Measurement condition

Ambient temperature T_A:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Source:	50	Ohm
Load:	50	Ohm

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 675 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	4	dB	max.	5 *)	dB
Nominal frequency			f_N	-			675.0	MHz
Passband			PB	-		f_N ±	4.0	MHz
Passband variation			PBV	1.2	dB	max.	1.7 **)	dB
1 dB bandwidth			BW1	10.7	MHz	min.	9.5	MHz
Absolute attenuation			a_{abs}	-				
1	MHz	… 661	MHz	75	dB	min.	45	dB
690.5	MHz	… 706	MHz	30	dB	min.	26	dB
706	MHz	… 850	MHz	65	dB	min.	45	dB
850	MHz	… 1500	MHz	65	dB	min.	45	dB
VSWR within PB				1.5:1		max.	1.8:1	
Input power level				-		max.	0	dBm
Operating temperature range			OTR	-			-40 ... +85	°C
Storage temperature range				-			-55 … +125	°C
Temperature coefficient of frequency			TC_f ***)	-36	ppm/K		-	

*) 3.7 dB at ambient temperature T_A.
**) 1.0 dB at ambient temperature T_A.
***) $\Delta f = TC_f(T - T_A)f_N$

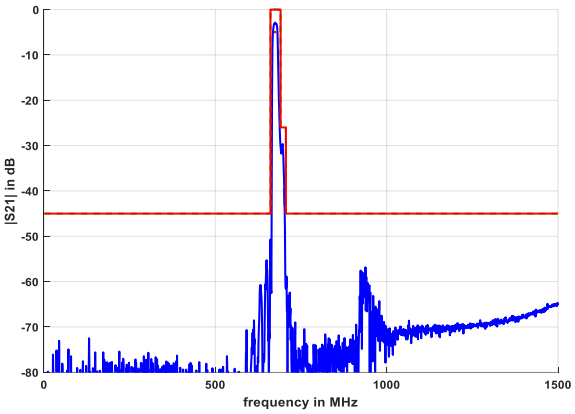
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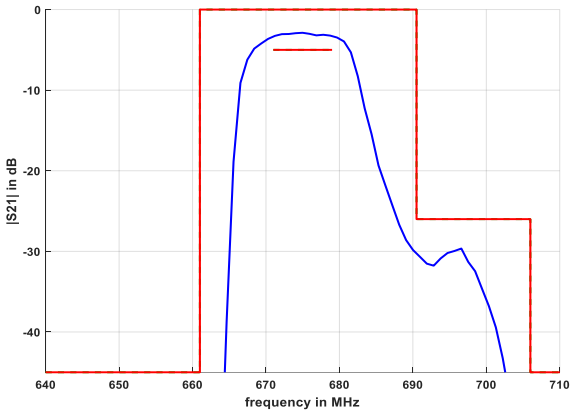
Checked / Approved:

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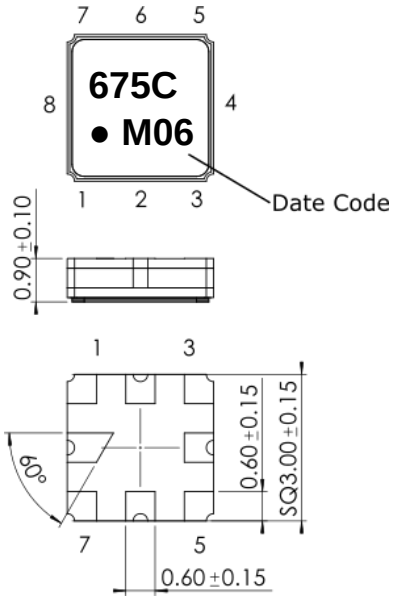
Filter characteristic





Construction and pin connection

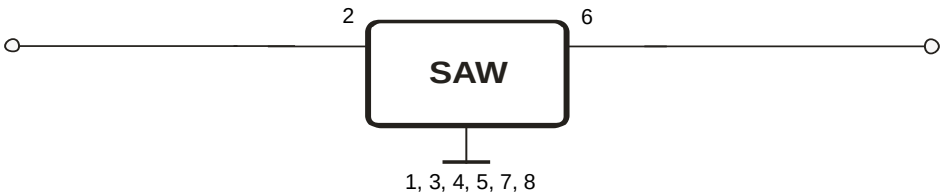
(All dimensions in mm)



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

Date code:	Year + week
M	2020
N	2021
P	2022
...	

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;

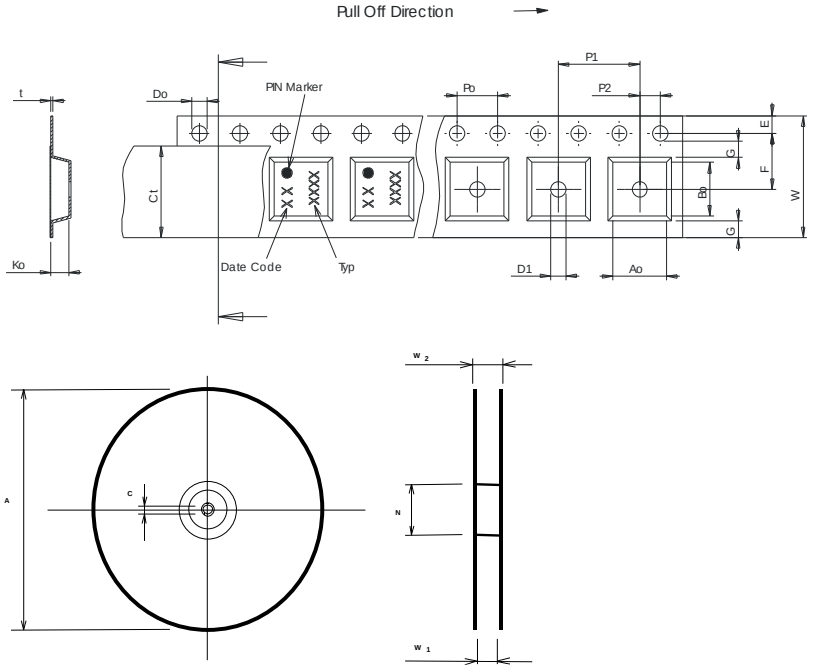
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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.

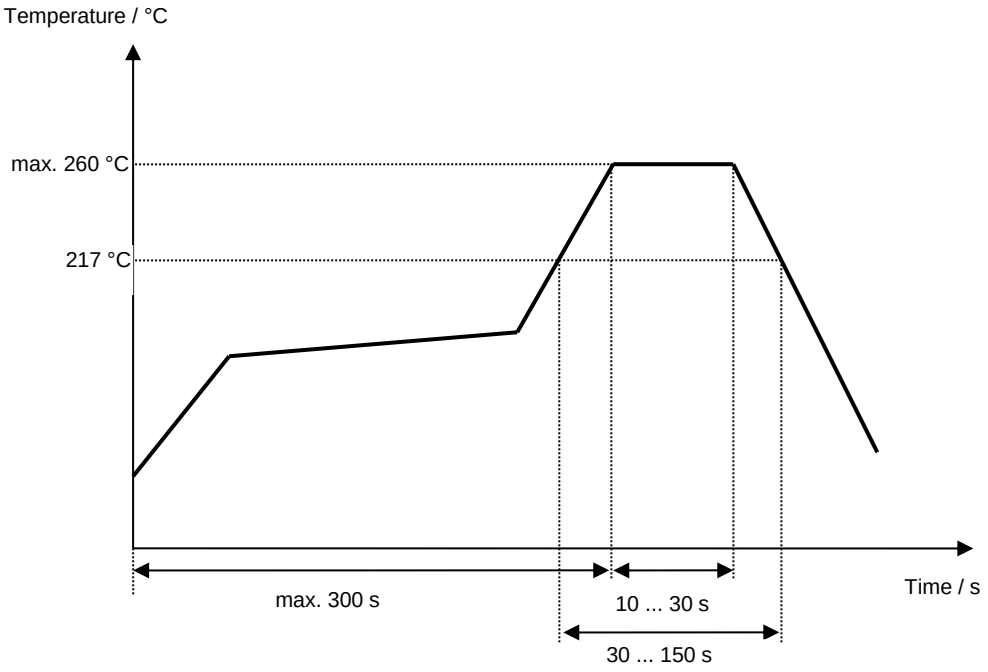
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Air reflow temperature conditions

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	P. Jaster	18.06.2019
2.0	Generation of filter specification with modifications in data table: - max. insertion loss increased from 4.5 dB to 5.0 dB in full OTR - max. insertion loss increased from 3.5 dB to 3.7 dB @ ambient temperature - max. passband variation increased from 1.5 dB to 1.7 dB in full OTR - min. absolute attenuation from 690.5 MHz to 705 MHz: upper frequency limit changed from 705 MHz to 706 MHz, attenuation decreased from 30 dB to 26 dB - min. absolute attenuation from 850 MHz to 1500 MHz improved from 42 dB to 45 dB	P. Jaster	04.02.2020

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