

VI TELEFILTER**SAW filter specification****TFS 270A1****1/4****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 0 dBm
 Terminating impedance input: 510 Ω || -1.75 pF
 Terminating impedance output: 510 Ω || -1.75 pF
 ext. coil pin4: 82 nH

Construction

see page 2

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 270A1 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.

Preliminary Data		typ. value		tolerance / limit	
Insertion loss (Reference level)	$a_e = a_{min}$	3	dB	max 5	dB
Nominal frequency	f_N	-		270,000	MHz
Pass band ripple $f_N - 70$ kHz ... $f_N + 70$ kHz $f_N - 90$ kHz ... $f_N + 90$ kHz		0,5 1,0		max 2 max 3	dB dB
Relative attenuation	a_{rel}				
270,0 MHz ± 400 kHz ... 270,0 MHz ± 600 kHz		30	dB	min 20	dB
270,0 MHz ± 600 kHz ... 270,0 MHz ± 1,0 MHz		40	dB	min 27	dB
270,0 MHz ± 1,0 MHz ... 270,0 MHz ± 30 MHz		50	dB	min 40	dB
Group delay distortion	GDD				
270,0 MHz ± 70 kHz		0,5	µs	max 2	µs
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:

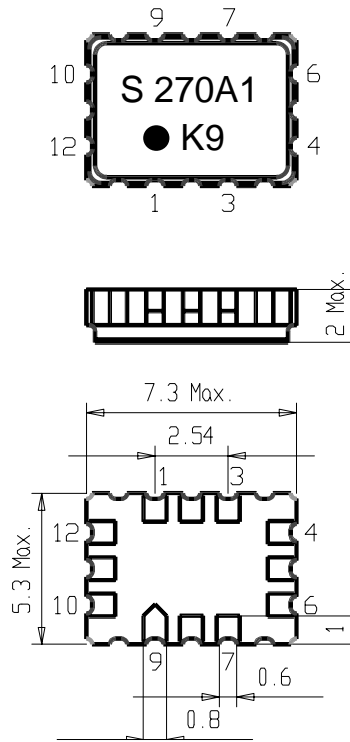
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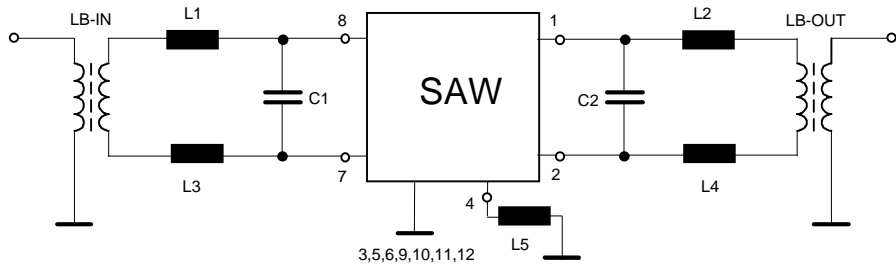
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Construction and pin configuration
(All dimensions in mm)

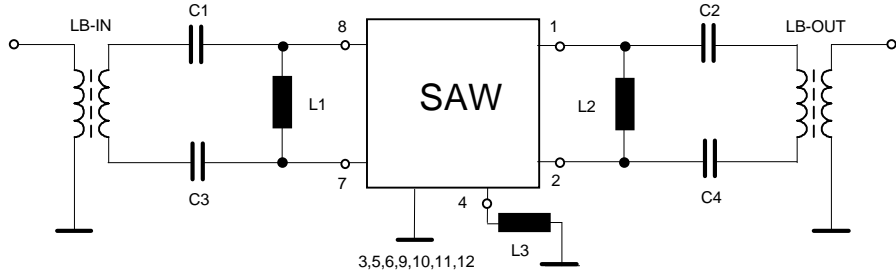
- 1 Output 2 Output
- 3 Ground 4 ext.coil
- 5 Ground 6 Ground
- 7 Input 8 Input
- 9 Ground 10 Ground
- 11 Ground 12 Ground



50 Ohm Test circuit 1



50 Ohm Test circuit 2



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VI TELEFILTER**SAW filter specification****TFS 270A1****3/4****Stability characteristics**

After the following tests the filter shall meet the whole specification:

1. Shock: 100g, 18 ms, half sine wave, 3 shocks each plane;
IEC 68 - 2 - 27
2. Vibration: 10 Hz to 500 Hz, 0.35 mm amplitude, 5g; 2 hours for 3 planes;
IEC 68 - 2 - 6
3. Damp heat: 90 % to 95 % rel. humidity, 40 °C, 10 days;
IEC 68 - 2 - 3
4. Resistance to solder heat (Reflow): 260 °C for 10 sec;

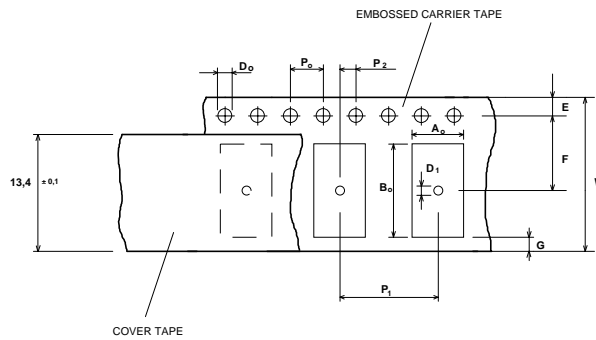
Packing

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;

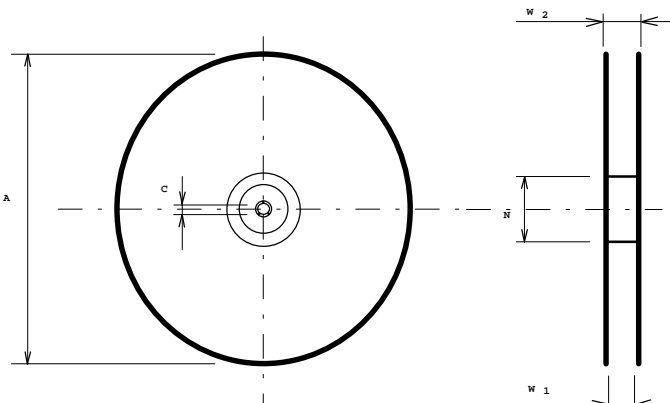
max. pieces of filters per reel: 3400

Tape (all dimensions in mm)

W	: 16 ± 0,3
Po	: 4 ± 0,1
Do	: 1,5 + 0,5
D1	: 1,5 ± 0,5
E	: 1,75 ± 0,1
F	: 7,5 ± 0,1
G (min)	: 0,75
P2	: 2 ± 0,05
P1	: 8 ± 0,1
D1(min)	: 1,5
Ao	: 5,4 ± 0,1
Bo	: 7,4 ± 0,1

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

A	:	330
W1	:	16,4 +2
W2 (max)	:	22,4
N (min)	:	>= 90
C	:	13 ± 0,25



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

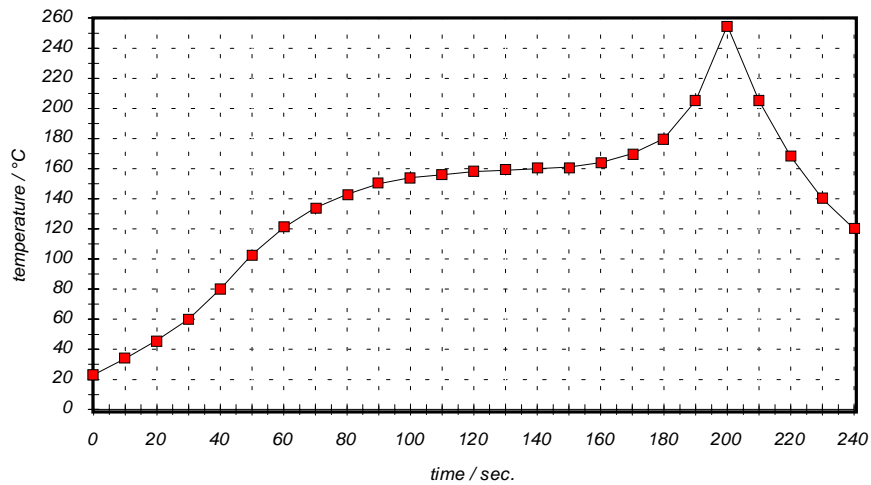


Table for temperature vs. time during the air reflow process

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

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