Measurement condition

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

Characteristics

Remark:
The maximum attenuation in the pass band is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 1920.0 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} 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 within PB					a_e	2.8	dB	max.	4.0	dB
Nominal frequency					f_N	-			1920.0	MHz
Passband					PB	-			f_N ± 9.0	MHz
Pass band variation						0.6	dB		0.8	dB
Absolute attenuation					a_{abs}					
1	MHz	…	1750	MHz		45	dB	min.	40 *)	dB
1750	MHz	…	1870	MHz		42	dB	min.	35	dB
1870	MHz	…	1880	MHz		40	dB	min.	30	dB
1880	MHz	…	1890	MHz		26	dB	min.	15	dB
1890	MHz	…	1900	MHz		8	dB	min.	4	dB
1940	MHz	…	1950	MHz		6	dB	min.	4	dB
1950	MHz	…	1960	MHz		15	dB	min.	10	dB
1960	MHz	…	1965	MHz		40	dB	min.	30	dB
1965	MHz	…	2200	MHz		55	dB	min.	40	dB
2200	MHz	…	2500	MHz		50	dB	min.	35	dB
2500	MHz	…	3200	MHz		40	dB	min.	30	dB
3200	MHz	…	4000	MHz		35	dB	min.	25	dB
Group delay variation within PB					GDV	8	ns	max.	40	ns
Input power level						-		max.	15	dBm
Operating temperature range					OTR	-			-40 °C ... +85 °C	
Storage temperature range						-			-55 °C ... +125 °C	

*) Spurious of up to 35 dB between 1540 MHz and 1550 MHz with 3 dB bandwidth < 1 MHz.

Generated:

Checked / Approved:

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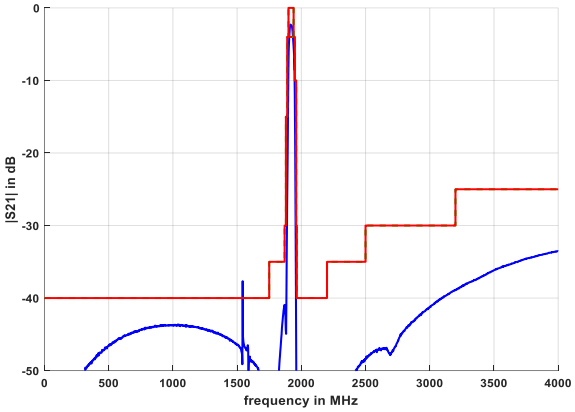
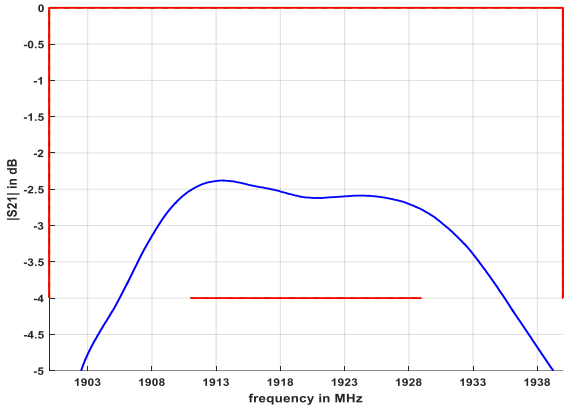
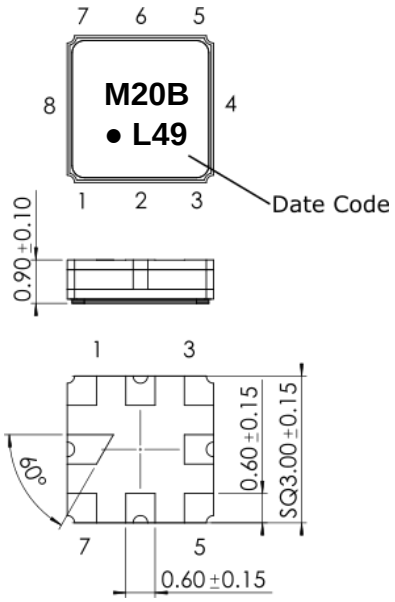
Filter characteristic





Construction and pin connection

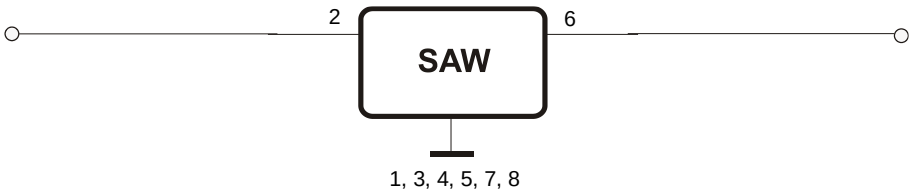
(All dimensions in mm)



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

Date code:	Year + week
L	2019
M	2020
N	2021
...	

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;

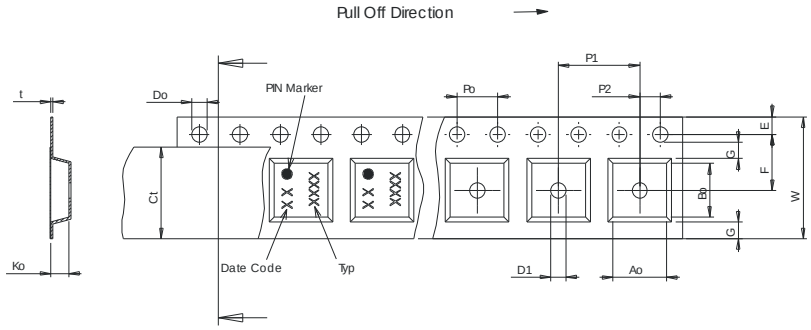
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

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;

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

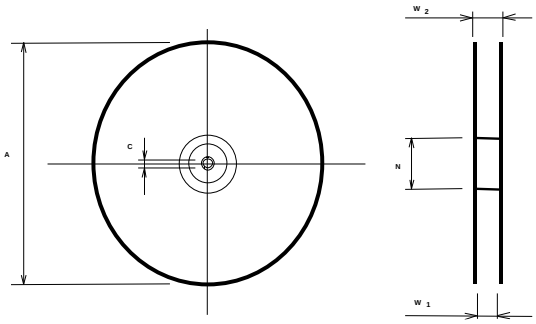


Tape (all dimensions in mm)

W	:	8.00	±0.3
Po	:	4.00	±0.1
Do	:	1.50	+0.1/-0
E	:	1.75	±0.1
F	:	3.50	±0.05
G(min)	:	0.75	
P2	:	2.00	±0.05
P1	:	4.00	±0.1
D1(min)	:	1.50	
Ao	:	3.25	±0.1
Bo	:	3.25	±0.1
Ct	:	5.30	±0.1
Ko	:	1.50	±0.1
t	:	0.25	±0.05

Reel (all dimensions in mm)

A	:	330	or 180
W1	:	8.40	+1.5/-0
W2(max)	:	14.40	
N(min)	:	60.00	
C	:	13.0	±0.2



The minimum bending radius is 45 mm.

Air reflow temperature conditions

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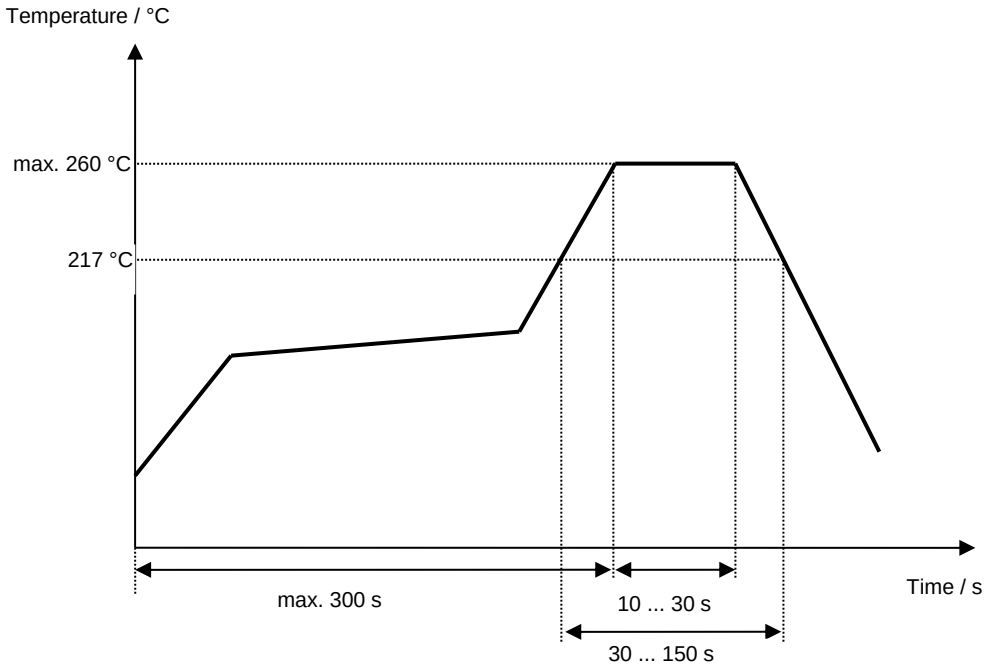
Conditions	**Exposure**
Average ramp-up rate (30 °C to 217 °C)	less than 3 °C / second
> 100 °C	between 300 and 600 seconds
> 150 °C	between 240 and 500 seconds
> 217 °C	between 30 and 150 seconds
Peak temperature	max. 260 °C
Time within 5 °C of actual peak temperature	between 10 and 30 seconds
Cool-down 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.	P. Jaster	06.08.2019
2.0	Generation of filter specification.	Schönbein	04.12.2019

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