Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 55 Ω || -21,9 pF
Output: 55 Ω || -17,7 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS150T 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 reference 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 both for 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	24,1	dB	max.	25	dB
Nominal frequency	f_N	-			150,0	MHz
Centre frequency	f_C	150,0	MHz	150,0	± 0,1	MHz
Passband	PB	-		f_N ±	8,05	MHz
Pass band ripple (p-p)		0,7	dB	max.	1,0	dB
Bandwidth	BW					
3 dB		16,62	MHz	min.	16,5	MHz
15 dB		17,11	MHz	max.	17,2	MHz
45 dB		17,54	MHz	max.	18,4	MHz
Relative attenuation	a_{rel}					
f_C … f_C ± 8,25 MHz		2,5	dB	max.	3	dB
f_C ± 8,60 MHz … f_C ± 8,80 MHz		20	dB	min.	15	dB
f_C ± 8,80 MHz … f_C ± 9,20 MHz		35	dB	min.	30	dB
f_C ± 9,20 MHz … f_C ± 10 MHz		48	dB	min.	45	dB
f_C + 10 MHz … f_C + 400 MHz		53	dB	min.	50	dB
f_C - 140 MHz … f_C - 10 MHz		55	dB	min.	50	dB
Absolute group delay within PB		2,8	µs	max.	4	µs
Group delay ripple within PB (p-p)		80	ns	max.	150	ns
Operating temperature range	OTR	-		- 25 °C ... + 80°C		
Storage temperature range		-		- 40 °C ... + 85°C		
Temperature coefficient of frequency	TC_f **	-87	ppm/K		-	

*) 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.
**) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_A) \times f_{CAT}$ (MHz)

Generated:

Checked / Approved:

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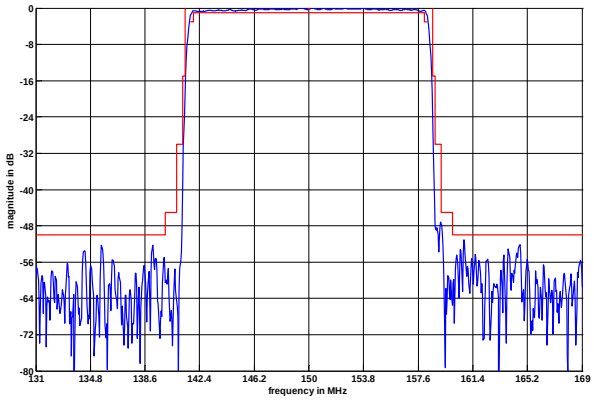
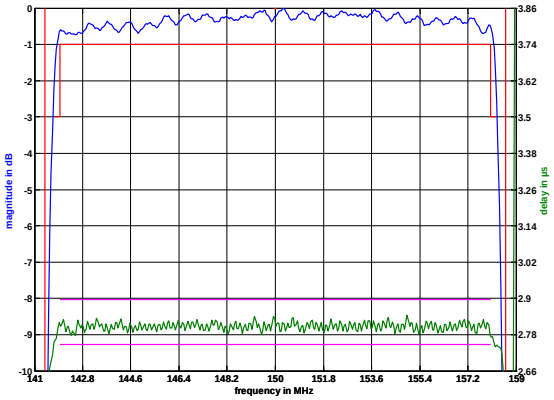
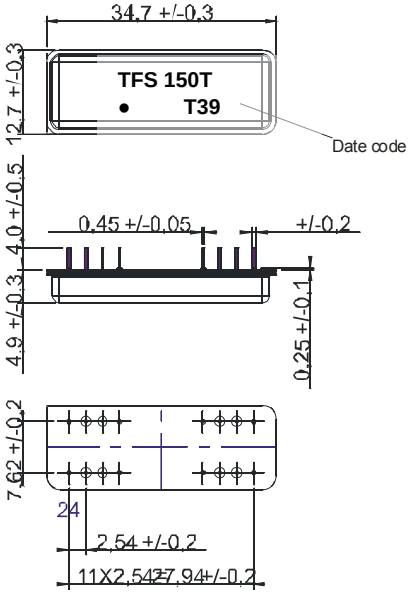
Filter characteristic





Construction and pin connection

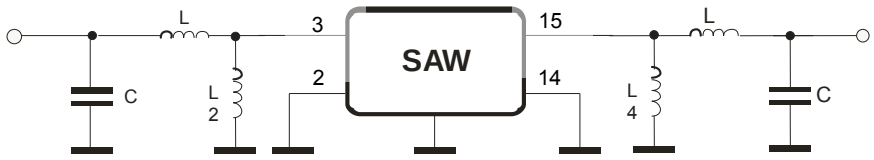
(All dimensions in mm)



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

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

50 Ohm Test circuit



1, 4, 9, 10, 11, 12, 13, 16,
21, 22, 23, 24

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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 5g 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, please refer to the attached "Air reflow temperature conditions" on page 4;

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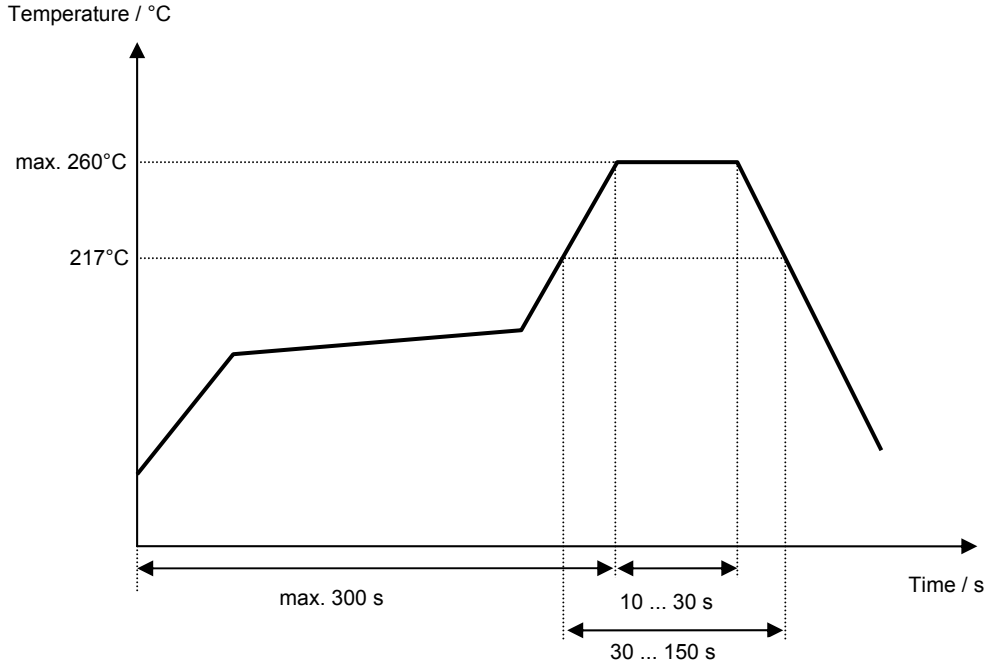
Air reflow temperature conditions

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	- generation of development specification	Strehl	27.06.2005
1.1	- change remark of characteristics, passband and limit for centre frequency	Strehl	10.08.2005
1.2	- terminating impedance, typical values, filter characteristic and matching configuration added	Pfeiffer	20.09.2005

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