Measurement condition

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Terminating impedance:
Input: 570 Ω || -2.4 pF
Output: 570 Ω || -2.4 pF
External Coil: 220 nH

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS300P 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 300 MHz without any tolerance. The values of relative attenuation a_{rel} are guaranteed over the whole operating temperature range. The frequency shift of the filter within the operating temperature range is included in the production tolerance scheme.

D a t a		**typ. value**		**tolerance / limit**		
Insertion loss	a_e	3.5	dB	max.	5	dB
Nominal frequency	f_N	-			300.0	MHz
Passband	PB			f_N	± 0.1	MHz
Passband ripple	PBR	0.7	dB	max.	2.0	dB
Relative attenuation	a_{rel}					
f_N ± 1 MHz … f_N ± 100 MHz		46	dB	min.	40	dB
Input power level		-		max.	15	dBm
Operating temperature		-			-40 °C ... +85 °C	
Storage temperature range		-			-55 °C ... +125 °C	
Frequency inversion temperature	T_0	33	°C			
Temperature coefficient of frequency	TC_f *)	-0.036	ppm/K²			

*) $\Delta f = TC_f(T - T_0)^2 f_N$

Generated:

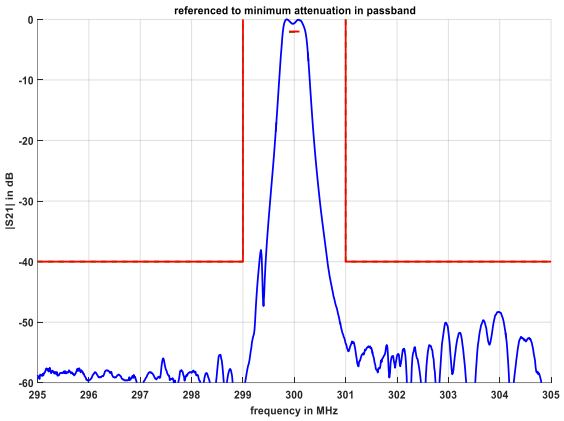
Checked / Approved:

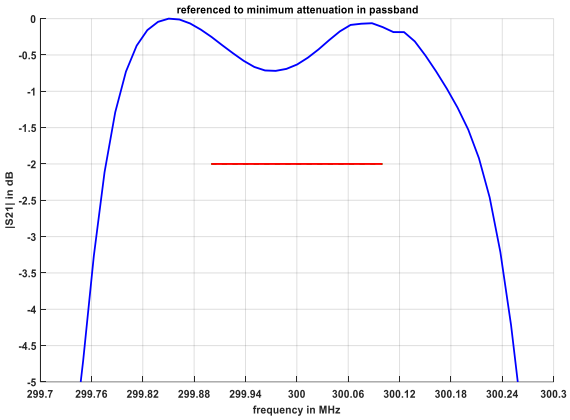
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Filter characteristic

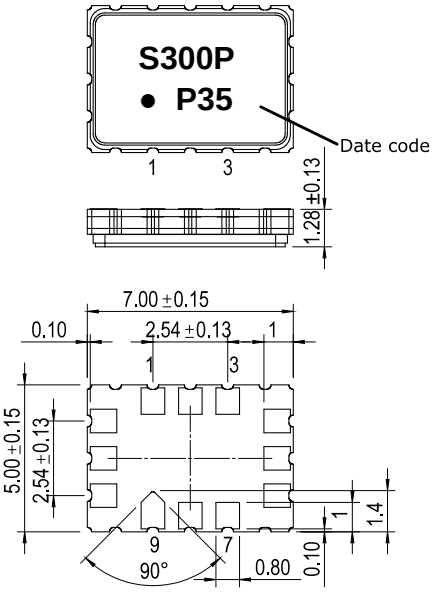
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Construction and pin connection

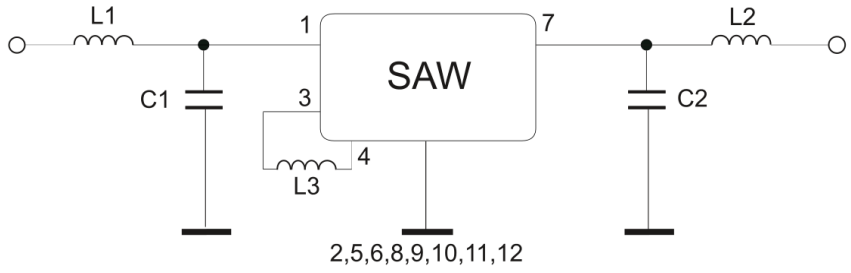
(All dimensions in mm)



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

Date code:	Year + week
P	2022
R	2023
S	2024
...	

50 Ω Test circuit



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Stability characteristics, reliability

1. Shock: 1500 g, 0.5 ms, half sine wave, 5 Shocks each of the orientations acc. to MIL-STD-883, Method 2002, Cond. B

2. Vibration: 10 Hz to 2000 Hz, 20 g acc. to MIL-STD-883, Method 2007, Cond. A

3. Temperature cycling: 100 cycles, -55 °C to 125 °C / 15 min. dwell time acc. to MIL-STD-883, Method 1010, Cond. B

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+2015/863/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;

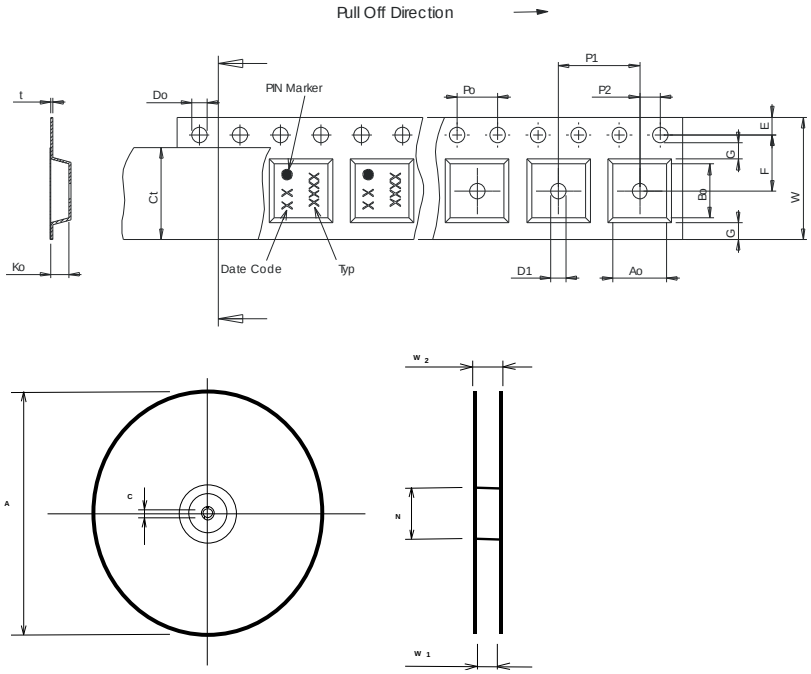
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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.

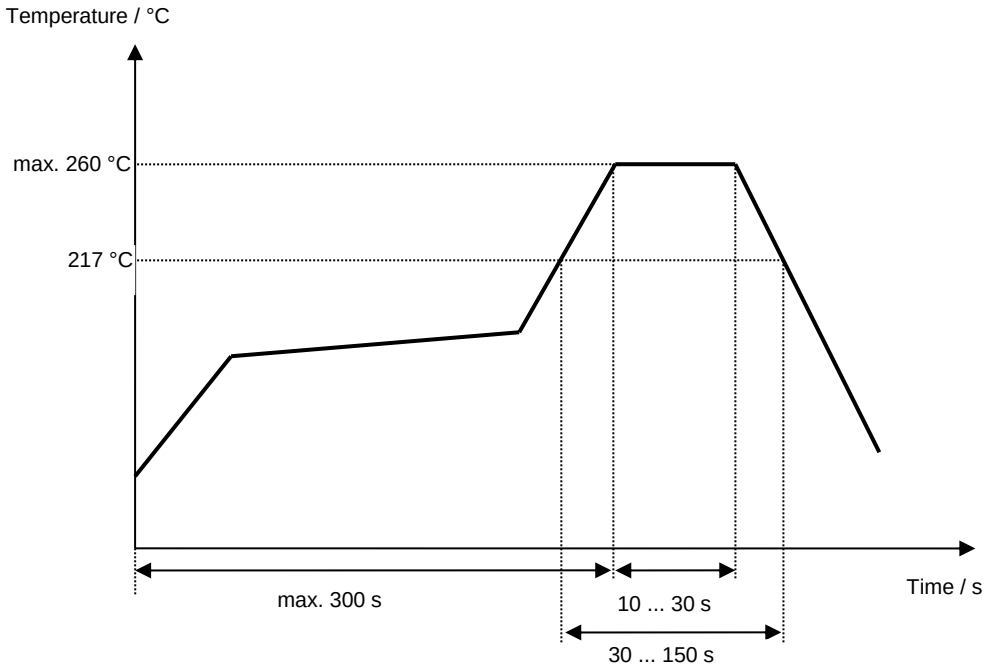
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Air reflow temperature conditions

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	Bonnen	17.12.2019
1.1	- Generation of filter specification	Bonnen	08.10.2020
1.2	- Correct typo	Bonnen	19.10.2020
2.0	- Update frequency inversion temperature	Bonnen	17.11.2020
3.0	- Update construction	P. Jaster	29.08.2022

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