

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Source impedance	75	Ω
Load impedance	75	Ω
Terminating impedance:		
Input:	202.43 Ω	-2.56 pF
Output:	202.43 Ω	-2.56 pF

Characteristics

Remark:

The minimum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 495.25 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.

D a t a		typ. value	tolerance / limit
Insertion loss	a_e	2.1 dB	max. 3 dB
Nominal frequency	f_N	-	495.25 MHz
Pass band	PB	-	f_N ± 45.50 kHz
Amplitude ripple	p-p	0.1 dB	max. 1 dB
Absolute attenuation	a_{abs}		
f_N - 441.00 MHz ... f_N - 4.50 MHz		52 dB	min. 40 dB
f_N - 4.50 MHz ... f_N - 1.50 MHz		41 dB	min. 34 dB
f_N + 1.75 MHz ... f_N + 4.75 MHz		29 dB	min. 20 dB
f_N + 4.75 MHz ... f_N + 548.00 MHz		42 dB	min. 38 dB
Input power level			max. 0 dBm
Operating temperature range	OTR	-	-20 °C ... +70 °C
Storage temperature range		-	-40 °C ... +85 °C
Frequency inversion temperature		28 °C	-
Temperature coefficient of frequency	TC_f^*	-0.034 ppm/K ²	-

*) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{\text{CAT}}(\text{MHz})$.

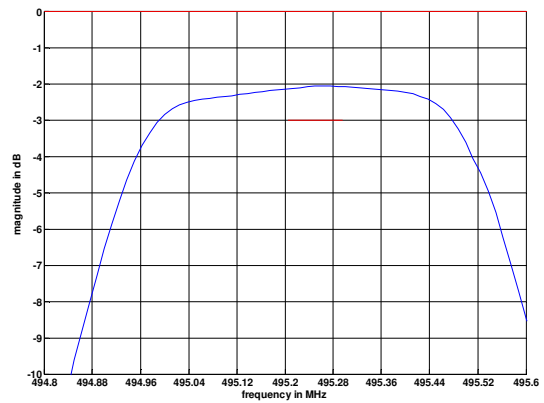
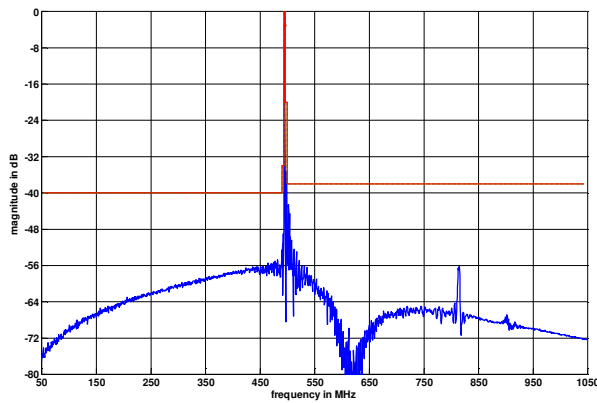
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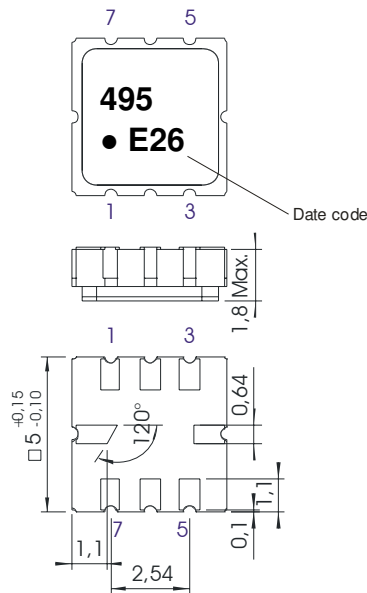
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Filter characteristic



Construction and pin connection

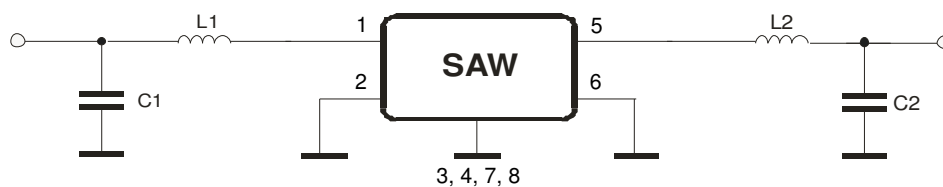
(All dimensions in mm)



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

Date code: Year + week
 E 2014
 F 2015
 G 2016
 ...

75 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 plane, 3 planes; DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 15 min. each / 100 cycles
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: three times max.;
for temperature conditions, see page 4: "Air reflow temperature conditions"
5. ESD ANSI/ESD S20.20-1999, class 1A for HBM

This filter is RoHS compliant (2011/65/EU)

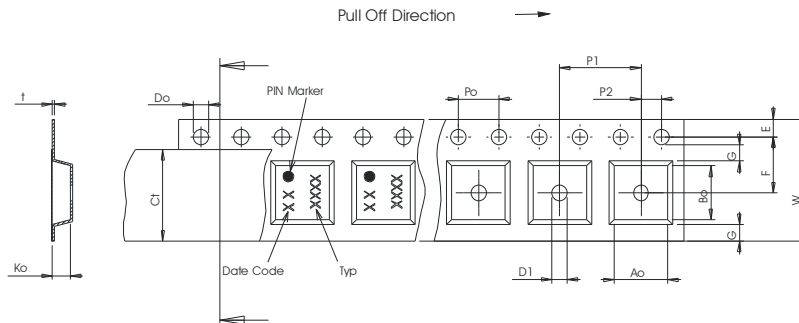
Packing

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

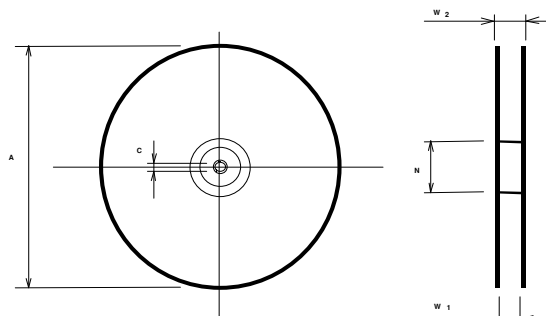
Tape (all dimensions in mm)

- W : 12.00 ± 0.3
- Po : 4.00 ± 0.1
- Do : 1.50 + 0.1/-0
- E : 1.75 ± 0.1
- F : 5.50 ± 0.05
- G(min) : 0.75
- P2 : 2.00 ± 0.05
- P1 : 8.00 ± 0.1
- D1(min) : 1.50
- Ao : 5.30 ± 0.1
- Bo : 5.30 ± 0.1
- Ct : 9.50 ± 0.1



Reel (all dimensions in mm)

- A : 330 or 180
- W1 : 12.4 +2/-0
- W2(max) : 18.4
- N(min) : 50.0
- C : 13.0 +0.5/-0.2



The minimum bending radius is 45 mm.

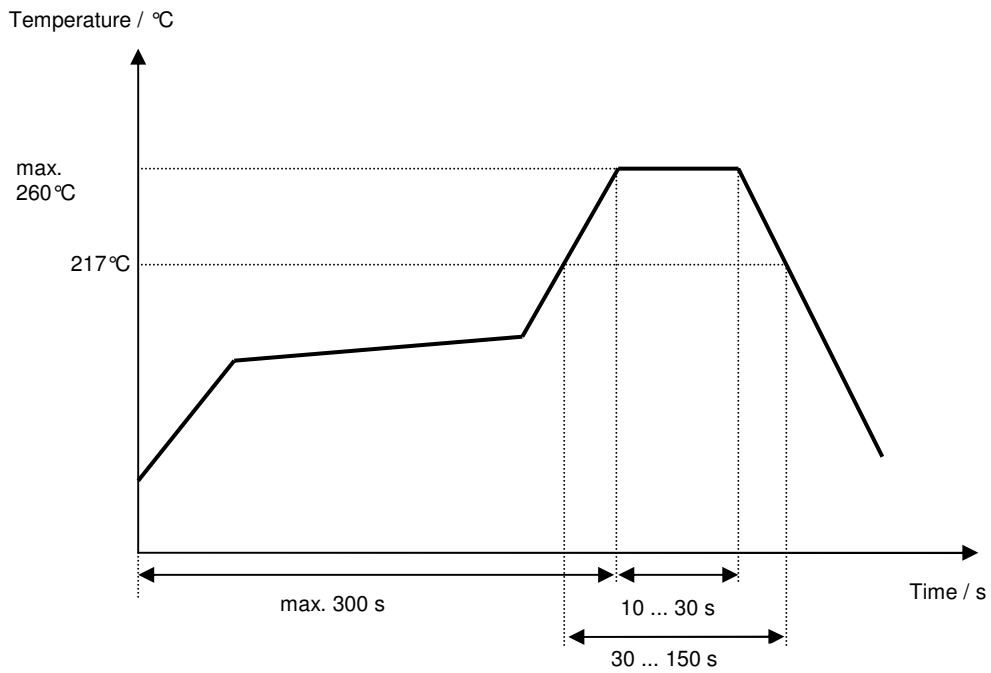
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Air reflow temperature conditions

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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History

Version	Reason of changes	Name	Date
1.0	Generation of development specification.	S. Channaa	16.07.2010
2.0	Generation of filter specification.	Schönbein	24.07.2013
2.1	Add input power level	S.Springfeldt	24.06.2014