

Microchip**Filter specification****TFS608A****1/5****Measurement condition**

Ambient temperature T_A :	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	213.9 Ω	-2.2 pF
Output:	213.9 Ω	-2.2 pF

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS608A is the minimum attenuation in the pass band. The maximum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 608.0 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		
Insertion loss		a_e	3.0 dB	max.	5.0	dB
Insertion loss at ambient temperature			2.5 dB	max.	3.5	dB
Nominal frequency		f_N	-		608.0	MHz
Passband		PB	-	$f_N \pm$	0.01	MHz
Passband variation			0.3 dB	max.	1.5	dB
Relative attenuation		a_{rel}				
100.0 MHz	... 604.0 MHz		38 dB	min.	30	dB
604.0 MHz	... 607.0 MHz		20 dB	min.	10	dB
609.0 MHz	... 609.5 MHz		28 dB	min.	10	dB
609.5 MHz	... 612.0 MHz		41 dB	min.	15	dB
612.0 MHz	... 1000.0 MHz		39 dB	min.	30	dB
Input power level			-	max.	13	dBm
Operating temperature range		OTR	-		-40 ... +85	°C
Frequency inversion temperature		T_0	20 °C		-	
Storage temperature range			-		-55 ... +125	°C
Temperature coefficient of frequency		TC_f^*	-0.030 ppm/K ²		-	

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

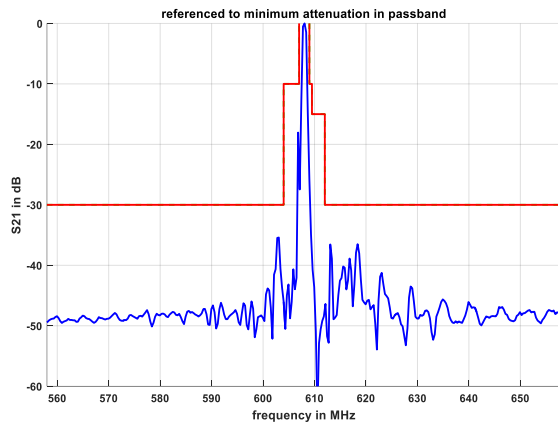
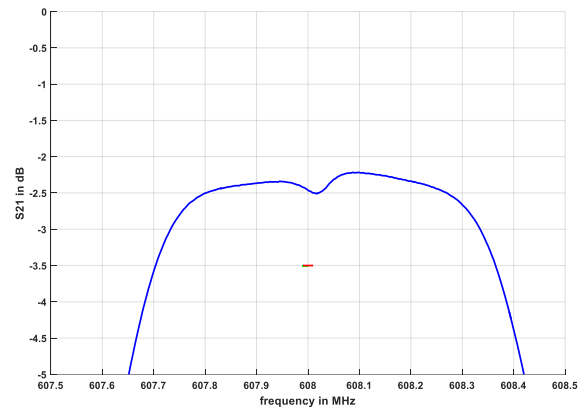
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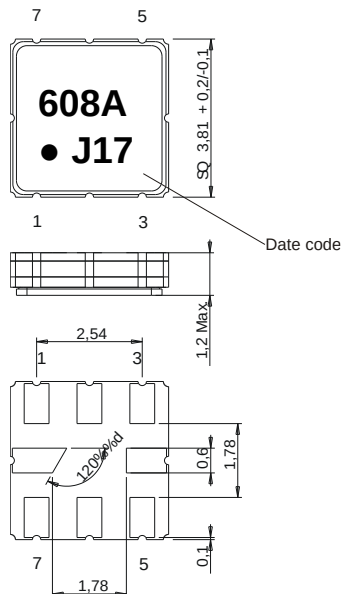
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Filter characteristic



Construction and pin connection

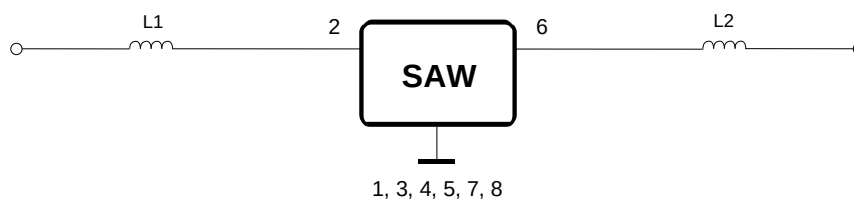
(All dimensions in mm)



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

Date code:	Year + week
J	2017
K	2018
L	2019
...	

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;

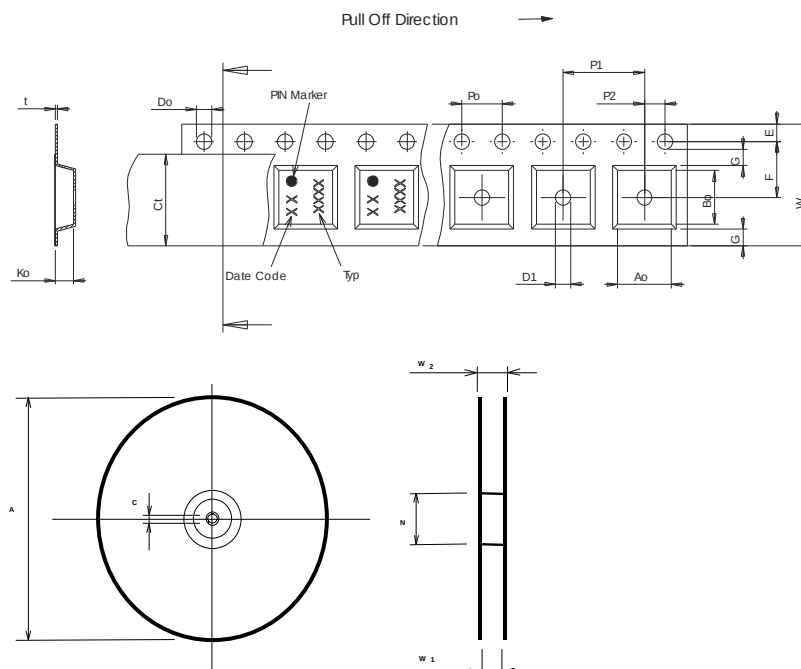
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 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



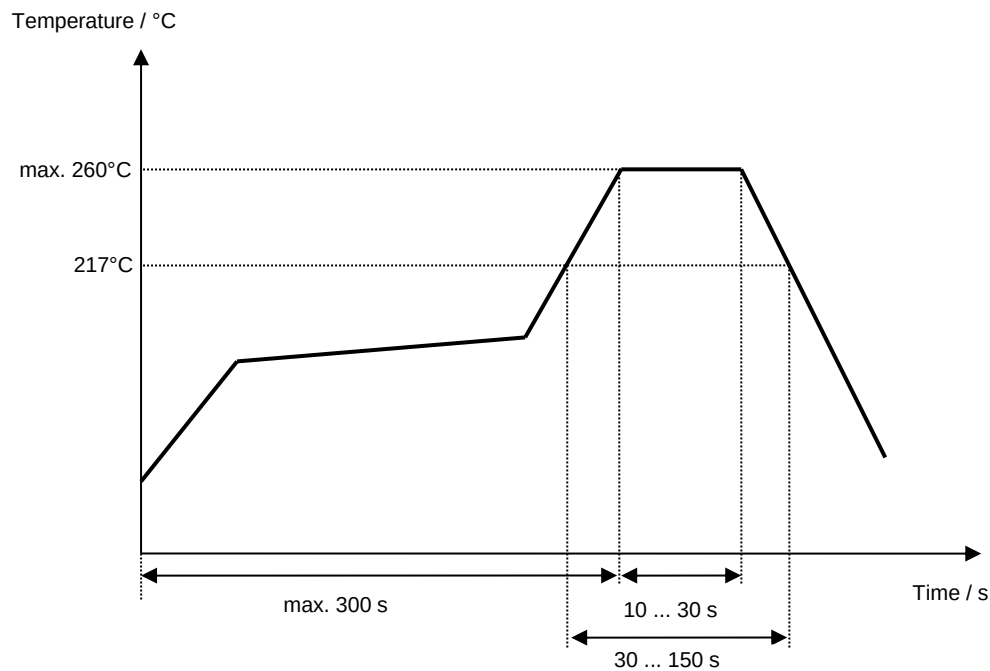
The minimum bending radius is 45 mm.

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**History**

Version Reason of Changes

Name

Date

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Microchip		Filter specification	TFS608A	5/5
1.0	Generation of development specification.		Schönbein	16.01.2017
1.1	Package changed from 3x3 mm ² to 3.8x3.8 mm ²		Schönbein	16.02.2017
1.2	Generation of filter specification.		Schönbein	24.04.2017