Measurement condition

Ambient temperature T_0: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 50 Ω
Output: 50 Ω

Source: 677Ω || -1pF
Load: 677Ω || -1pF

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} is the minimum attenuation in the pass band PB. The maximum attenuation in the pass band PB is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 917.6 MHz without any tolerance or limit. The values of relative attenuation a_{rel} are guaranteed for 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**		
Nominal frequency	f_N		-			917.6	MHz
Passband	PB		-		f_N ±	12.5	kHz
Insertion loss within PB	a_e		2.8	dB	max.	3.5	dB
Relative attenuation	a_{rel}						
880.0 MHz … 914.8 MHz			22	dB	min.	20	dB
920.5 MHz … 950.0 MHz			23	dB	min.	20	dB
Input power level	**)		-		max.	20	dBm
Operating temperature range	OTR		-			0 °C ... + 40	°C
Operational temperature range			-			- 10 °C ... + 55	°C
Storage temperature range			-			- 40 °C ... + 85	°C
Temperature coefficient of frequency	TC_f	***)	-0.044	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.

**) @914.8MHz with duty cycle 1:8

***) $\Delta f_C(Hz) = Tc_f\,(ppm/K^2) \times (T - T_o)^2 \times f_{To}\,(MHz)$

Generated:

Checked / Approved:

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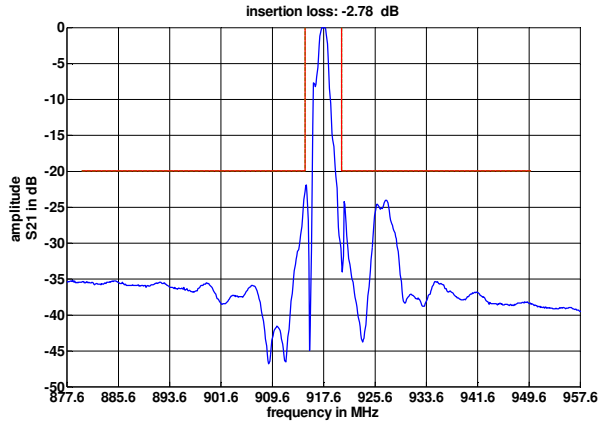
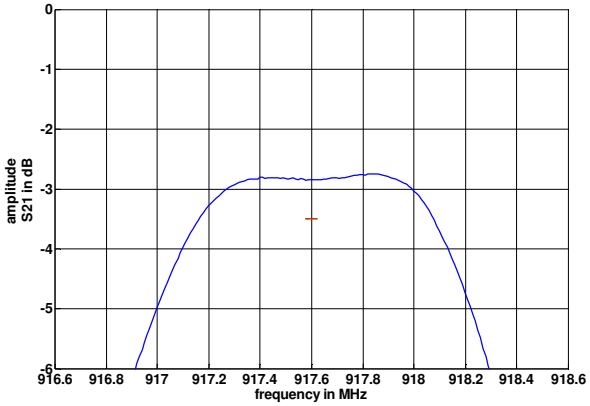
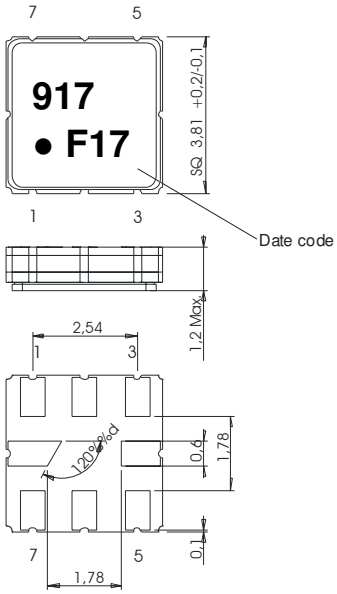
Filter characteristic





Construction and pin connection

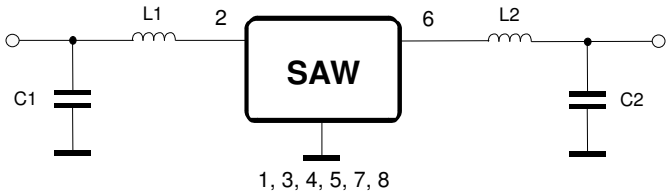
(All dimensions in mm)



1	Ground
2	Input
3	Ground
4	Ground
5	Ground
6	Output
7	Ground
8	Ground

Date code:	Year + week
F	2015
G	2016
H	2017
...	

50 Ohm 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 68 T2 - 27
2. Vibration:	10 Hz to 500 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 68 T2 - 6
3. Change of temperature:	-55 °C to 125 °C / 15 min. each / 100 cycles DIN IEC 68 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;

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

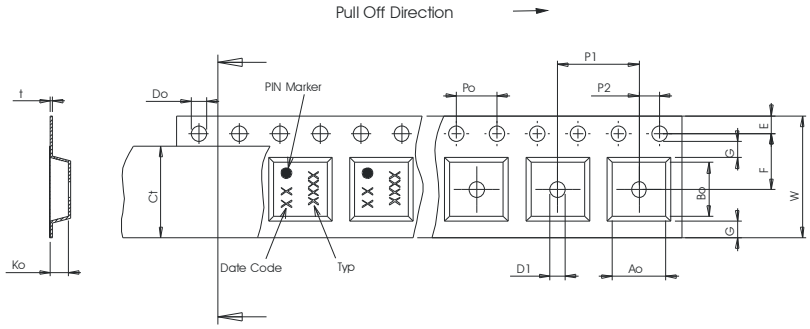
Packing

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

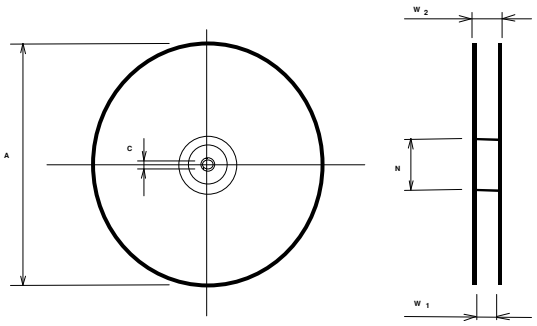
Tape (all dimensions in mm)

W	:	12.00 ± 0.3
Po	:	4.00 ± 0.1
Do	:	1.50 + 0.1/-0
E	:	1.75 ± 0.1
F	:	5.50 ± 0.05
G(min)	:	0.75
P2	:	2.00 ± 0.05
P1	:	8.00 ± 0.1
D1(min)	:	1.50
Ao	:	4.30 ± 0.1
Bo	:	4.30 ± 0.1
Ct	:	9.2 ± 0.1



Reel (all dimensions in mm)

A	:	330 or 180
W1	:	12.4 +2/-0
W2(max)	:	18.4
N(min)	:	50
C	:	13.0 +0.5/-0.2



The minimum bending radius is 45 mm.

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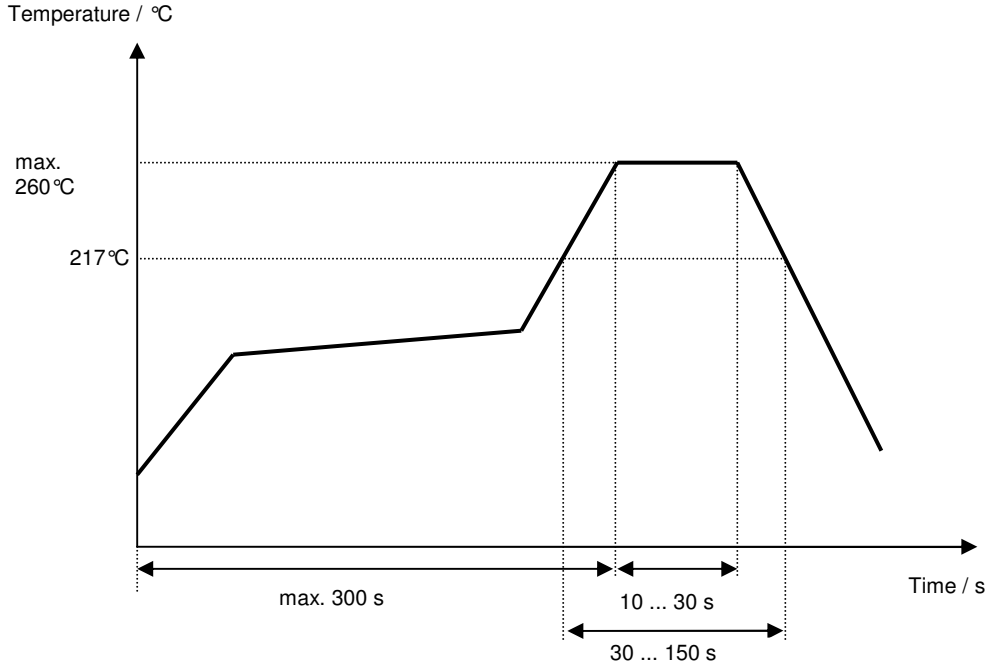
Air reflow temperature conditions

Conditions	**Exposure**
Average ramp-up rate (30℃ to 217℃)	less than 3℃/second
> 100℃	between 300 and 600 seconds
> 150℃	between 240 and 500 seconds
> 217℃	between 30 and 150 seconds
Peak temperature	max. 260℃
Time within 5℃ of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50℃)	less than 6℃/second
Time from 30℃ 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	S.Springfeldt	06.02.2015
2.0	Correction of attenuation in the range of 880MHz to 914.8MHz Adding attenuation requirement in the upper range (920.5MHz to 950MHz)	S.Springfeldt	19.02.2015
3.0	Change to 3.8x3.8 package due to customer desire	S.Springfeldt	02.03.2015
3.1	Generation of filter specification	S.Springfeldt	20.04.2015

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