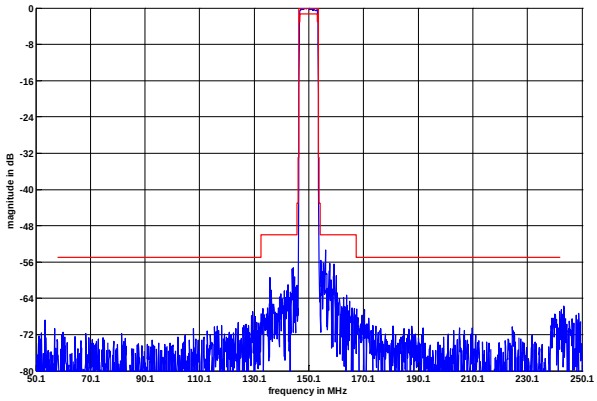
*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.
**) $\Delta f(Hz) = TC_f(ppm/K^2) \times (T-T_0)^2 \times f_{To}(MHz)$

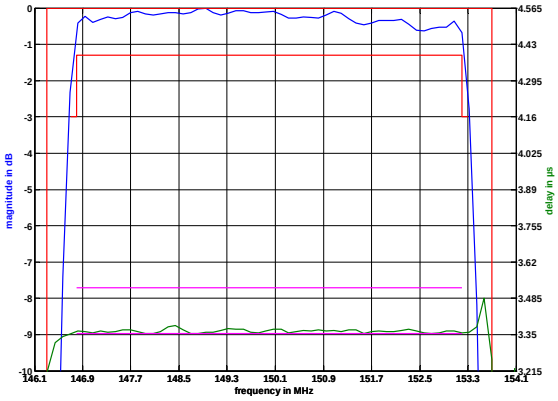
Generated:

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

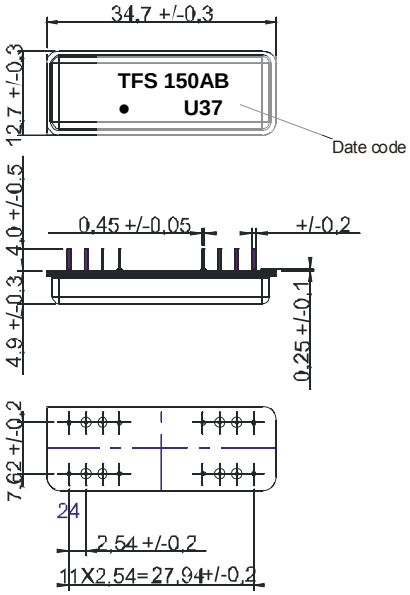
Filter characteristic





Construction and pin connection

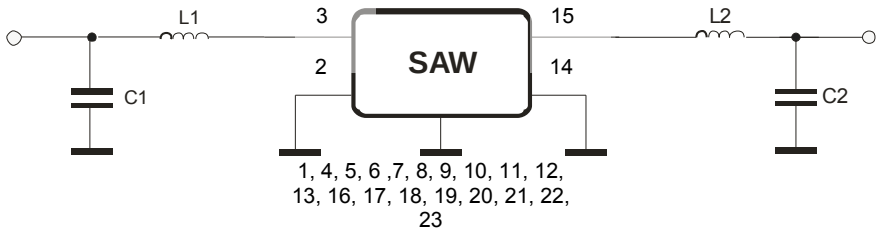
(All dimensions in mm)



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

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

50 Ohm Test circuit



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

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.; for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

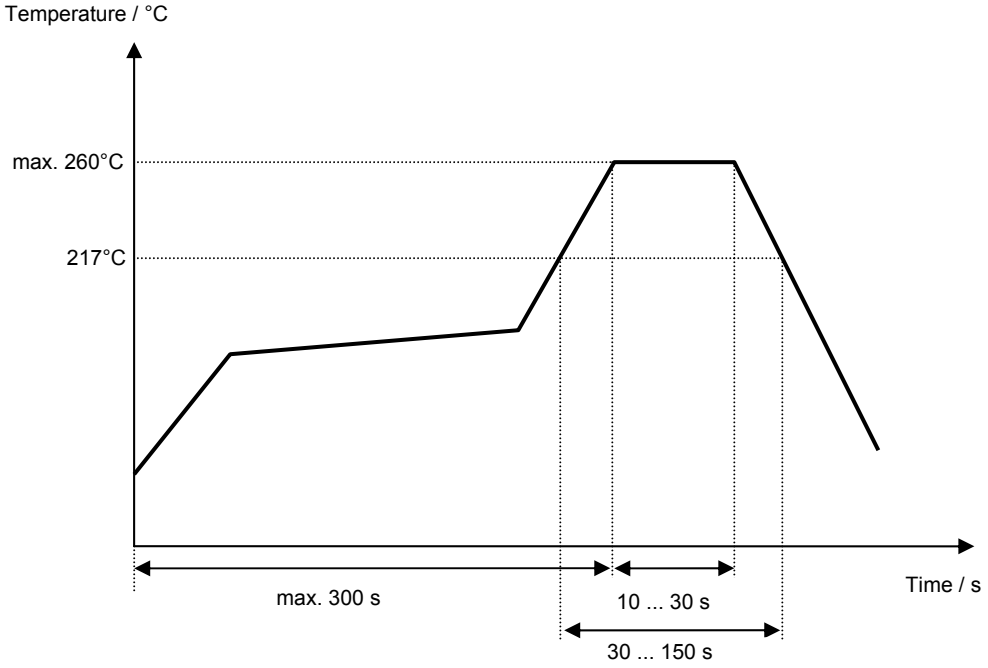
This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

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

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



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

History

Version	Reason of Changes	Name	Date
1.0	Generation of development specification	Alawneh	31.05.2006
1.1	Correct bandwidth	Strehl	12.07.2006
1.2	- terminating impedances, typical values, filter characteristics and matching configuration added	Pfeiffer	14.09.2006

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