

VI TELEFILTER**Filter specification****TFS 1237****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 1237 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.

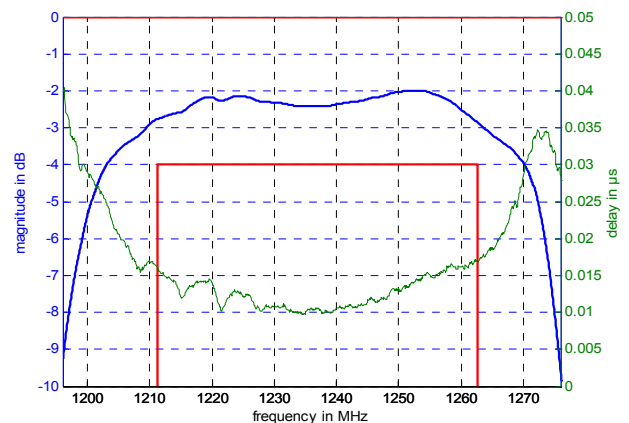
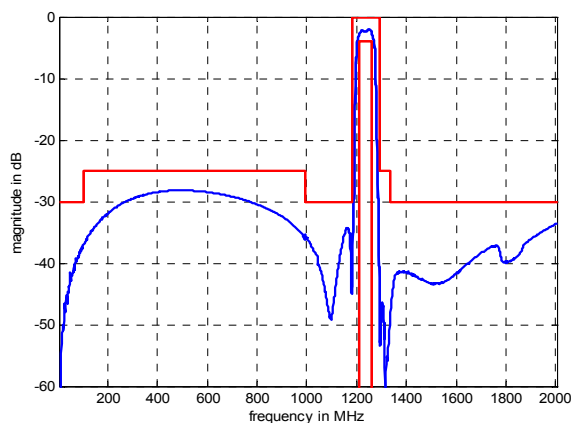
D a t a					typ. value		tolerance / limit			
Insertion loss					a _e	2,0	dB	max.	4	dB
Nominal frequency					f _N	-			1237	MHz
Passband					PB	-		f _N	± 20	MHz
Pass band ripple						0,5	dB	max.	1,75	dB
Absolute attenuation					a _{abs}					
1	MHz	...	100	MHz	37	dB	min.	30	dB	
100	MHz	...	1000	MHz	28	dB	min.	25	dB	
1000	MHz	...	1177	MHz	34	dB	min.	30	dB	
1297	MHz	...	1338	MHz	47	dB	min.	25	dB	
1338	MHz	...	2000	MHz	33	dB	min.	30	dB	
Group delay ripple within PB					6	ns	max.	10	ns	
Operating temperature range					OTR	-		- 40 °C ... + 85 °C		
Storage temperature range						-		- 40 °C ... + 90 °C		
Temperature coefficient of frequency					TC _f *	-70	ppm/K		-	
Input power level						-		max.	17	dBm

*) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_o) \times f_{CAT}(\text{MHz})$.

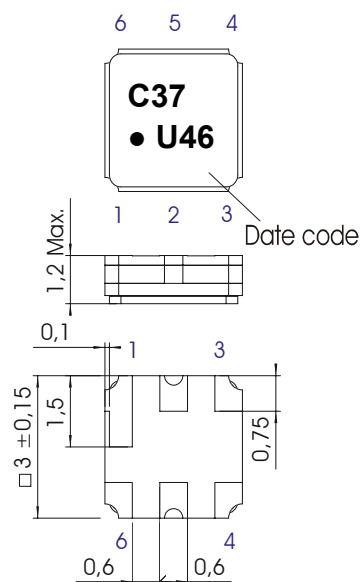
Generated:**Checked / Approved:**

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VI TELEFILTER**Filter specification****TFS 1237****2/5****Filter characteristic****Construction and pin connection**

(All dimensions in mm)



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

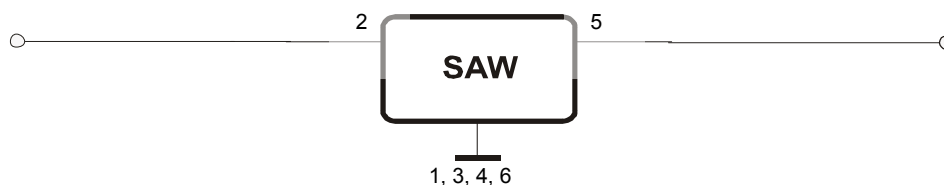
Date code: Year + week

U 2006

V 2007

W 2008

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50 Ω Test circuit

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VI TELEFILTER**Filter specification****TFS 1237****3/5****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)

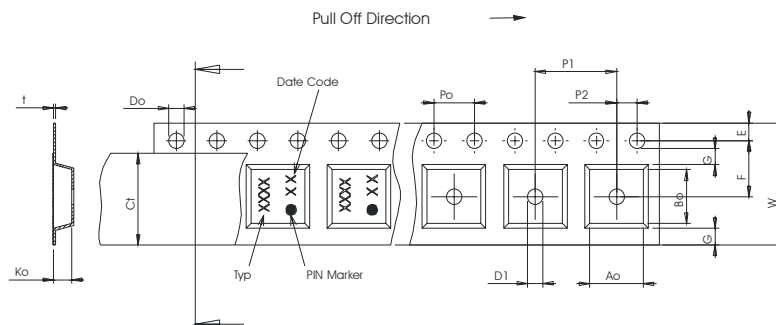
Packing

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;

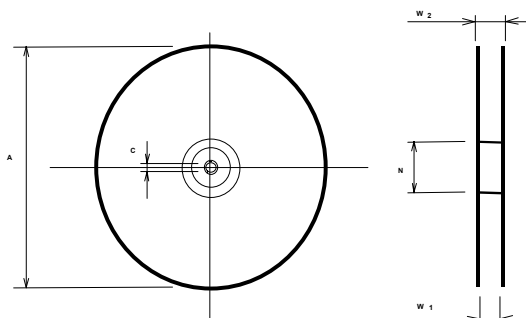
max. pieces of filters per reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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



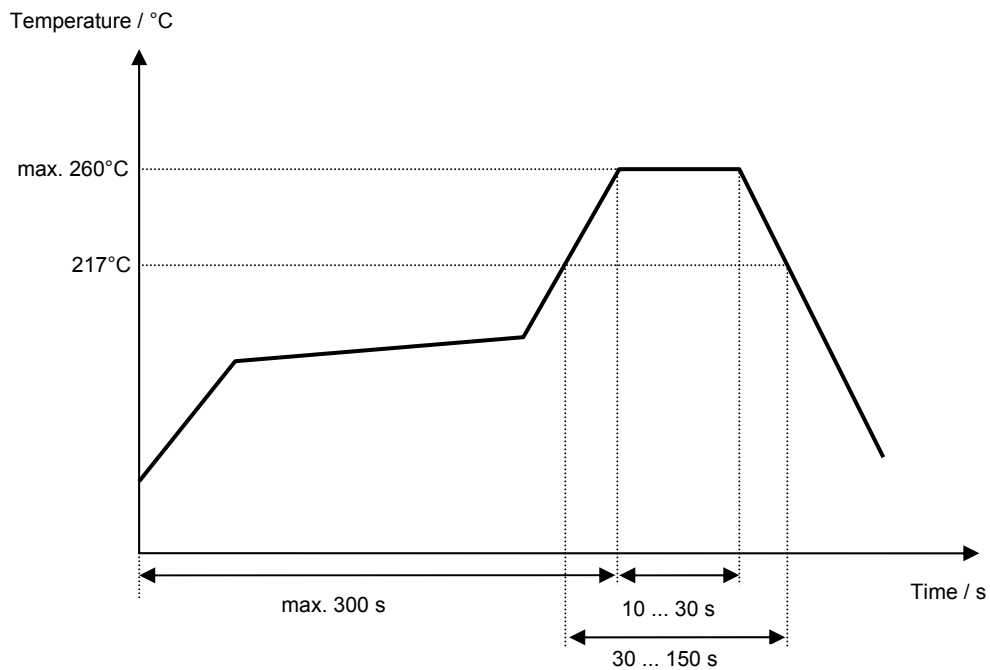
The minimum bending radius is 45 mm.

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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

VI TELEFILTER**Filter specification****TFS 1237****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Roizengaft	13.02.2004
1.1	- Change of operating temperature range	Roizengaft	04.03.2004
1.2	- Generation of filter specification - Add typical value - Add test circuit, and filter characteristic - Change packing (tape & reel)	Noack	18.05.2004
1.3	- Change stability characteristics	Strehl	14.11.2006