

Microchip**Filter specification****TFS1905B****1/5****Measurement condition**

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

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 1905 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	a_e	2.1	dB	max.	4	dB
Nominal frequency	f_N	-			1905	MHz
Passband	PB	-		$f_N \pm$	25	MHz
Passband ripple (p-p)	PBR	1	dB	max.	2	dB
Absolute attenuation	a_{abs}					
0.3 MHz ... 1800.0 MHz		30	dB	min.	28	dB
2100.0 MHz ... 3000.0 MHz		33	dB	min.	32	dB
Return loss within PB	RL	11.5	dB	max.	8	dB
Input power level				max.	5	dBm
Operating temperature range	OTR	-			-40 °C ... +85 °C	
Storage temperature range		-			-55 °C ... +125 °C	
Temperature coefficient of frequency	TC_f *)	-46	ppm/K			

*) $\Delta f = TC_f(T - T_A)f_N$

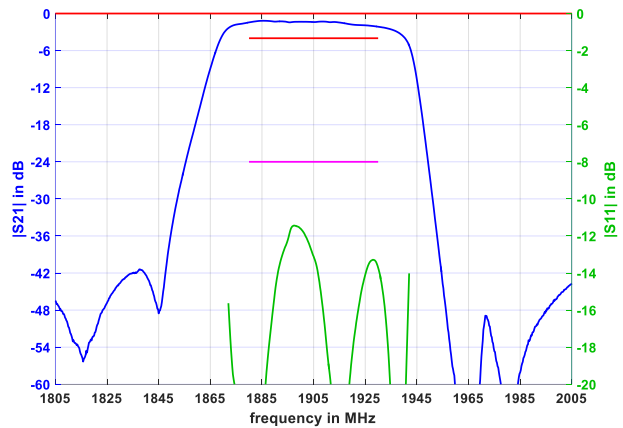
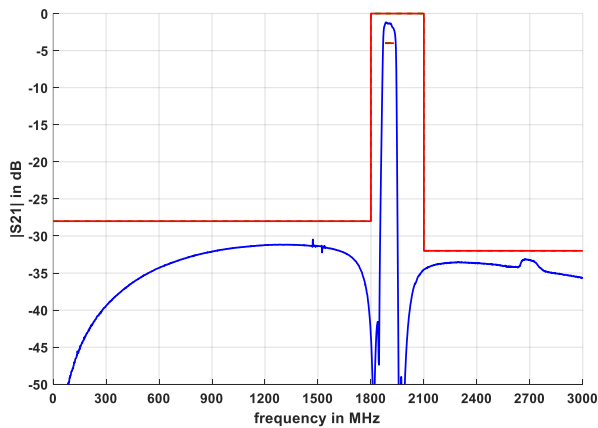
Generated: _____

Checked / Approved: _____

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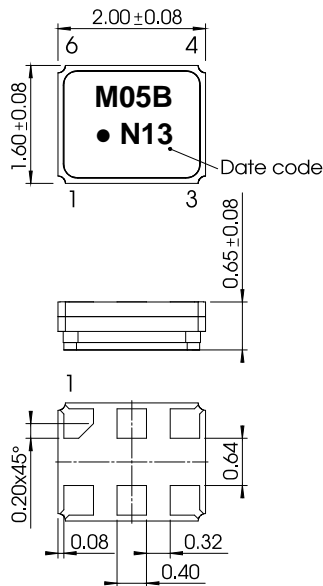
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Filter characteristic



Construction and pin connection

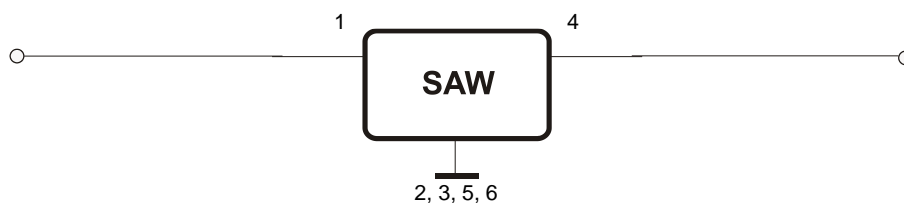
(All dimensions in mm)



- 1 Input
- 2 Ground
- 3 Ground
- 4 Output
- 5 Ground
- 6 Ground

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

50 Ohm Test circuit



Stability characteristics, reliability

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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+2015/863/EU)

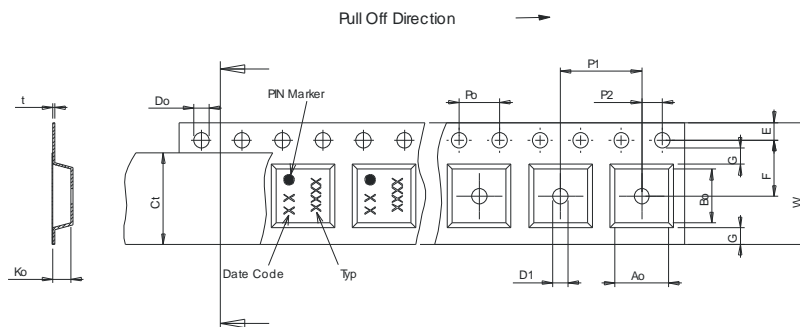
Packing

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

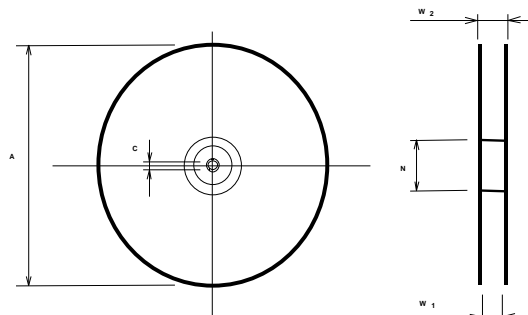
Tape (all dimensions in mm)

- W : 8.00 +0.3/-0.1
- Po : 4.00 ±0.1
- Do : 1.55 ±0.05
- 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) : 1.00
- Ao : 1.80 ±0.05
- Bo : 2.25 ±0.05
- Ct : 5.30 ±0.1
- Ko : 0.90 ±0.05
- t : 0.30 ±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



Microchip**Filter specification****TFS1905B****5/5**

History

Version	Reason of Changes	Name	Date
1.0	Generation of development specification based on 1905_RFQ3_4c	P. Jaster	21.07.2020
2.0	Added input power level requirements	P. Jaster	11.08.2020
3.0	Adjusting data table (upper stopband limit) Generation of filter specification	S. Springfeldt	29.03.2021