

VI TELEFILTER

Filter specification

TFS 491A

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	150 Ω	
Output:	150 Ω	

Characteristics

Remark:

The nominal frequency f_N is fixed at 491,52 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 491A is the insertion loss a_e . The centre frequency f_C is the arithmetic mean value of the upper and lower frequencies at the dB filter attenuation level relative to the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit	
Insertion loss (reference level)		a_e	2,4 dB	4,5	dB
Nominal frequency		f_N	-	491,52	MHz
Centre frequency		f_C	491,90 MHz	-	
Bandwidth 3 dB		BW	17,83 MHz	-	
Relative attenuation		a_{rel}			
$f_N -$	61,44 MHz ... 91,52 MHz		52 dB	min.	50 dB
$f_N -$	91,52 MHz ... 61,44 MHz		52 dB	min.	46 dB
$f_N +$	61,44 MHz ... 1000,00 MHz		55,5 dB	min.	50 dB
@	122,88 MHz		66,3 dB	min.	60 dB
@	245,76 MHz		64 dB	min.	60 dB
@	368,64 MHz		66,6 dB	min.	55 dB
@	614,40 MHz		64 dB	min.	55 dB
@	737,28 MHz		62,6 dB	min.	54 dB
Operating temperature range		OTR	-	- 40 °C ... + 85 °C	
Storage temperature range			-	- 45 °C ... + 95 °C	
Temperature coefficient of frequency		TC_f^*	-73 ppm/K		

*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

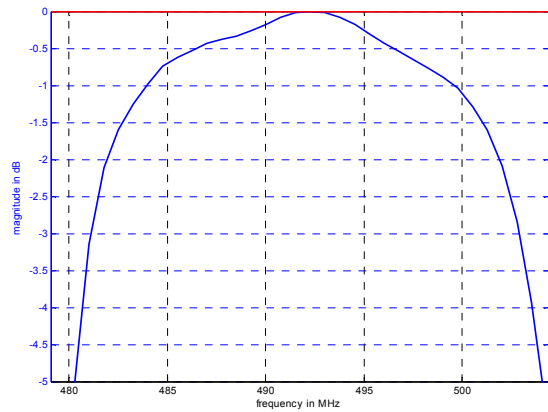
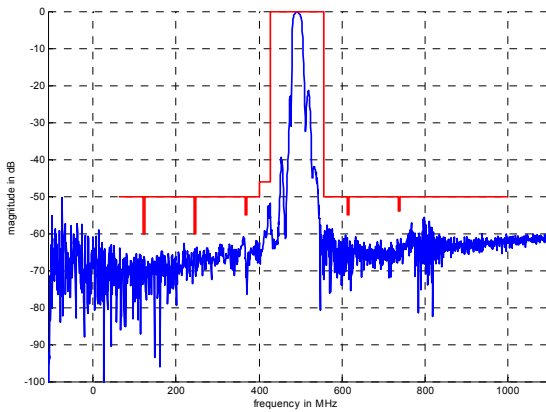
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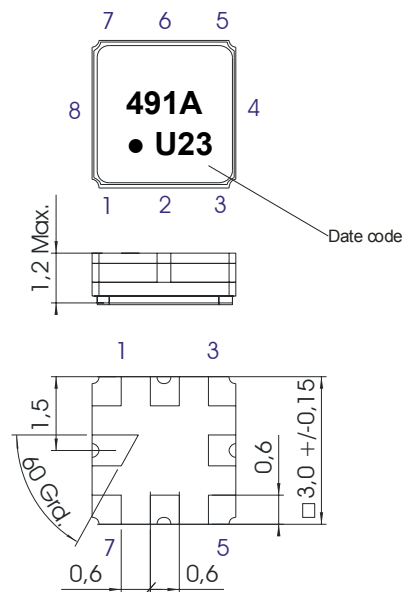
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Filter characteristic



Construction and pin connection

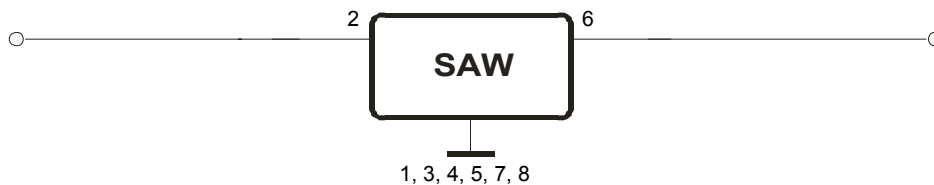
(All dimensions in mm)



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

Date code: Year + week
 U 2006
 V 2007
 W 2008
 ...

150 Ω Test circuit



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Stability characteristics, reliability

After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5 g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles
DIN IEC 68 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;

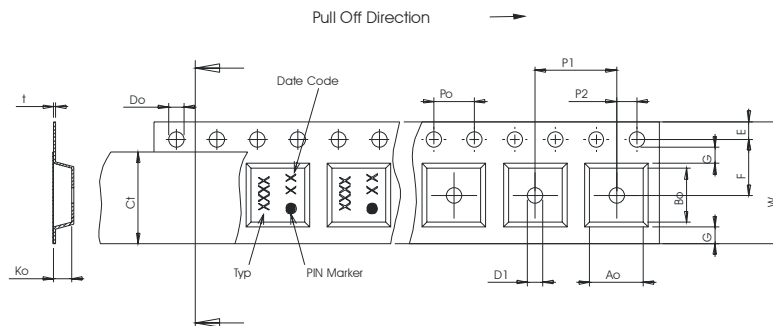
This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

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: | 9000 |
| reel of empty components at start: | min. 300 mm |
| reel of empty components at start including leader: | min. 500 mm |
| trailer: | min. 300 mm |

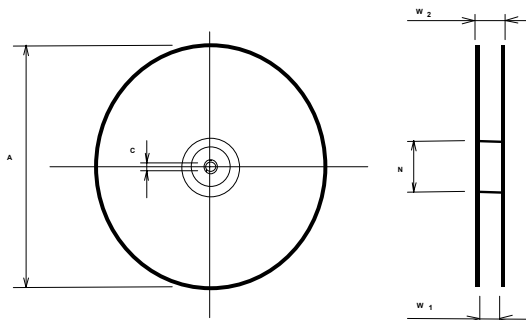
Tape (all dimensions in mm)

- 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 : 5,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

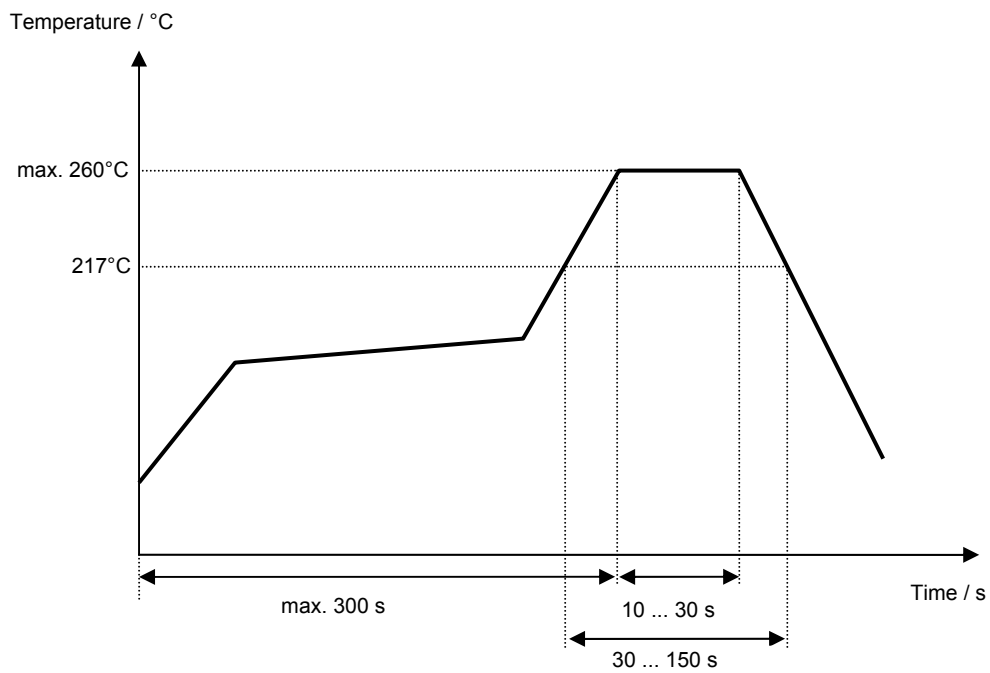
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Air reflow temperature conditions

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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VI TELEFILTER**Filter specification****TFS 491A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Alawneh	23.03.2006
1.1	- Add typical values, change attenuation - Add filter characteristic, generation of filter specification	Channaa	06.06.2006

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