

VI TELEFILTER

Filter specification

TFS 2593

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	33 Ω -0,1 pF	***
Output:	33 Ω -0,1 pF	***

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 2593,0 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	3,2 dB	max.	4,5 dB
Nominal frequency		f_N	-		2593,0 MHz
Passband		PB	-	$f_N \pm$	33,0 MHz
Pass band variation	in an arbitrary 1,25 MHz segment within PB		0,1 dB	max.	0,5 dB
Absolute attenuation		a_{abs}			
0 MHz ...	2400 MHz	34	dB	min.	20 dB
2400 MHz ...	2440 MHz	35	dB	min.	25 dB
2440 MHz ...	2470 MHz	32	dB	min.	30 dB
2470 MHz ...	2490 MHz	32	dB	min.	25 dB
2690 MHz ...	2760 MHz	38	dB	min.	30 dB
2760 MHz ...	3000 MHz	47	dB	min.	25 dB
3000 MHz ...	4000 MHz	23	dB	min.	25 dB
4000 MHz ...	5600 MHz	7	dB	min.	5 dB
VSWR within PB			2,2 : 1	max.	2,5 : 1
Input power level			-	max.	10 dBm
Operating temperature range		OTR	-	- 30 °C ... + 85 °C	
Storage temperature range			-	- 40 °C ... + 85 °C	
Temperature coefficient of frequency		TC_f **	-42 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.

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

***) with 50 ohms impedances : insertion loss: max. 5,3 dB, vswr max. 5:1 , all other parameters fullfill specification

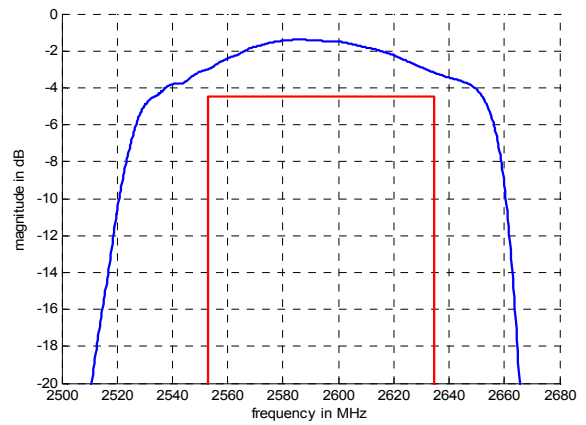
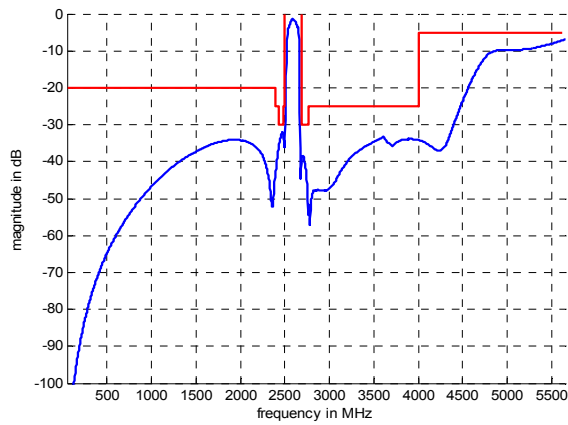
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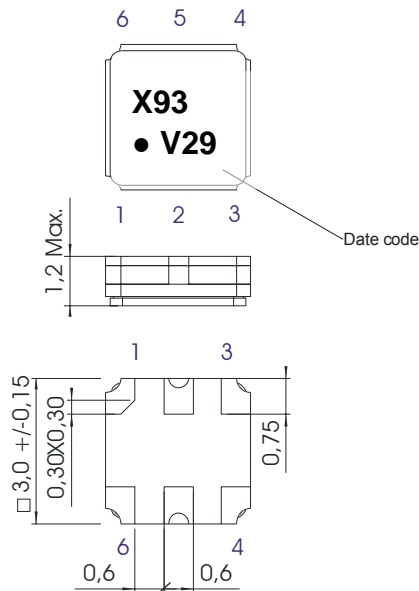
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Filter characteristic



Construction and pin connection

(All dimensions in mm)

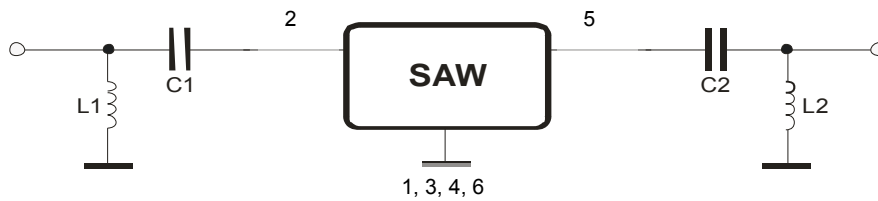


1	Ground
2	Input
3	Ground
4	Ground
5	Output
6	Ground

Date code: Year + week

V	2007
W	2008
X	2009
...	

50 Ohm 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)

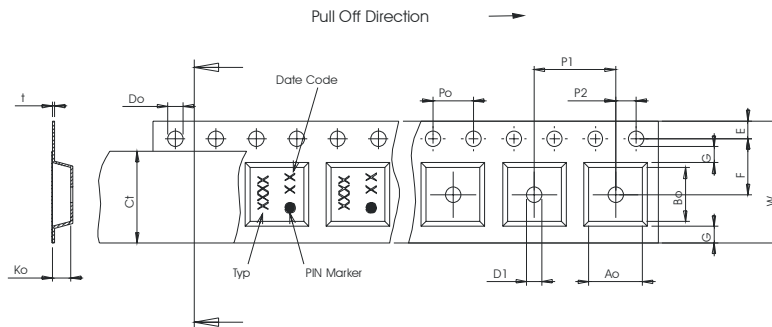
Packing

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:	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

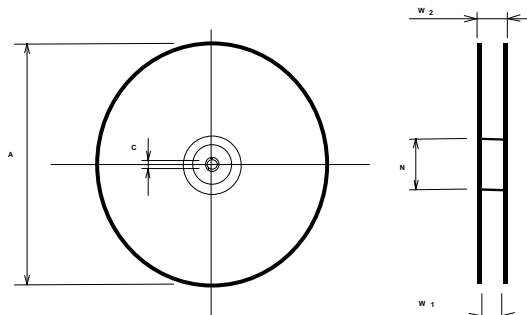
Tape (all dimensions in mm)

- 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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VI TELEFILTER**Filter specification****TFS 2593****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Alawneh	07.09.2006
1.1	- Chnage limit (VSWR and Stopband rejection) - Generation of filter specification - Add txpcial value, filter characteristic und matching circuit	Noack	19.07.07

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