Measurement condition

Ambient temperature T_A:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	200	Ω
Output:	200	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 1601.5 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 in PB1	a_e	2.0	dB	max.	3.0	dB
Nominal frequency	f_N	-			1601.5	MHz
Passband 1	PB_1	-		f_N ±	8.5	MHz
Passband 2	PB_2	-		f_N ±	4.0	MHz
Passband variation within PB1	PBV_1	0.5	dB	max.	2.0	dB
Absolute attenuation	a_{abs}					
0.3 MHz … 1560.0 MHz		38	dB	min.	35	dB
1645.0 MHz … 2500.0 MHz		48	dB	min.	35	dB
Group delay ripple within PB1	GDR_1	6	ns	max.	15	ns
Group delay ripple within PB2	GDR_2	4	ns	max.	10	ns
Group delay variation (unit to unit)	*)	+/-2	ns	max.	+/-4	ns
VSWR within PB1		1.6 : 1		max.	2.3 : 1	
Input power level in PB1		-		max.	20	dBm
Operating temperature range	OTR	-		-40 °C ... +85 °C		
Storage temperature range		-		-55 °C ... +125 °C		
Temperature coefficient of frequency	TC_f **)	-43	ppm/K			

*) measured at: f_N , f_N + 4 MHz , f_N - 4 MHz
**) $\Delta f = TC_f(T - T_A)f_N$

Generated:

Checked / Approved:

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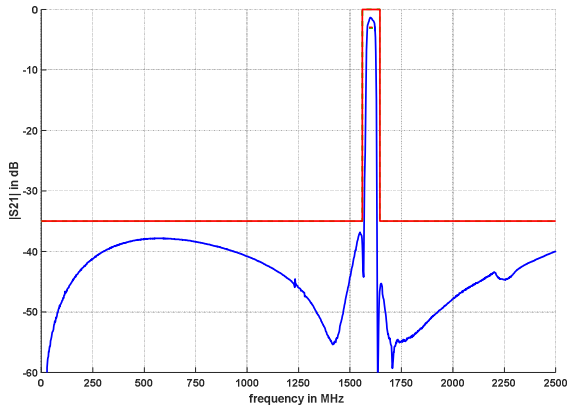
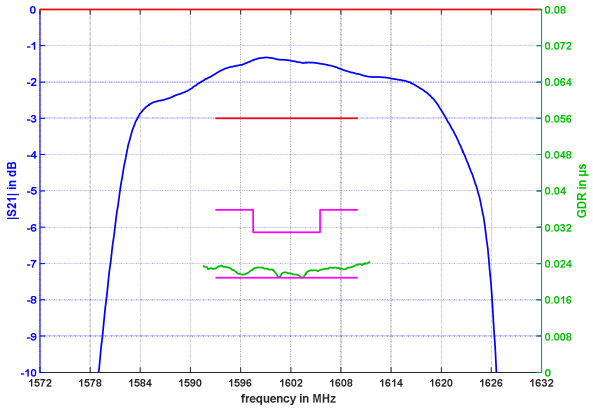
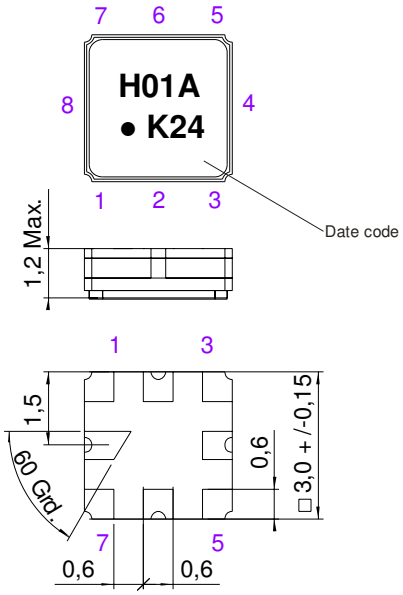
Filter characteristic





Construction and pin connection

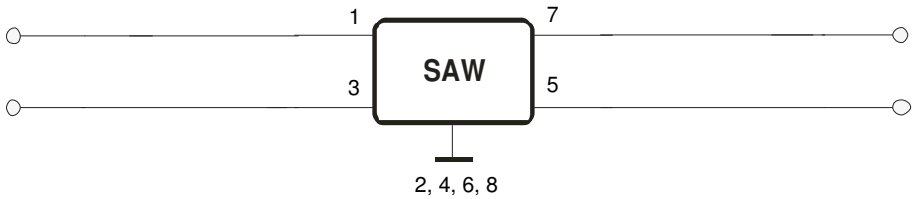
(All dimensions in mm)



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

Date code:	Year + week
K	2018
L	2019
M	2020
...	

200 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;

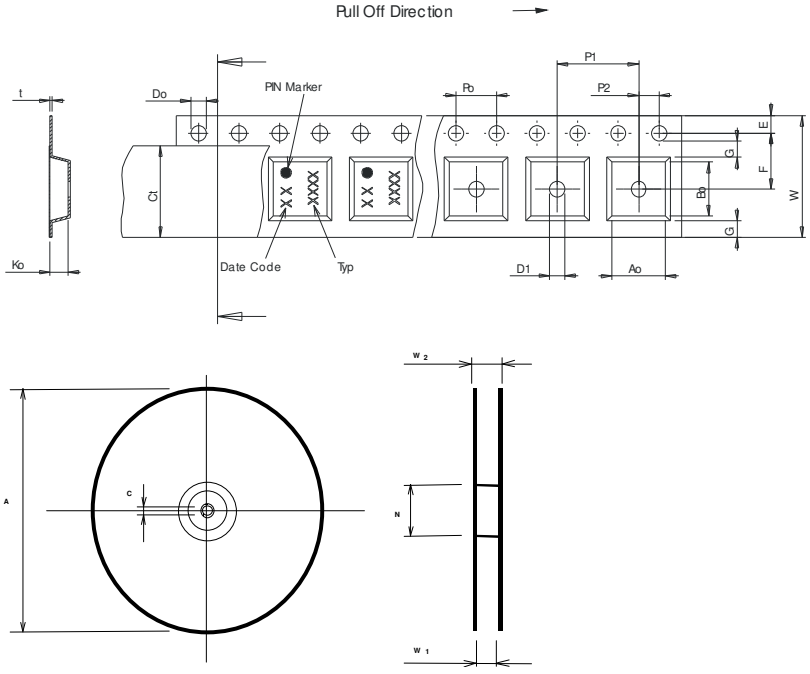
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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.

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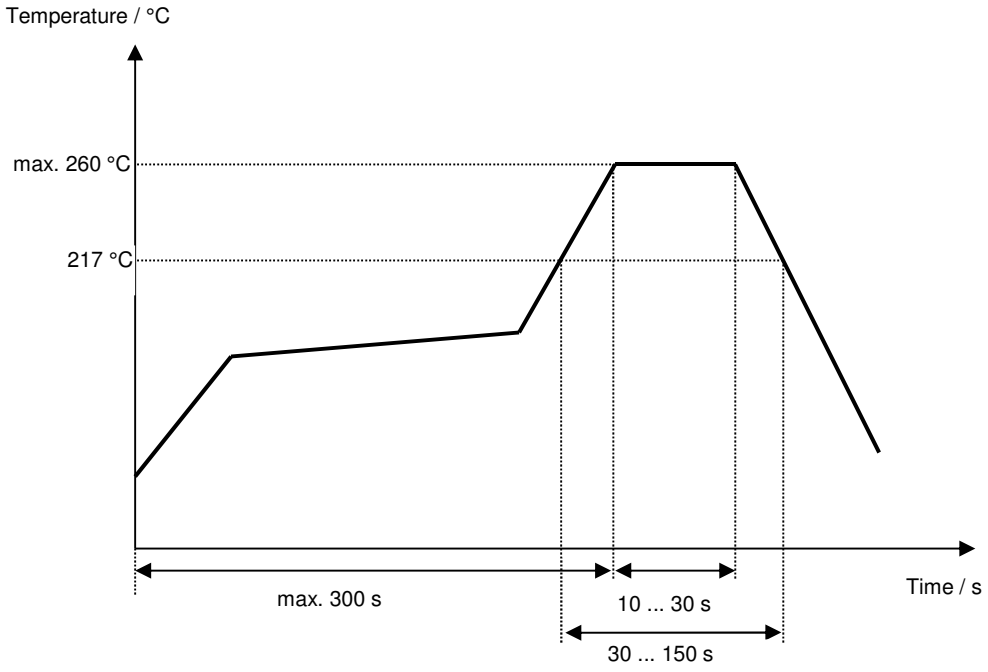
Air reflow temperature conditions

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 filter specification	Molke	27.08.2013
2.0	updated data table updated construction updated Tape & Reel	P. Jaster	02.05.2018
3.0	updated filter characteristic updated package	P. Jaster	11.06.2018

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