Measurement condition

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 207 Ω || -24 pF
Output: 99 Ω || -25 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS125S 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 125 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	11	dB	max.	14	dB
Nominal frequency	f_N				125	MHz
Passband	PB			f_N ±	8	MHz
Pass band ripple		0.3	dB	max.	1	dB
Bandwidth						
1 dB		22	MHz	min.	16	MHz
25 dB		29	MHz	max.	40	MHz
Relative attenuation	a_{rel}					
f_N - 8 MHz … f_N + 8 MHz		0.3	dB	max.	1	dB
f_N - 100 MHz … f_N - 33 MHz		53	dB	min.	40	dB
f_N - 33 MHz … f_N - 20 MHz		40	dB	min.	25	dB
f_N + 20 MHz … f_N + 33 MHz		36	dB	min.	25	dB
f_N + 33 MHz … f_N + 100 MHz		48	dB	min.	40	dB
Group delay ripple in PB	GDR	16	ns	max.	30	ns
Input power level				max.	15	dBm
Return loss within PB		10	dB	min.	6	dB
Operating temperature range	OTR			- 40 °C ... + 85°C		
Storage temperature range				- 55 °C ... + 125°C		
Temperature coefficient of frequency	TC_f *	-94	ppm/K			

*) $\Delta f = TC_f(T - T_A)f_N$

Generated:

Checked / Approved:

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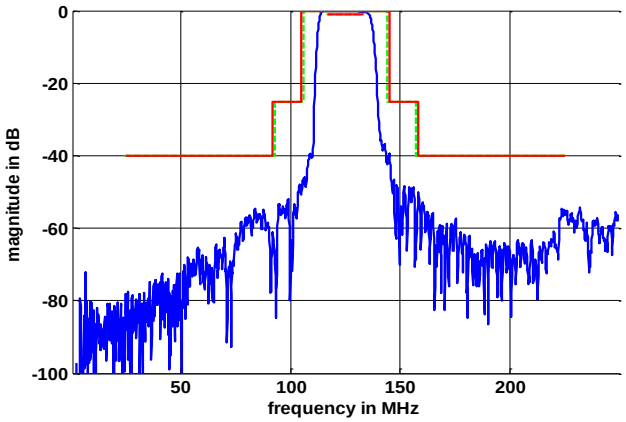
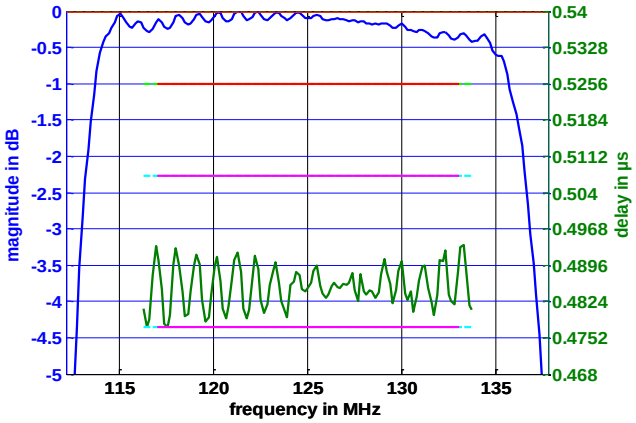
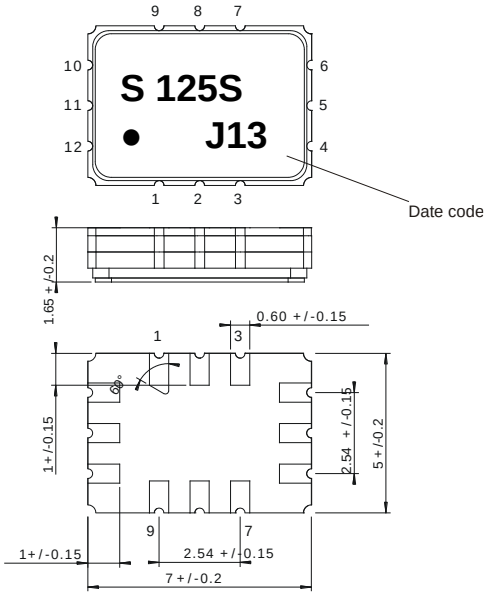
Filter characteristic





Construction and pin connection

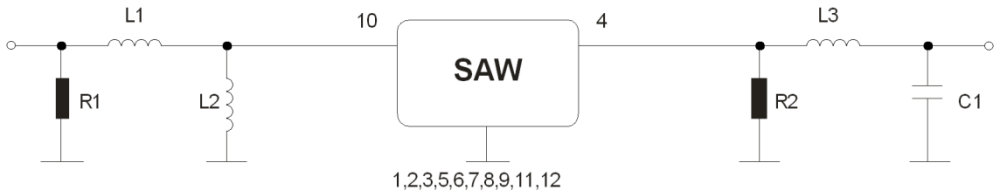
(All dimensions in mm)



1	Ground
2	Ground
3	Ground
4	Output
5	Ground
6	Ground
7	Ground
8	Ground
9	Ground
10	Input
11	Ground
12	Ground

Date code:	Year + week
J	2017
K	2018
L	2019
...	

50 Ω Test circuit



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Stability characteristics, reliability

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

1. Shock: 500 g, 1 ms, half sine wave, 3 shocks each plane;
   DIN IEC 60068 T2 - 27

2. Vibration: 10 Hz to 2000 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 60068 T2 - 6

3. Change of temperature: -55 °C to 125 °C / 15 min. each / 100 cycles
   DIN IEC 60068 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;

5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

This filter is RoHS compliant (2011/65/EU)

Packing

Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

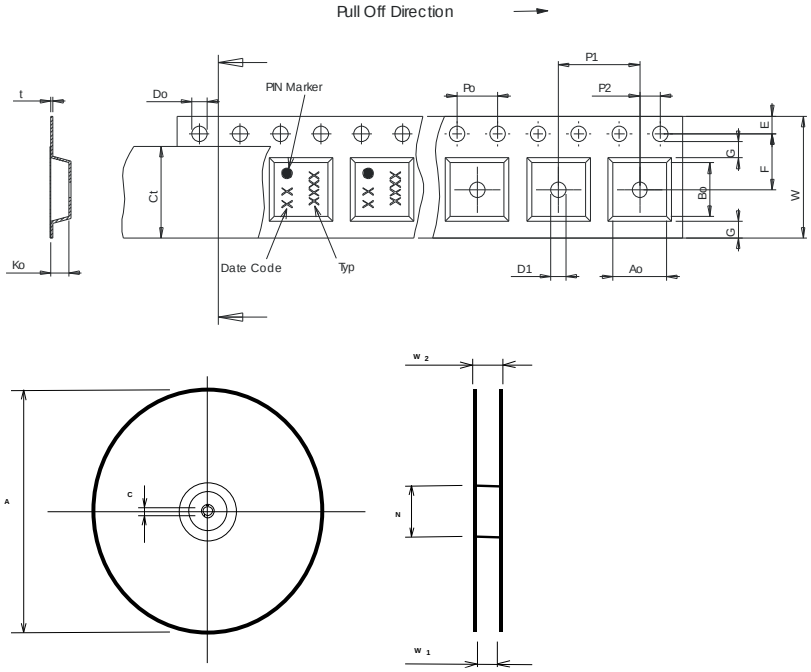
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	:	16.00	+0.3/-0.1
Po	:	4.00	±0.1
Do	:	1.50	+0.1/-0
E	:	1.75	±0.1
F	:	7.50	±0.1
G(min)	:	0.75	
P2	:	2.00	±0.1
P1	:	8.00	±0.1
D1(min)	:	1.50	
Ao	:	5.40	±0.1
Bo	:	7.60	±0.1
Ct	:	13.30	±0.1
Ko	:	2.00	±0.1
t	:	0.30	±0.05

Reel (all dimensions in mm)

A	:	330	or 180
W1	:	16.4	+2/-0
W2(max)	:	22.40	
N(min)	:	50.00	
C	:	13.0	+0.5/-0.2



The minimum bending radius is 45 mm.

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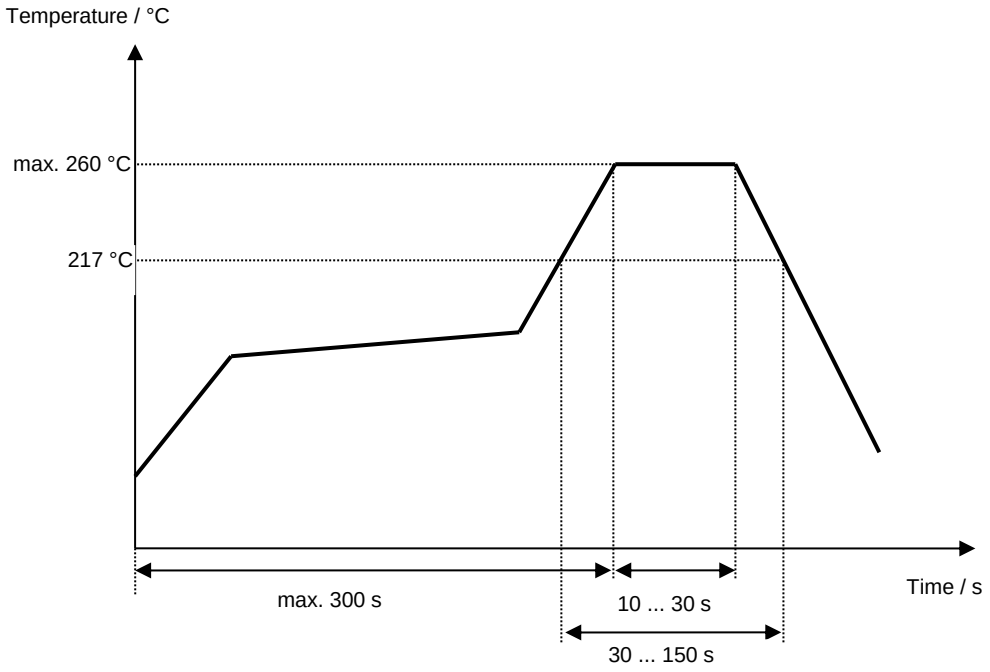
Air reflow temperature conditions

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	Chilla	22.07.2010
1.1	- Generated filter specification - Added terminating impedances - Added typical values - Added filter characteristics - Added test circuit	Chilla	30.11.2011
1.2	- Change storage temperature range	Bonnen	18.11.2016
1.3	- Add maximum input power level - Update 50Ω test circuit	Bonnen	23.03.2017
1.4	- Update construction and pin connection	Bonnen	27.03.2017

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