Measurement condition

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

Characteristics

The maximum attenuation in the pass band is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 1584.0 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	2.7		max.	4.0	dB
Nominal frequency	f_N	-			1584.0	MHz
Passband	PB	-		f_N ±	10.0	MHz
Passband variation within PB		0.8		max.	2.5	dB
Passband ripple within PB		0.35		max.	1.0	dB
Absolute attenuation	a_{abs}					
100 MHz … 1500 MHz		47	MHz	min.	40	dB
1500 MHz … 1539 MHz		46	MHz	min.	30	dB
1629 MHz … 2500 MHz		47	MHz	min.	40	dB
2500 MHz … 3000 MHz		40	MHz	min.	35	dB
Return loss within PB		12.5	dB	min.	10	dB
Input power level		-		max.	20 **	dBm
Operating temperature range	OTR	-		- 45 °C ... + 105°C		
Storage temperature range		-		- 45 °C ... + 105°C		
Temperature coefficient of frequency	TC_f *	-38	ppm/K			

*) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_o) \times f_{CAT}\ (MHz)$

**) This power level is allowed for short term operation (peak power) only, the max. input power for continuous operation is 10 dBm.

Generated:

Checked / Approved:

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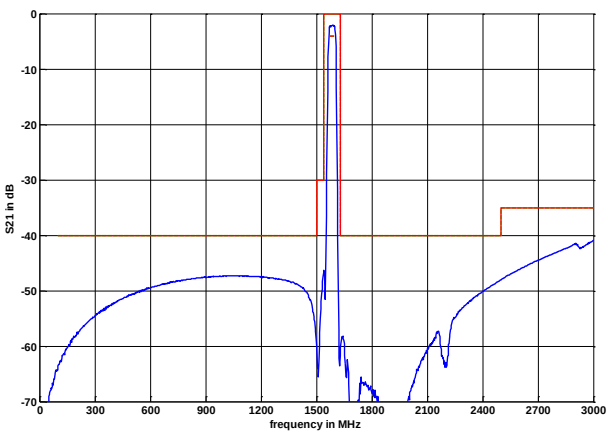
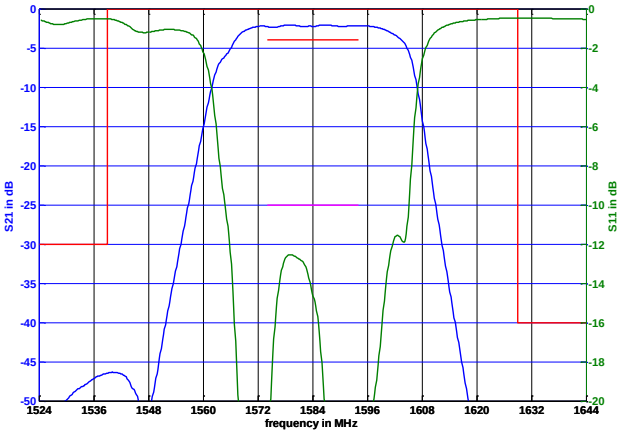
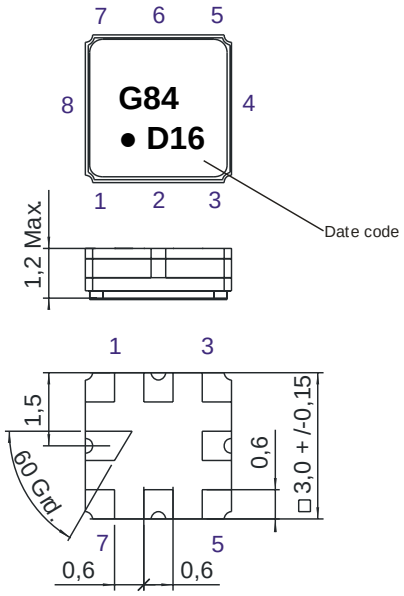
Filter characteristic





Construction and pin connection

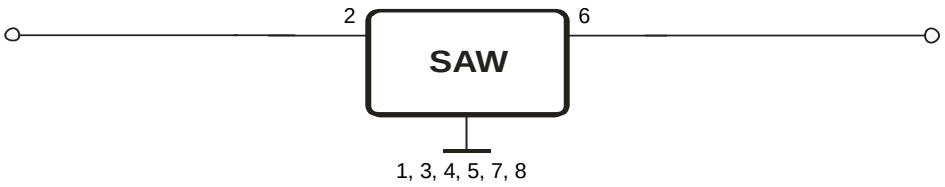
(All dimensions in mm)



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

Date code:	Year + week
D	2013
E	2014
F	2015
...	

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 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)

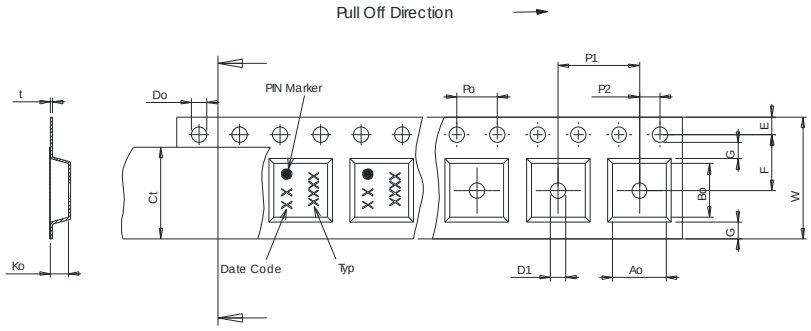
Packing

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

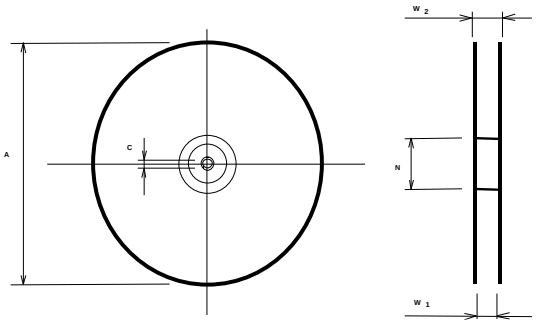
Tape (all dimensions in mm)

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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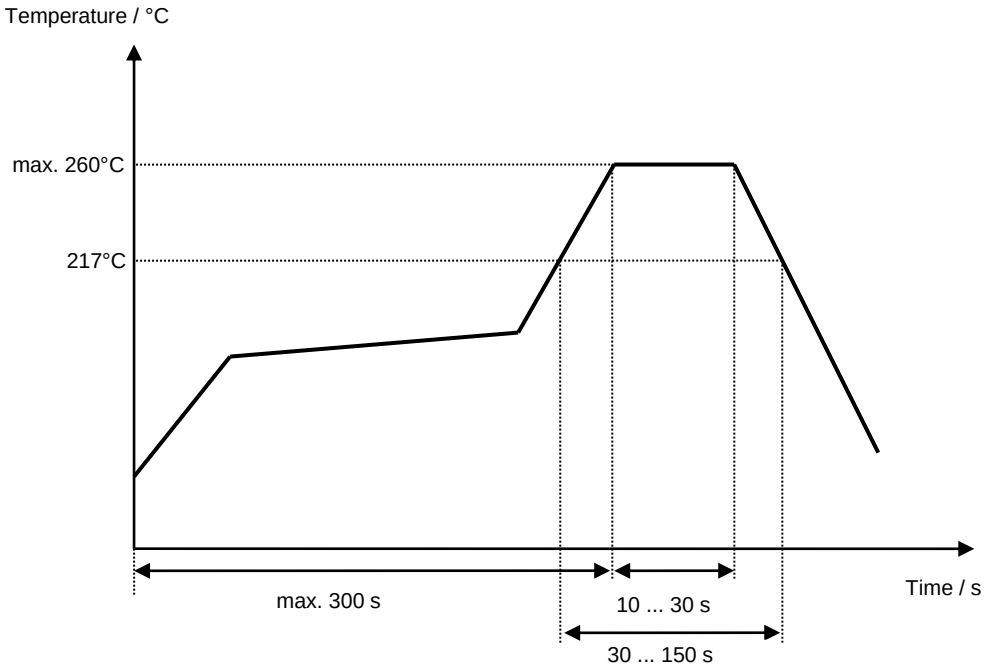
Air reflow temperature conditions

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	01.06.2011
2.0	- Change data table	Noack	21.06.2011
2.1	- Generation of filter specification	S.Springfeldt	16.11.2012
2.2	- Change of temperature coefficient	S.Springfeldt	22.01.2013
2.3	-Rework filter specification (typical values)	S.Springfeldt	19.04.2013

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