

**VI TELEFILTER****Filter specification****TFS 836C****1/5****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 836,5 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.

tolerance scheme.

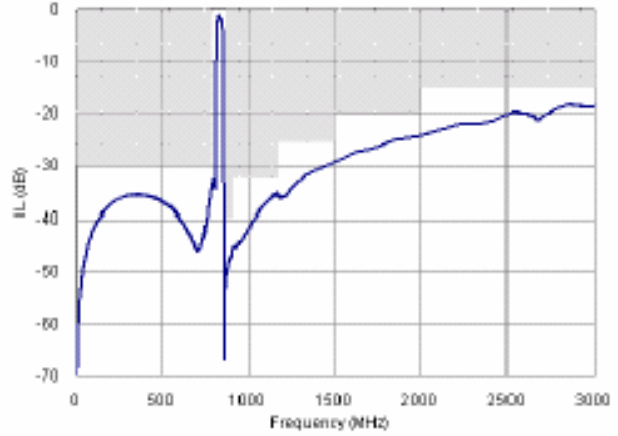
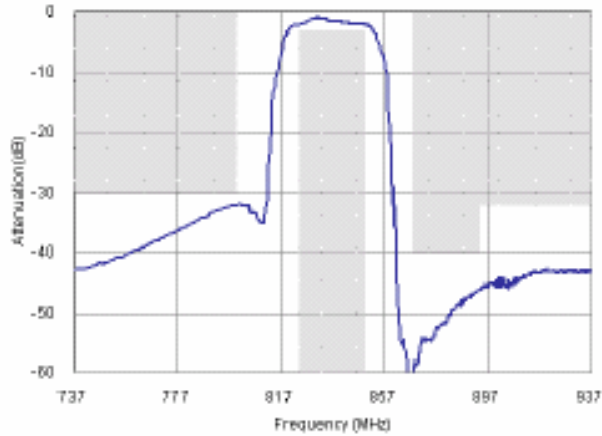
<b>D a t a</b>	<b>typ. value</b>		<b>tolerance / limit</b>		
<b>Insertion loss</b>	$a_e$	2,1 dB	max.	3,0	dB
<b>Nominal frequency</b>	$f_N$	-		836,5	MHz
<b>Passband</b>		-	$f_N$	± 12,5	MHz
<b>Pass band ripple</b>		0,7 dB	max.	1,4	dB
<b>Absolute attenuation</b>	$a_{abs}$				
0,3 MHz ... 800 MHz		33 dB	min.	28	dB
869 MHz ... 894 MHz		47 dB	min.	40	dB
894 MHz ... 1210 MHz		35 dB	min.	32	dB
1210 MHz ... 1500 MHz		30 dB	min.	25	dB
1500 MHz ... 2000 MHz		25 dB	min.	20	dB
2000 MHz ... 3000 MHz		18 dB	min.	15	dB
<b>Return loss within PB</b>		9 dB	min.	8	dB
<b>Input power level</b>		-	max.	15	dBm
<b>Permissible DC voltage</b>		-	max.	5	V
<b>Operating temperature range</b>	OTR	-	- 30 °C ... + 85		°C
<b>Storage temperature range</b>		-	- 40 °C ... + 85		°C
<b>Temperature coefficient of frequency</b>	$TC_f$ *	t.b.d.			-

\*)  $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_A) \times f_{CTA}(\text{MHz})$ **Generated:****Checked / Approved:**

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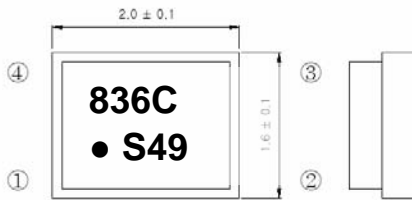
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**Filter characteristic**

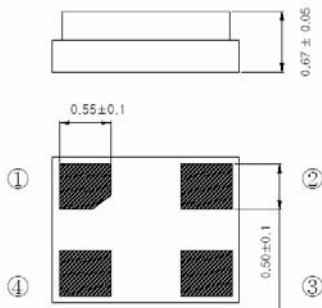


**Construction and pin connection**

(All dimensions in mm)

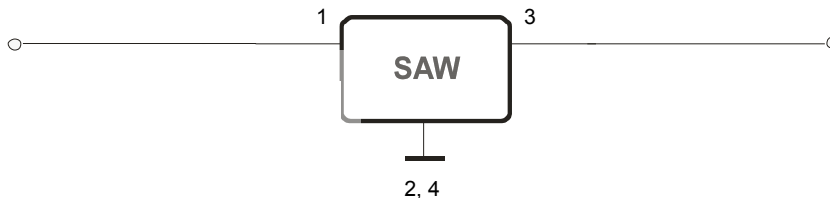


- 1 Input
- 2 Ground
- 3 Output
- 4 Ground



- Date code: Year + week
- S 2004
  - T 2005
  - U 2006
  - ...

**Test circuit**



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**Stability characteristics**

After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 18 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;

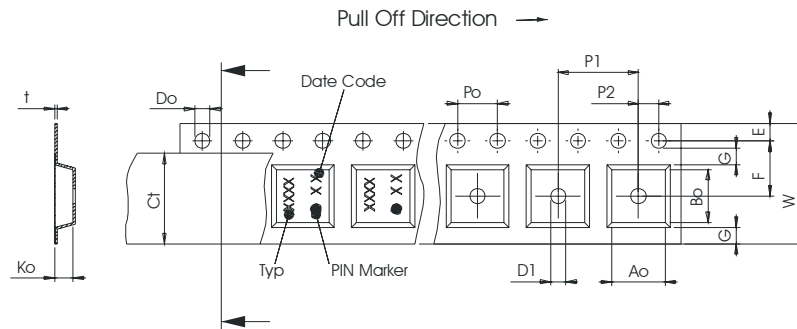
**Packing**

Tape & Reel: IEC 286 – 3, with 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 peer reel: 4000  
reel of empty components at start: min. 150 mm  
reel of empty components at start including leader: min. 160 mm  
trailer: min. 150 mm

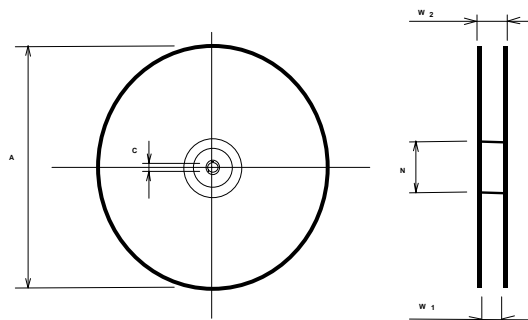
**Tape (all dimensions in mm)**

- 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 : 1,79 ± 0,1
- Bo : 2,12 ± 0,1



**Reel (all dimensions in mm)**

- A : 258
- W1 : 9,0 +1,5/-0
- W2(max) : 12,3
- N(min) : 81,0
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

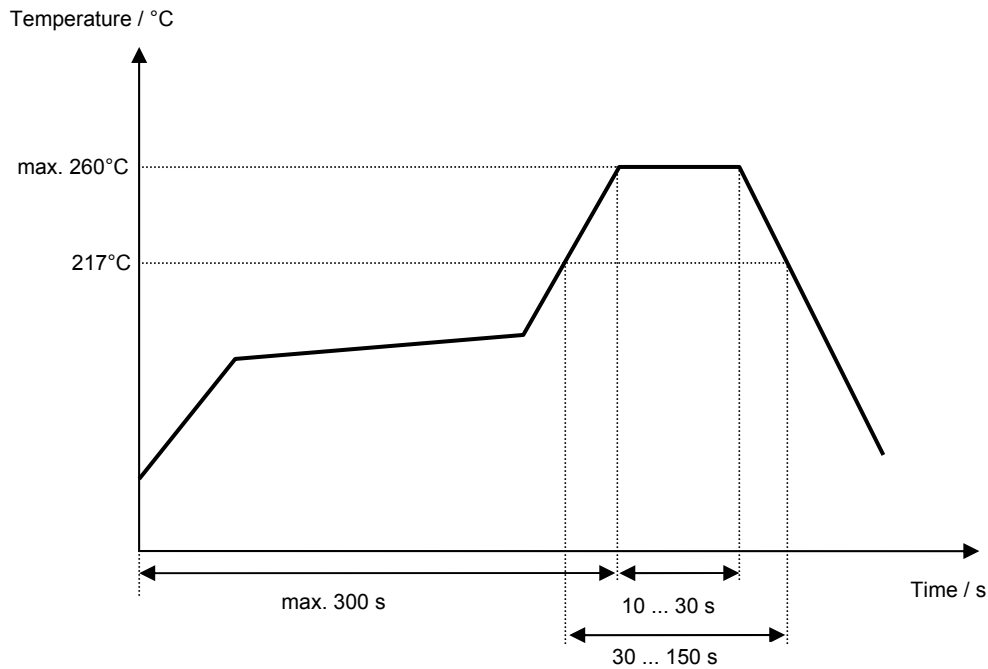
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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
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**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	- Generation of filter specification	Martens	29.11.2004

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