

VI TELEFILTER**Filter specification****TFS 810A****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	1260 Ω -1,4 pF	
Output:	1230 Ω -1,4 pF	

Characteristics**Remark:**

The minimum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 810 MHz without any tolerance or limit. The values of relative attenuation a_{rel} 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.

D a t a**typ. value****tolerance / limit**

Insertion loss	a_e	12,5	dB	max.	15	dB
Nominal frequency	f_N	-			810	MHz
Centre frequency	f_C	810	MHz		-	
Passband		-		f_N	± 1,5	MHz
Pass band ripple		0,5	dB	max.	1	dB
1 dB Bandwidth	BW_{1dB}	9,5	MHz	min.	9	MHz
Relative attenuation	a_{rel}					
600 MHz ... 745 MHz		60	dB	min.	50	dB
745 MHz ... 801 MHz		50	dB	min.	40	dB
801 MHz ... 803 MHz		20	dB	min.	15	dB
817 MHz ... 819 MHz		20	dB	min.	15	dB
819 MHz ... 875 MHz		45	dB	min.	40	dB
875 MHz ... 1000 MHz		60	dB	min.	50	dB
Group delay ripple within PB		50	ns	max.	150	ns
Operating temperature range	OTR	-		- 40 °C ... + 85		°C
Storage temperature range		-		- 40 °C ... + 85		°C
Turn over temperature		8	°C			
Temperature coefficient of frequency	TC_f^{**}	-0,036	ppm/K ²		-	

*) 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.

**) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$

Generated:**Checked / Approved:**

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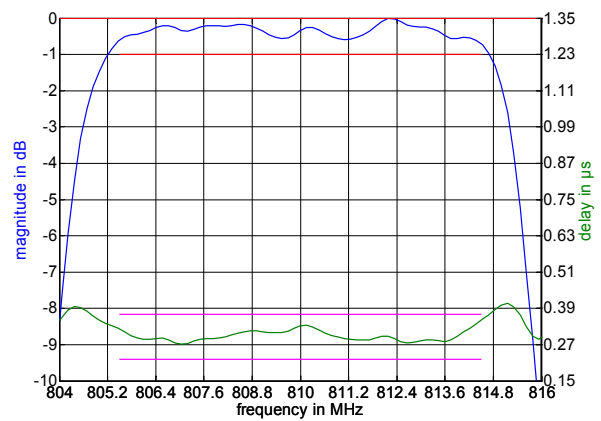
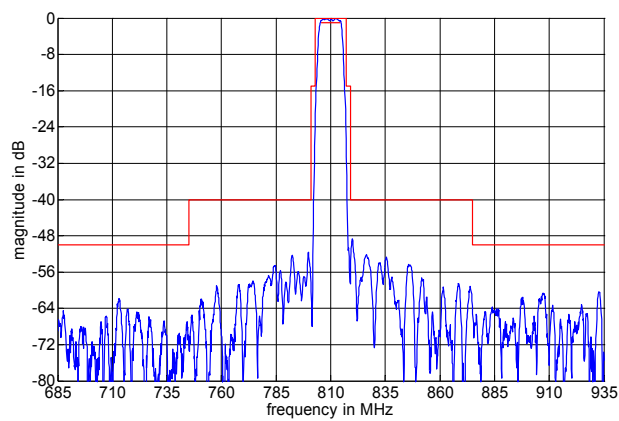
VI TELEFILTER

Filter specification

TFS 810A

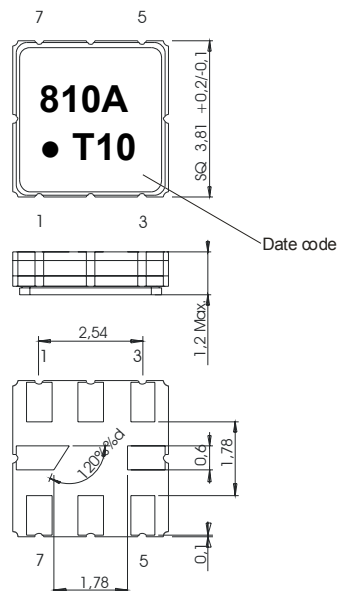
2/5

Filter characteristic



Construction and pin connection

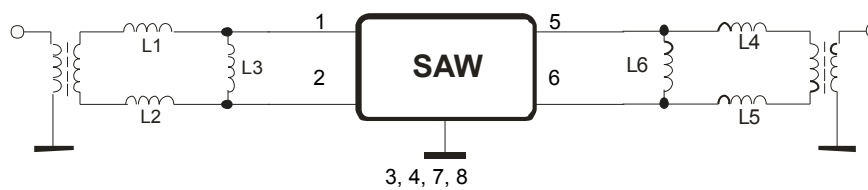
(All dimensions in mm)



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

Date code:	Year + week
T	2005
U	2006
V	2007
...	

200 Ω Test circuit



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VI TELEFILTER**Filter specification****TFS 810A****3/5****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;

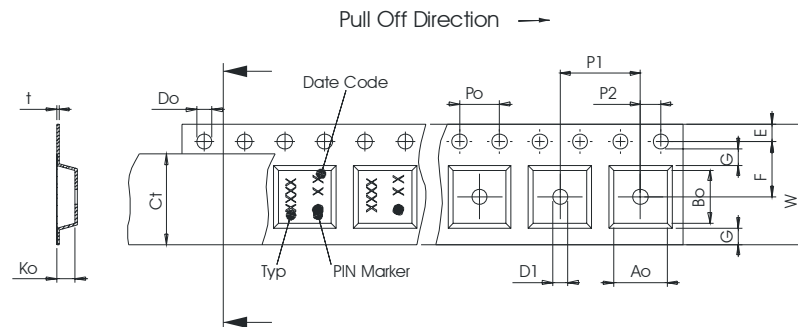
Packing

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;

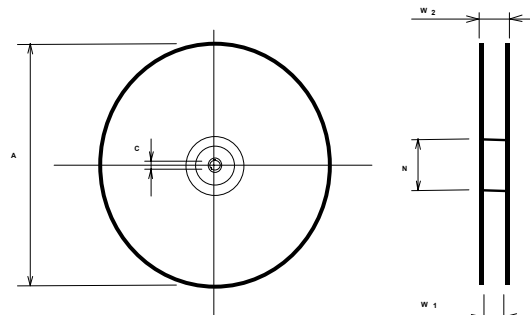
max. pieces of filters peer reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 12,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 5,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 8,00 ± 0,1
D1(min)	: 1,50
Ao	: 4,30 ± 0,1
Bo	: 4,30 ± 0,1
Ct	: 9,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 12,4 +2/-0
W2(max)	: 18,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



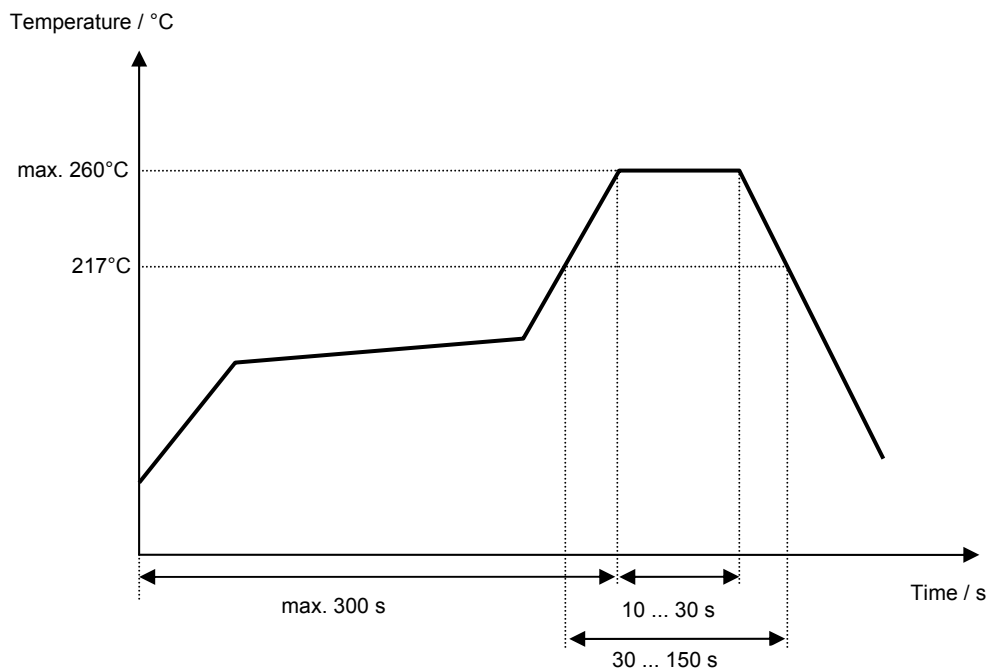
The minimum bending radius is 45 mm.

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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 810A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Martens	1.12.2004
1.1	- terminating impedance (preliminary values), typical values and filter characteristic added - matching configuration added - stability conditions for shock test corrected	Pfeiffer	14.02.2005
1.2	- terminating impedances, typical values and filter characteristic changed	Pfeiffer	10.03.2005

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