

VI TELEFILTER

Filter specification

TFS 44N

1/5

Measurement condition

Ambient temperature: 23 °C
 Input power level: 0 dBm
 Terminating impedance:
 Input: 50 Ω
 Output: 2000 Ω || 3 pF

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 44N is the insertion loss. The insertion loss a_e is defined as the insertion loss at the nominal frequency f_N . The centre frequency f_C is the arithmetic mean value of the upper and lower frequencies at the 1 dB filter attenuation level relative to the insertion loss a_e . The temperature coefficient of frequency TC_f is valid for both the reference frequency f_C and the frequency response of the filter in operating temperature.

D a t a		typ. value		tolerance / limit		
Insertion loss	a_e	23	dB	max.	25	dB
Nominal frequency	f_N	-			44	MHz
Centre frequency	f_C	44	MHz		-	
Passband	PB	-		f_C	± 7	MHz
Pass band ripple (within 80% of PB)		0,5	dB	max.	0,7	dB
1 dB Bandwidth	BW_{1dB}	14,8	MHz	min.	14	MHz
40 dB Bandwidth	BW_{40dB}	20	MHz	max.	24	MHz
Relative attenuation	a_{rel}					
$f_N \pm 11$ MHz ... $f_N \pm 17$ MHz		35	dB	min.	32	dB
$f_N - 25$ MHz ... $f_N - 17$ MHz		31	dB	min.	28	dB
$f_N + 17$ MHz ... $f_N + 25$ MHz		33	dB	min.	30	dB
$f_N \pm 25$ MHz ... $f_N \pm 33$ MHz		35	dB	min.	32	dB
Group delay ripple within PB		45	ns	max.	60	ns
Operating temperature range	OTR	-		- 33 °C ... + 55		°C
Storage temperature range		-		- 40 °C ... + 85		°C
Temperature coefficient of frequency	TC_f **	-72	ppm/K		-	

**) $\Delta f_C(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_A) \times f_{CTA}(\text{MHz})$

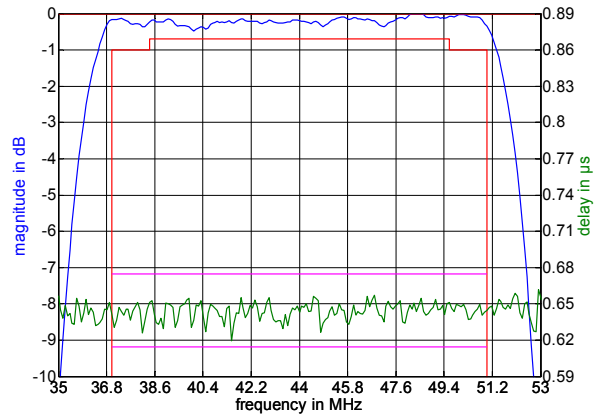
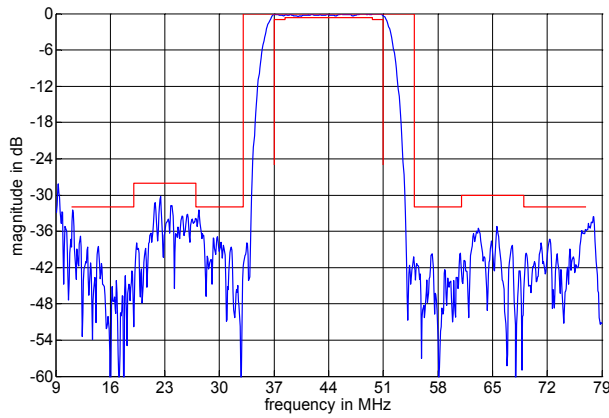
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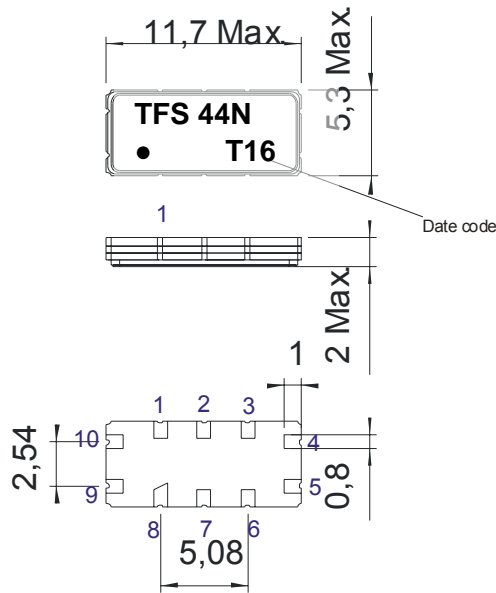
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Filter characteristic



Construction and pin connection

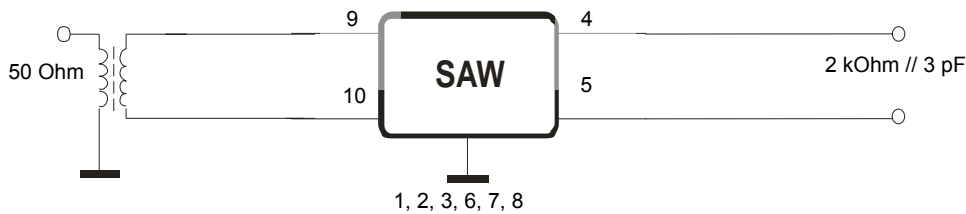
(All dimensions in mm)



- 1 Ground
- 2 Ground
- 3 Ground
- 4 Output
- 5 Output
- 6 Ground
- 7 Ground
- 8 Ground
- 9 Input
- 10 Input

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

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;

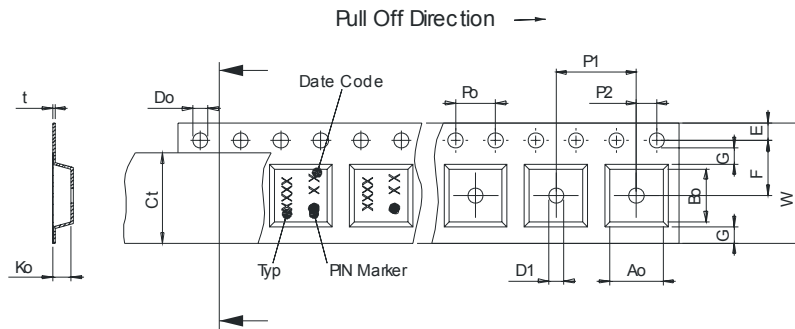
Packing

Tape & Reel: IEC 286 – 3, with 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: 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

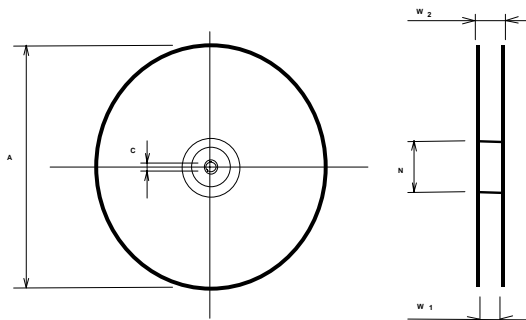
Tape (all dimensions in mm)

- W : 24,00 ± 0,3
- Po : 4,00 ± 0,1
- Do : 1,50 +0,1/-0
- E : 1,75 ± 0,1
- F : 11,50 ± 0,1
- G(min) : 0,60
- P2 : 2,00 ± 0,1
- P1 : 8,00 ± 0,1
- D1(min) : 1,50
- Ao : 5,60 ± 0,1
- Bo : 11,80 ± 0,1
- Ct : 21,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 24,4 +2/-0
- W2(max) : 30,4
- N(min) : 60
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

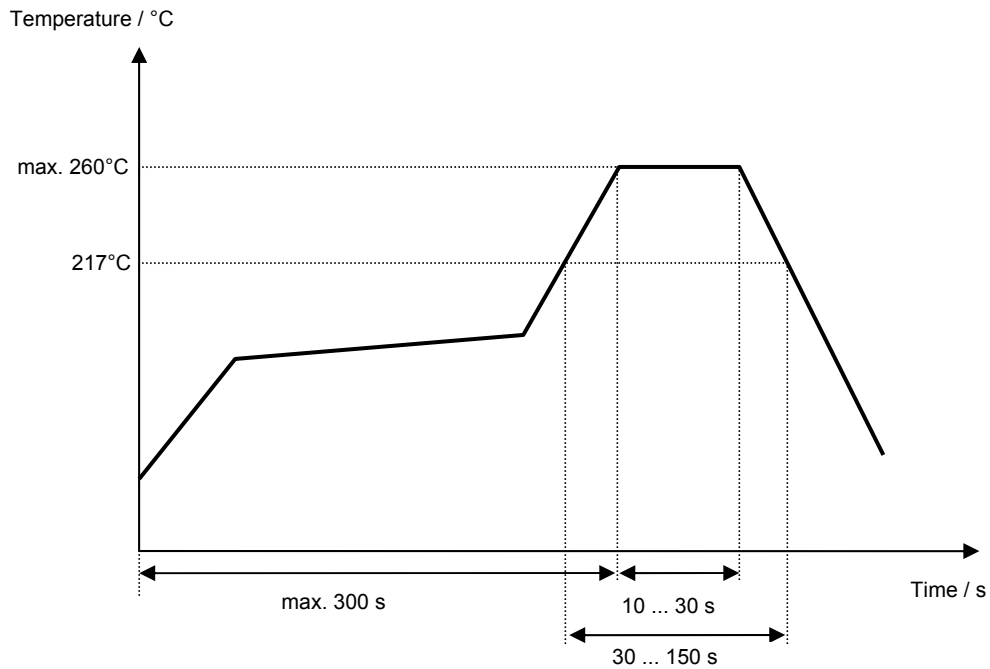
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Air reflow temperature conditions

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 44N****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- specification generated	Pfeiffer	12.04.2005
1.1	- matching configuration (input balanced driven) changed - relative attenuation, typical values and filter characteristic modified	Pfeiffer	15.04.2005
1.2	- 'remarks' and temperature coefficient corrected	Pfeiffer	22.04.2005

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