Measurement condition

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

Characteristics

Remark:
The maximum attenuation in the passband is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 1643,5 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed within the specified temperature ranges. 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 (OTR2)	a_e	2,2	dB	max.	3,0	dB
Nominal frequency	f_N				1643,5	MHz
Passband	PB			(f_N – 15,5) MHz …	(f_N + 13,0)	MHz
Passband variation (OTR2)		0,7	dB		1,5	dB
Absolute attenuation	a_{abs}					
1525 MHz … 1559 MHz (OTR)		43	dB	min.	35	dB
@ 1670 MHz (OTR2)	**	4	dB	min.	3	dB
@ 1675 MHz (OTR2)				min.	4	dB
1884 MHz … 1952 MHz (OTR)		63	dB	min.	55	dB
Return loss within PB (OTR2)		9	dB	min.	8	dB
Operating temperature range	OTR	-		- 40 °C ... + 85 °C		
Operating temperature range 2	OTR2	-		- 20 °C ... + 85 °C		
Storage temperature range		-		- 40 °C ... + 85 °C		
Temperature coefficient of frequency	TC_f *	-42	ppm/K			

*) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_o) \times f_{CAT}$ (MHz)
**) guaranteed values have to be understood as sloping lines between the given attenuation value and the attenuation value of the following point or segment

Generated:

Checked / Approved:

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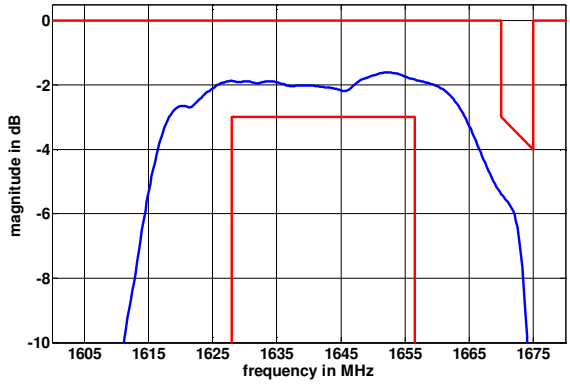
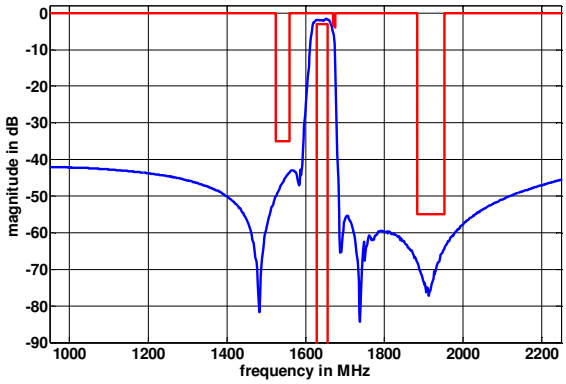
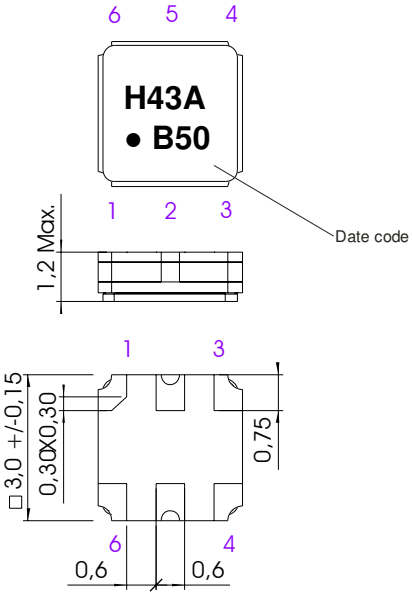
Filter characteristic





Construction and pin connection

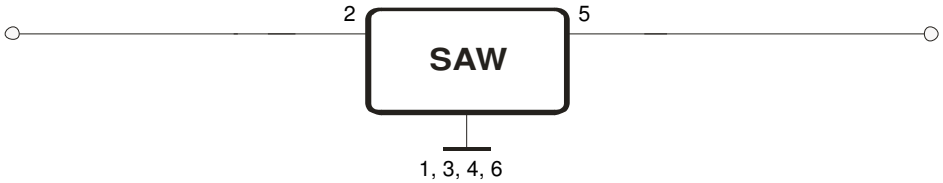
(All dimensions in mm)



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

Date code:	Year + week
B	2011
C	2012
D	2013
...	

50 Ohm 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)

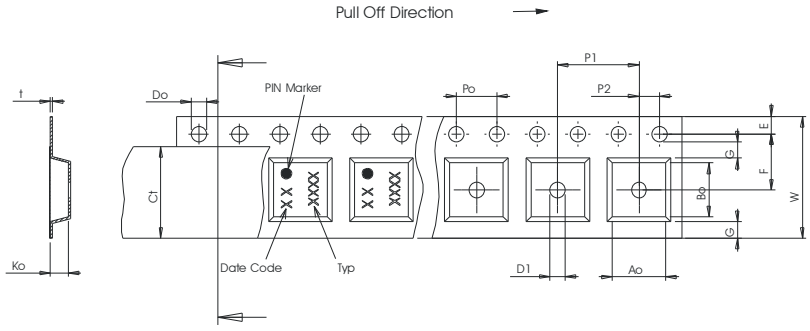
Packing

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:	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

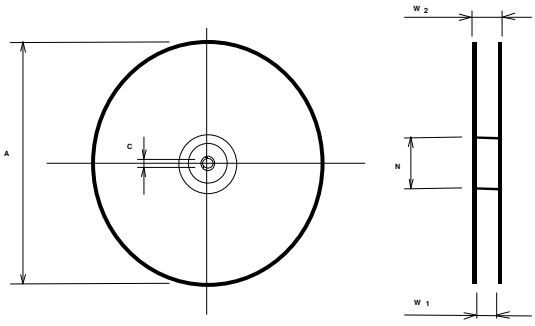
Tape (all dimensions in mm)

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	:	5,3	± 0,1



Reel (all dimensions in mm)

A	:	180	
W1	:	8,4	+1,5/-0
W2(max)	:	14,4	
N(min)	:	60	
C	:	13,0	± 0,2



The minimum bending radius is 45 mm.

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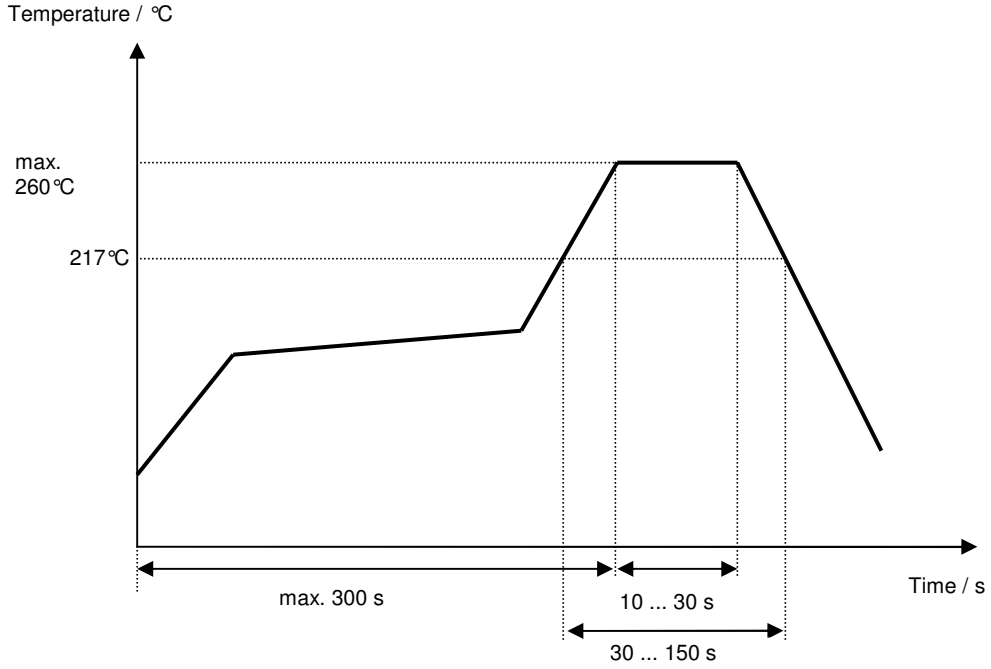
Air reflow temperature conditions

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



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History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	S.Springfeldt	05.05.2011
2.0	- Frequency limits of passband changed - Limits for absolute attenuation updated (1670 – 1675 MHz)	A. Molke	01.07.2011
3.0	- Second operating temperature range introduced	A. Molke	12.07.2011
3.1	- Change from development spec to filter spec - Typical values added - Filter characteristic added	A. Molke	03.08.2011
4.0	- Limits for absolute attenuation updated (1670 – 1675 MHz) - Typical values updated	A. Molke	09.12.2011

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