

VI TELEFILTER**Filter specification****TFS 270 B****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance input:	440 Ω	-1,40 pF
Terminating impedance output :	440 Ω	-1,40 pF
ext. coil pin 4:	120	nH

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 270B is the minimum of the pass band attenuation a_{min} . The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e . The nominal frequency f_N is fixed on 270,000 MHz without tolerance. The values of the pass band ripple and the relative attenuation a_{rel} are guaranteed in the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the measurement tolerance scheme.

P r e l i m i n a r y D a t a**typ. value****tolerance / limit**

Insertion loss (Reference level)	$a_e = a_{min}$	3	dB	max	5	dB
Nominal frequency	f_N	-			270,0	MHz
Pass band ripple						
$f_N - 70$ kHz ... $f_N + 70$ kHz		0,5		max	2	dB
$f_N - 90$ kHz ... $f_N + 90$ kHz		1,0		max	3	dB
Relative attenuation	a_{rel}					
270,0 MHz $\pm$ 400 kHz ... 270,0 MHz $\pm$ 600 kHz		30	dB	min	20	dB
270,0 MHz $\pm$ 600 kHz ... 270,0 MHz $\pm$ 1,0 MHz		40	dB	min	27	dB
270,0 MHz $\pm$ 1,0 MHz ... 270,0 MHz $\pm$ 30 MHz		50	dB	min	40	dB
Group delay distortion	GDD					
270,0 MHz $\pm$ 70 kHz		0,5	μ s	max	2	μ s
Operating temperature range					- 20 °C ... + 85 °C	
Storage temperature range					- 30 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f	- 0,036	ppm/K ²		-	
Frequency inversion temperature		+ 25	°C		-	

Generated:**Checked / approved:**

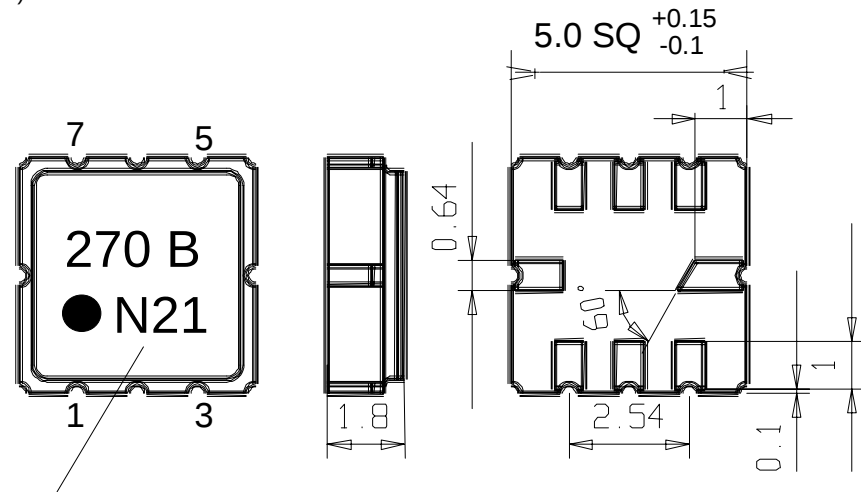
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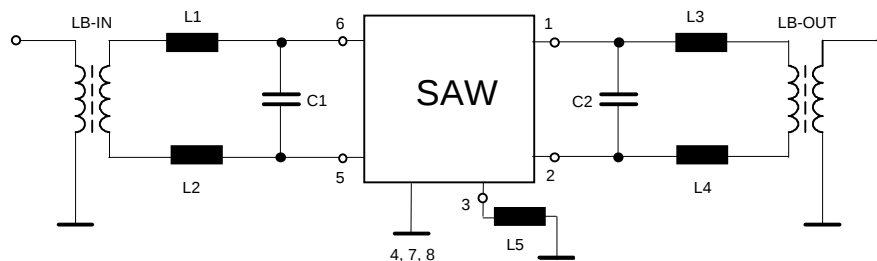
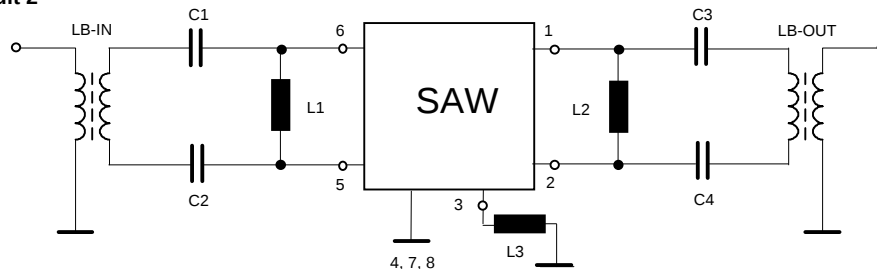
VI TELEFILTER**Filter specification****TFS 270 B****2/5****Construction, pin configuration and 50 Ω - matching network**

(All dimensions in mm)

**Date code**

Pin 1	Sym. Output	Pin 5	Sym. Input
Pin 2	Sym. Output	Pin 6	Sym. Input
Pin 3	External Coil	Pin 7	Ground
Pin 4	Package Ground	Pin 8	Package ground

Datecode:	Year+week
L	1999
M	2000
N	2001
...	

50 Ohm Test circuit 1**50 Ohm Test circuit 2**

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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 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Damp heat: 25 °C to 55°C / 95% r.H. / 10 cycles
(cycle) DIN IEC 68 - 2 – 30 Db
4. Resistance to solder heat (reflow): max. 2 times reflow process;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

Packing

Tape & Reel:

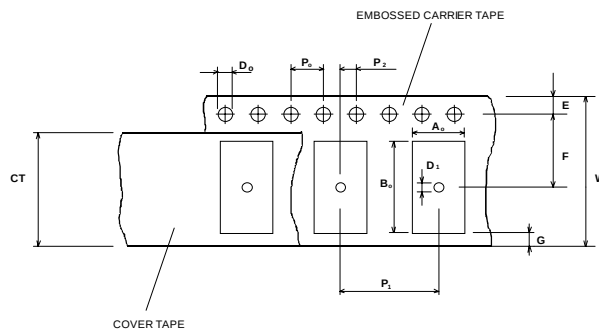
IEC 286 - 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters per reel:
reel of empty components at start:
reel of empty components at start including leader:
trailer

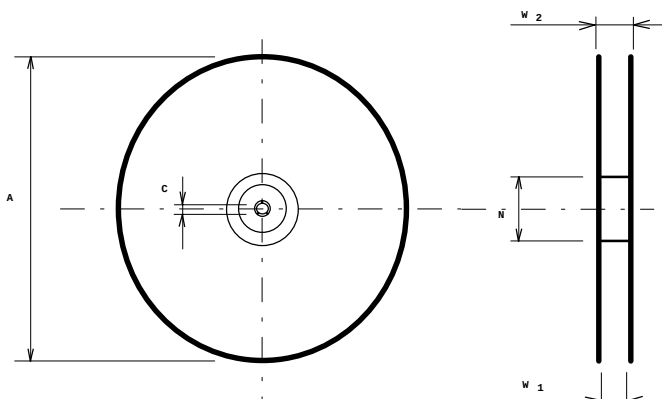
3000
min 300 mm
min 500 mm
min 300 mm

Tape (all dimensions in mm)

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

**Reel (all dimensions in mm):**

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



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. The marking of the filters is able to read if the view is directed on the upper side of the carrier tape with the sprocket holes on the right side of the tape.

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Air reflow temperature conditions

1st and 2nd air reflow profile

Name:	pre-heating periods	main-heating periods	peak temperature
Temperature:	150 °C - 170 °C	over 200 °C	255 °C ± 5 °C
Time:	60 sec. - 90 sec.	20 sec. - 25 sec.	

Chip-mount air reflow profile

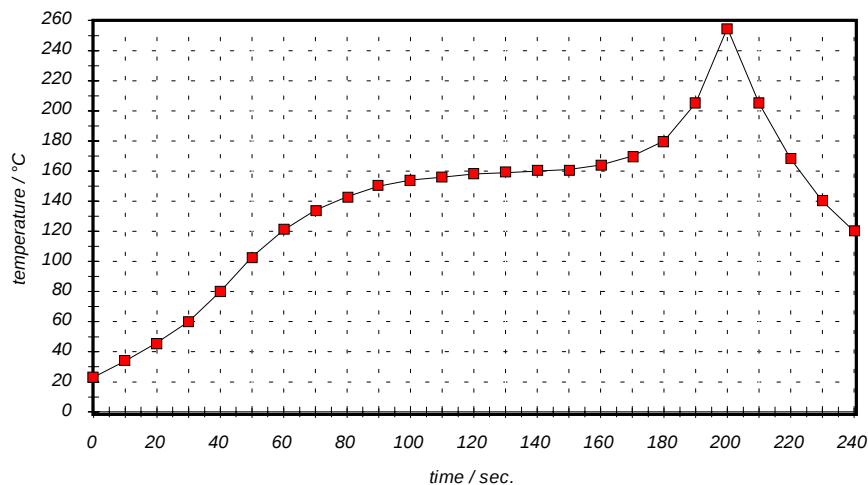


Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

time / sec.	temperature / °C	time / sec.	temperature / °C
0	23	140	160
10	34	150	161
20	46	160	164
30	60	170	170
40	80	180	180
50	103	190	205
60	121	195	230
70	134	200	255
80	143	205	230
90	150	210	205
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120

VI TELEFILTER**Filter specification****TFS 270 B****5/5****History**

Version	Reason of Changes	Name	Date
1.3	- Add history. - Change date code from month to week. - Correct tape and reel information.	Dr. Wall	21.05.2001

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