Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedances
for input: 50 Ω
for 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 1880 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 (reference level)	a_e	3,4	dB	max.	5	dB
Nominal frequency	f_N				1880	MHz
Centre frequency	f_C	1880	MHz			
Passband PB		80,5	MHz	f_N ±	30	MHz
Pass band ripple		0,6	dB	max.	3,5	dB
Absolute attenuation	a_{abs}					
10 MHz … 1720 MHz		33	dB	min.	30	dB
1930 MHz … 1935 MHz		17	dB	min.	13	dB
1935 MHz … 1990 MHz		41	dB	min.	20	dB
2032 MHz … 2340 MHz		41	dB	min.	35	dB
2340 MHz … 2700 MHz		37	dB	min.	30	dB
2700 MHz … 3500 MHz		12	dB	min.	10	dB
VSWR within PB		2,5		max.	3,0 : 1	
Input power level				max.	13	dBm
Operating temperature range	OTR	-		- 10 °C ... + 70°C		
Storage temperature range		-		- 40 °C ... + 85°C		
Temperature coefficient of frequency	TC_f **	-36	ppm/K			

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.
**) $\Delta f(Hz) = TC_f(ppm/K) \times (T-T_0) \times f_{To}(MHz)$

Generated:

Checked / Approved:

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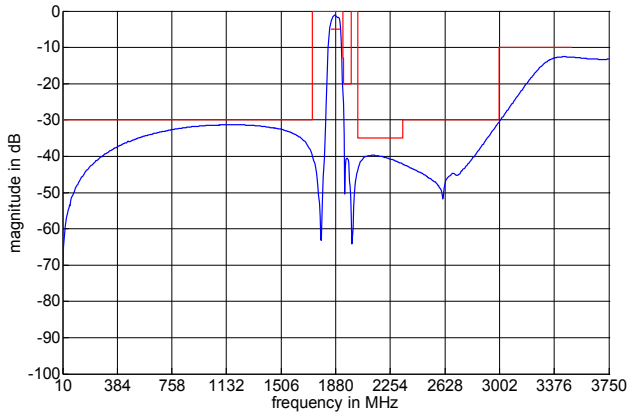
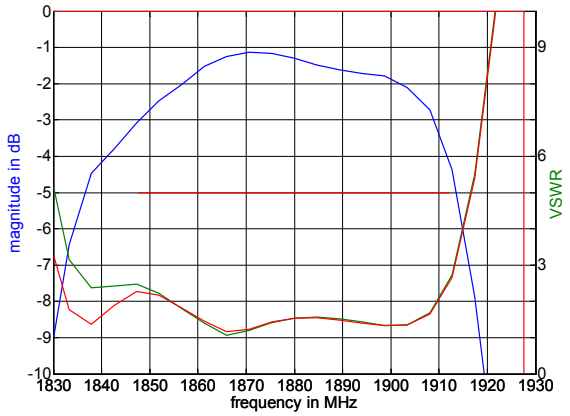
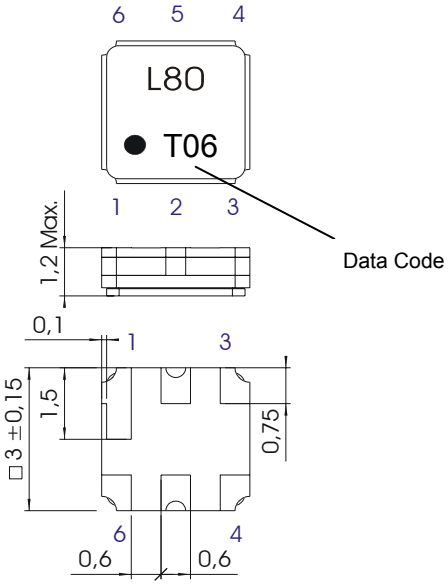
Filter characteristic





Construction and pin configuration

(All dimensions in mm)

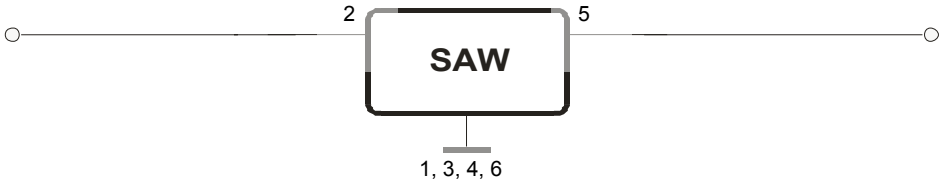


Date code: Year+week

S	2004
T	2005
U	2006
V	2007
...	

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

50 Ω Test circuit



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Stability characteristics

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: twice max.; for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

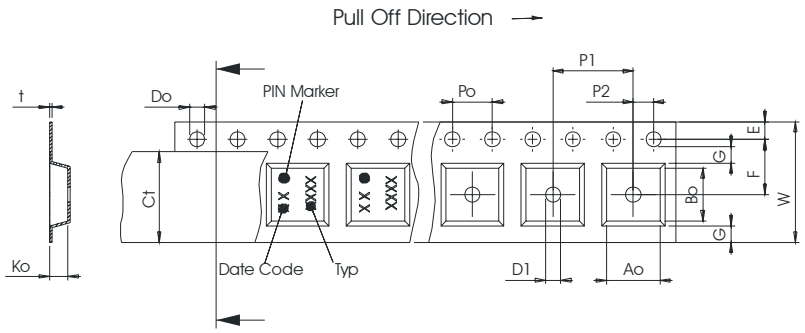
Packing

Tape & Reel: IEC 286 – 3, with exeption 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 peer reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

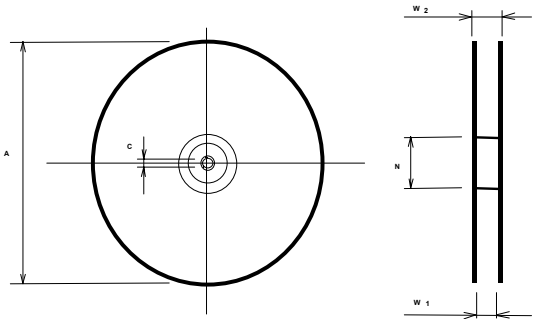
Tape (all dimensions in mm)

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	:	5,5 ± 0,1



Reel (all dimensions in mm)

A	:	330
W1	:	8,4 +1,5/-0
W2(max)	:	14,4
N(min)	:	50
C	:	13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

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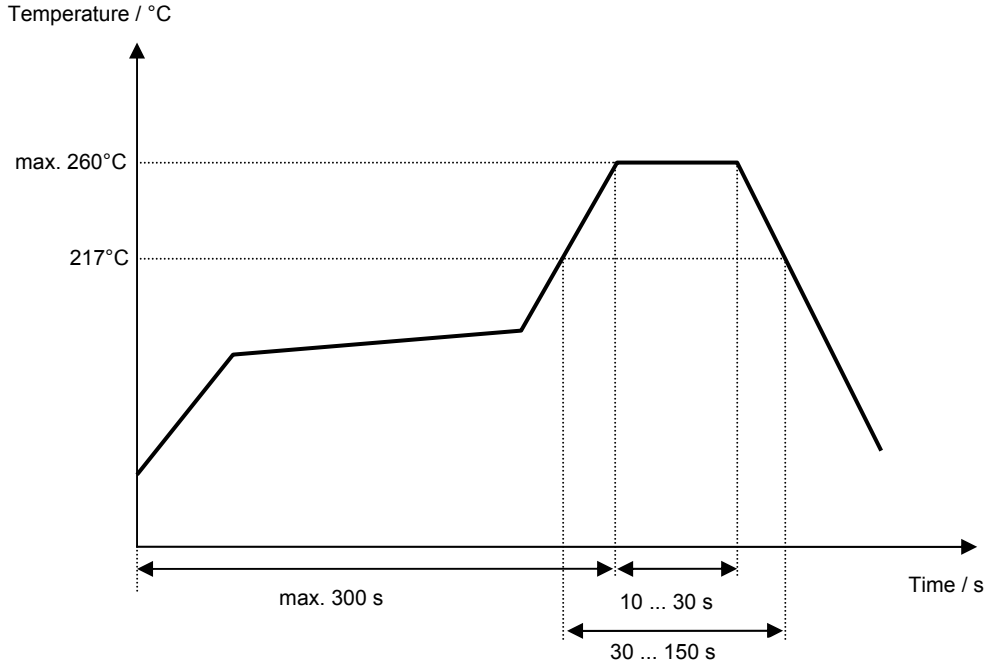
Air reflow temperature conditions

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	Dr. Sabah	17.12.2003
1.1	Change of formula for temperature coefficient of frequency, add of value of temperature coefficient of frequency	Roizengaft	22.12.2003
1.2	Add of typical values	Dr. Sabah	08.01.2004
1.3.	Generation of filter specification	Strehl	09.02.2005
1.4.	adjust upper stopband requirements VSWR corrected	Steiner	22.02.2005

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