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 pass band is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 1227,6 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 in PB	a_e	2,4	dB	max.	4,0	dB
Insertion loss in PB1		1,5	dB	max.	2,0	dB
Nominal frequency	f_N	-			1227,6	MHz
Passband	PB	-		f_N ±	12,0	MHz
Passband	PB1	-		f_N ±	5,0	MHz
Pass band variation in PB1		0,4	dB	max.	1,0	dB
Absolute attenuation	a_{abs}					
0,3 MHz … 1127 MHz		43	dB	min.	32	dB
1127 MHz … 1167 MHz		49	dB	min.	42	dB
1167 MHz … 1177 MHz		46	dB	min.	32	dB
1197,6 MHz		25	dB	min.	6	dB**
1257,6 MHz		35	dB	min.	11	dB***
1277 MHz … 1287 MHz		55	dB	min.	32	dB
1287 MHz … 1327 MHz		54	dB	min.	42	dB
1327 MHz … 3000 MHz		37	dB	min.	32	dB
Group delay ripple within PB		35	ns	max.	50	ns
Group delay ripple within PB1		12	ns	max.	30	ns
VSWR within PB		1,6 : 1		max.	2 : 1	
Input power level in PB		-		max.	15	dBm
Operating temperature range	OTR	-		- 45 °C ... + 85°C		
Storage temperature range		-		- 55 °C ... + 105°C		
Temperature coefficient of frequency	TC_f *	-42	ppm/K			

*) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_o) \times f_{CAT}(MHz)$.
**) stop band attenuation between 1177,0MHz and 1197,6MHz decreases linearly from 32dB to 6dB
***) stop band attenuation between 1257,6MHz and 1277,0MHz increases linearly from 11dB to 32dB

Generated:

Checked / Approved:

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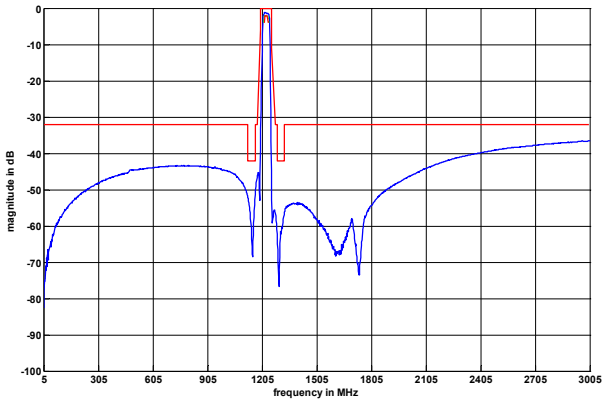
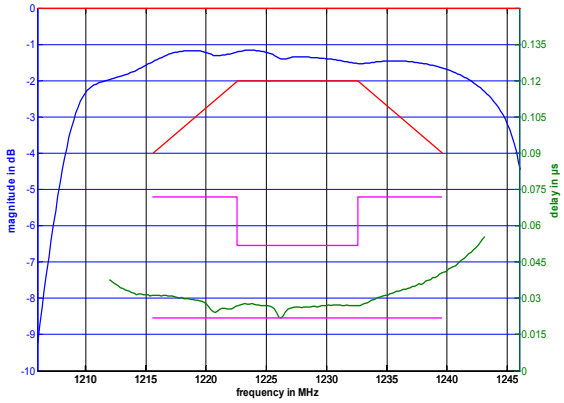
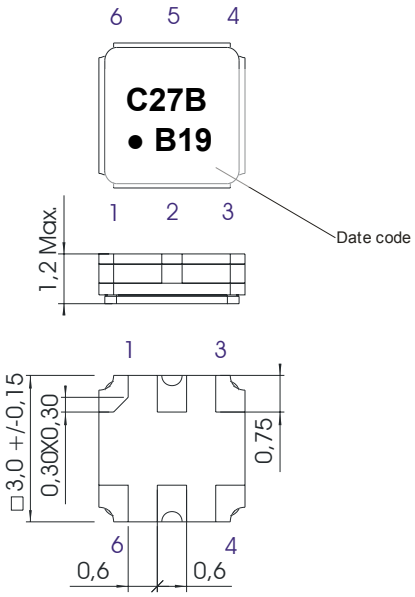
Filter characteristic





Construction and pin connection

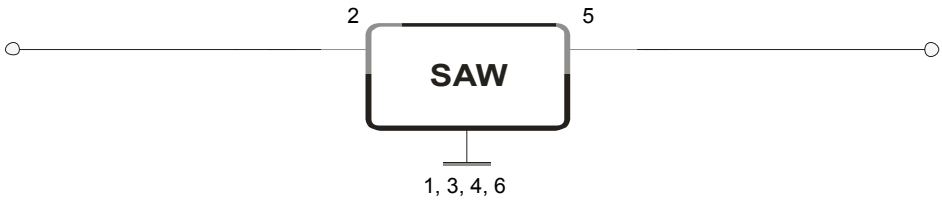
(All dimensions in mm)



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

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

50 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 / 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, see page 4: "Air reflow temperature conditions"
5. ESD	ANSI/ESD S20.20-1999**,** class 1A for HBM

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

Packing

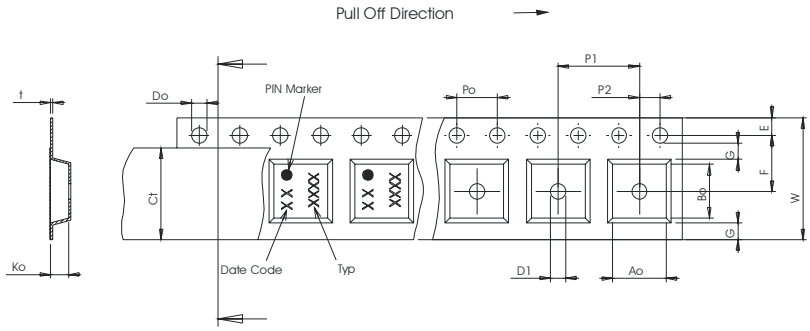
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

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

Alinment

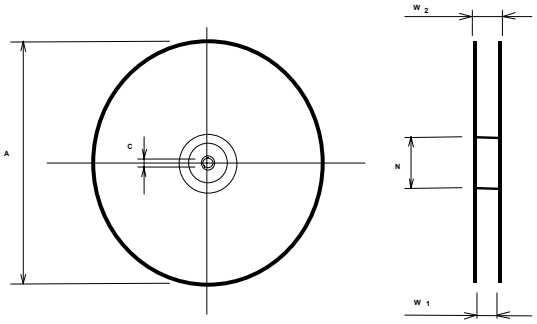
Tape (all dimensions in mm)

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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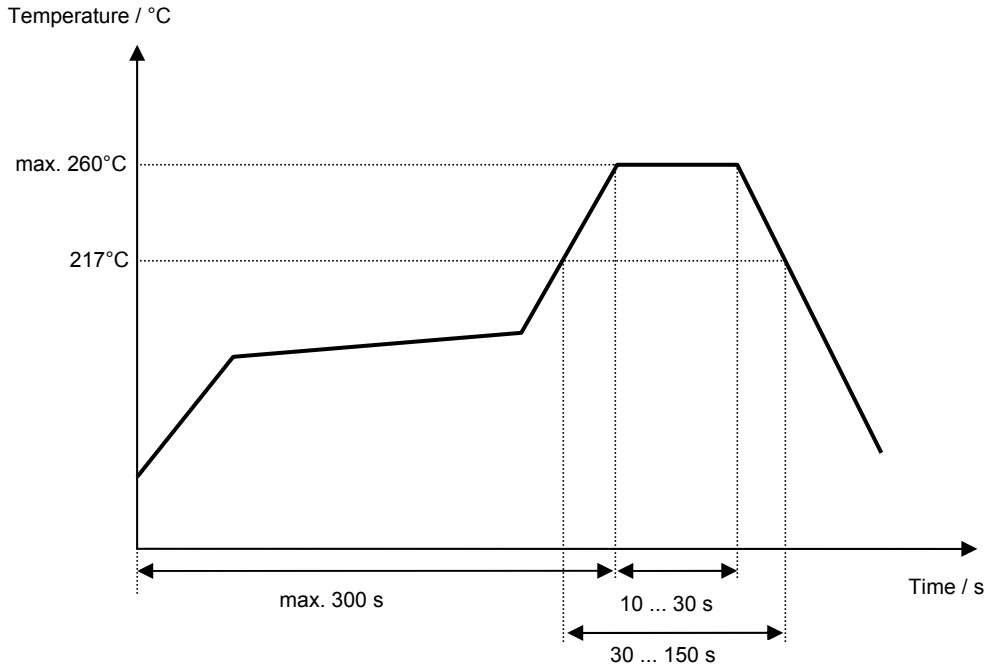
Air reflow temperature conditions

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	Noack	09.07.2010
2.0	- Change of data table according to new customer requirements	Noack	23.07.2010
3.0	- Change of data table according to new customer requirements	Noack	27.07.2010
4.0	- Change alignment of tape and reel - Add typical values and filter characteristic - Generation of filter specification	Noack	03.05.2011

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Abschnitt Construction wurde bearbeitet.

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