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 939 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed within 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	2.6	dB	max.	3.5	dB
Nominal frequency	f_N				939.0	MHz
Passband	PB			f_N ±	21.0	MHz
Pass band variation		0.65	dB	max.	2.0	dB
Absolute attenuation	a_{abs}					
1 MHz ... 880 MHz		26	dB	min.	17	dB
1020 MHz … 1100 MHz		30	dB	min.	10	dB
1100 MHz … 2200 MHz		27	dB	min.	20	dB
2200 MHz ... 2700 MHz		37	dB	min.	10	dB
3300 MHz … 3800 MHz		30	dB	min.	5	dB
VSWR within PB		1.6 : 1		max.	2 : 1	
Input power level		-		max.	16	dBm
Operating temperature range	OTR			- 40 °C ... + 85 °C		
Storage temperature range				- 40 °C ... + 85 °C		
Temperature coefficient of frequency	TC_f *	-72	ppm/K		-	

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

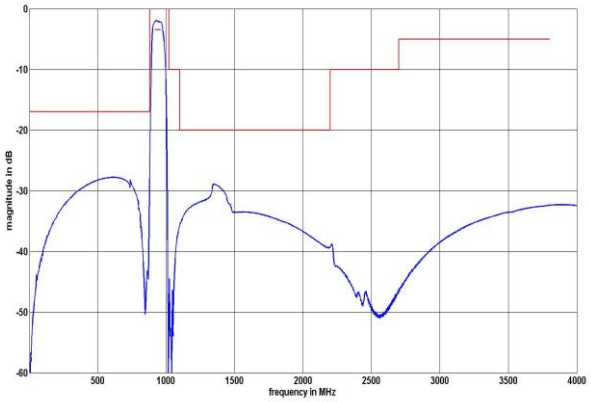
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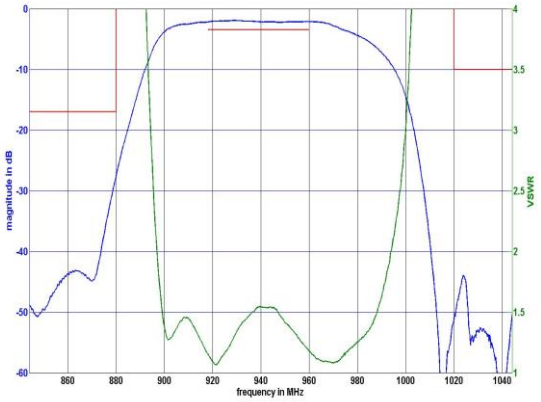
Checked / Approved:

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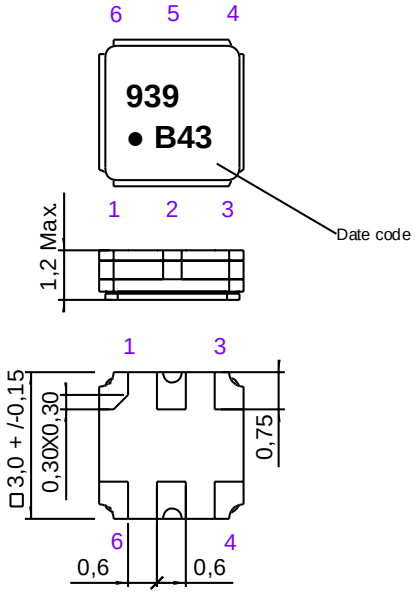
Filter characteristic





Construction and pin connection

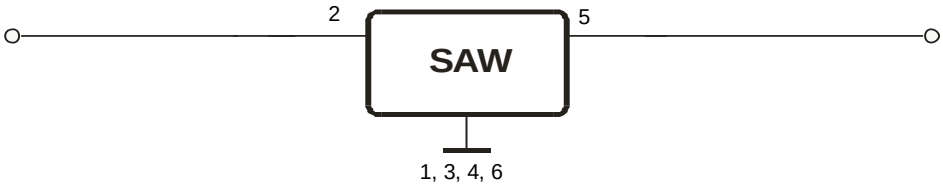
(All dimensions in mm)



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 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)

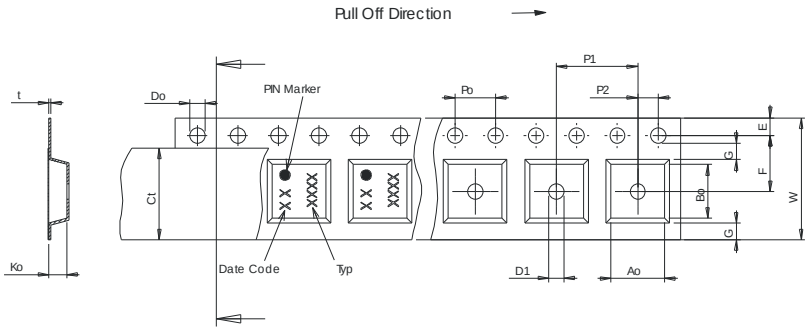
Packing

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

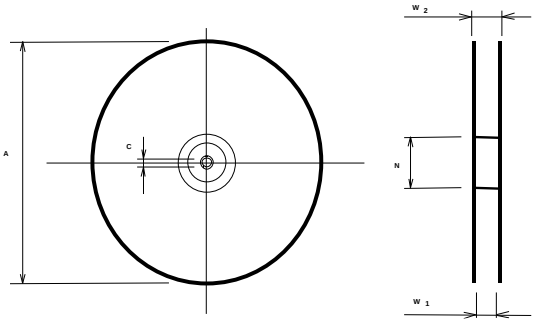
Tape (all dimensions in mm)

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.

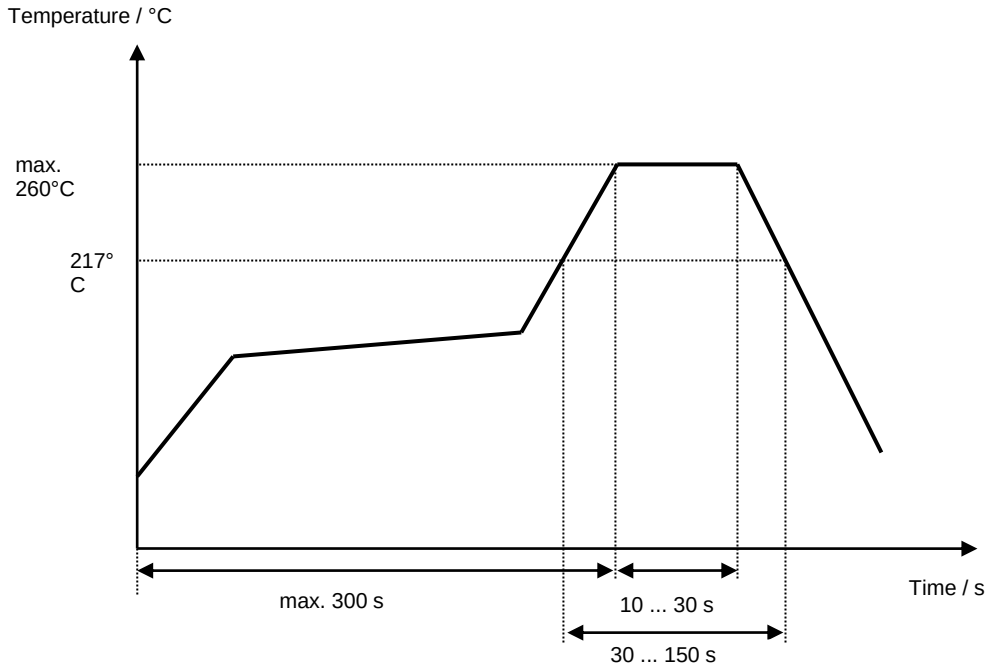
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Air reflow temperature conditions

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	05.09.2011
1.1	- Generation of filter specification	S.Springfeldt	17.10.2011

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