

**Microchip****Filter specification****TFS 793A****1/5****Measurement condition**

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

**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 793 MHz without any tolerance or limit. The values of absolute attenuation  $a_{abs}$  are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

<b>D a t a</b>		<b>typ. value</b>		<b>tolerance / limit</b>		
<b>Insertion loss</b>	$a_e$	0.8	dB	max.	3	dB
<b>Nominal frequency</b>	$f_N$	-			793	MHz
<b>Passband</b>	PB	-		$f_N$	± 6	MHz
<b>Pass band variation</b>		0.7	dB	max.	2	dB
<b>Absolute attenuation</b>	$a_{abs}$					
0,3 MHz ... 772 MHz		31	dB	min.	25	dB
818 MHz ... 830 MHz		35	dB	min.	20	dB
956 MHz ... 968 MHz		33	dB	min.	25	dB
1125 MHz ... 1138 MHz		33	dB	min.	20	dB
1200 MHz ... 2000 MHz		35	dB	min.	20	dB
<b>Group delay ripple</b>		14	ns	max.	40	ns
<b>Return loss within PB</b>		17	dB	min.	12	dB
<b>Input power level</b>		-		max.	25	dBm
<b>Operating temperature range</b>	OTR	-			- 40 °C ... + 85 °C	
<b>Storage temperature range</b>		-			- 55 °C ... +105 °C	
<b>Temperature coefficient of frequency</b>	$TC_f$ **	-41	ppm/K			-

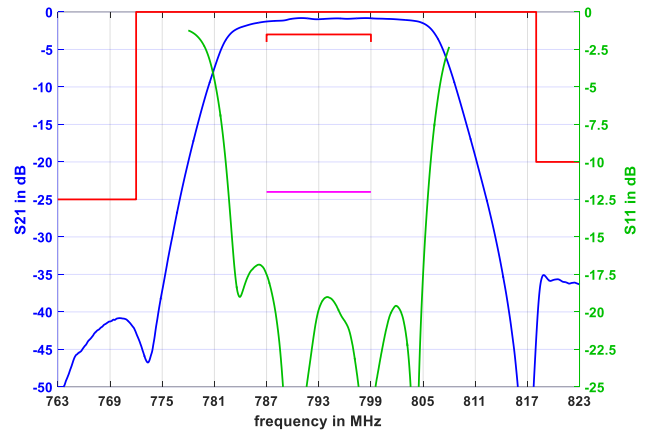
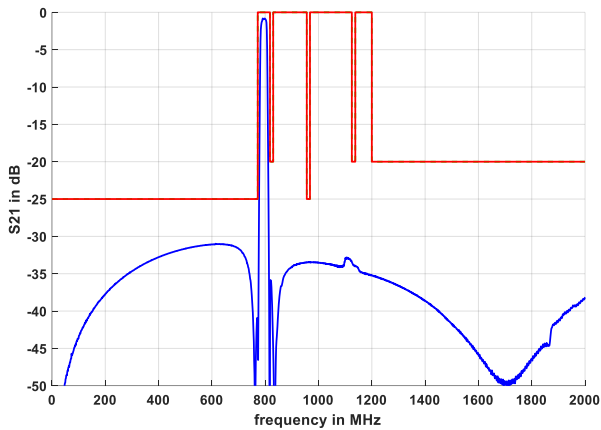
$$*) \Delta f = TC_f(T - T_A)f_N$$

**Generated:****Checked / Approved:**

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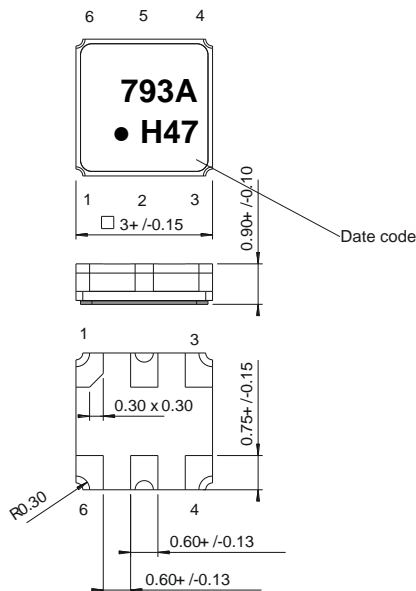
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**Filter characteristic**



**Construction and pin connection**

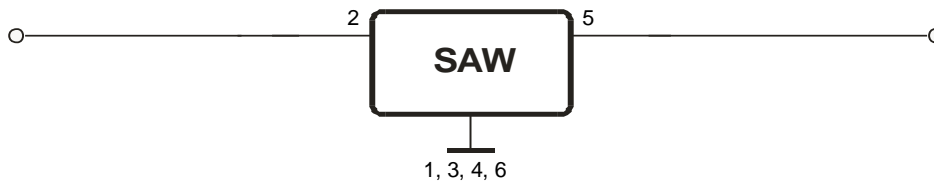
(All dimensions in mm)



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

Date code: Year + week  
 H 2016  
 J 2017  
 K 2018  
 ...

**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)

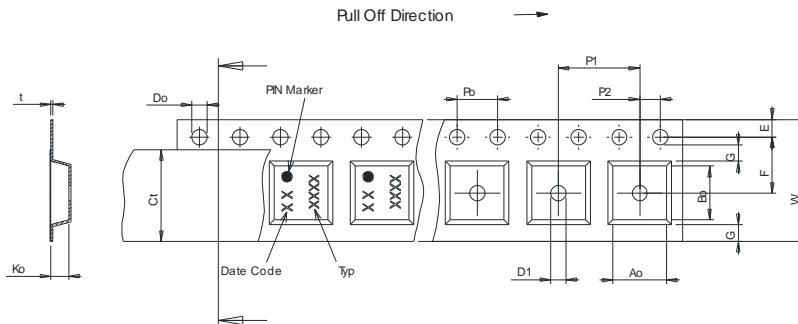
**Packing**

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

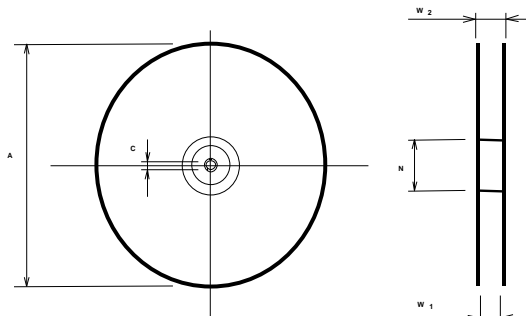
**Tape (all dimensions in mm)**

- 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.

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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
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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**Microchip****Filter specification****TFS 793A****5/5**

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**History**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	- Generation of development specification (high power version of TFS793)	S. Springfeldt	16.11.2016

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