

**VI TELEFILTER**

**Filter specification**

**TFS 374B**

**1/5**

**Measurement condition**

Ambient temperature: 23 °C  
 Input power level: 5 dBm  
 Terminating impedances  
     for input: 210 Ω || -5.2 pF  
     for output: 305 Ω || -3.4 pF

**Characteristics**

**Remark:**

The reference level for the relative attenuation  $a_{rel}$  of TFS374B is the minimum of the pass band attenuation  $a_{min}$ . This value is defined as the insertion loss  $a_e$ . The centre frequency  $f_c$  is the arithmetic mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the insertion loss  $a_e$ . The given values for the relative attenuation  $a_{rel}$  and the group delay ripple have to be reached at the frequencies given below, even if the centre frequency  $f_c$  is shifted due to the temperature coefficient of frequency  $TC_f$  in the operating temperature range and due to a production tolerance for the centre frequency  $f_c$ .

Data		typ. value		tolerance/limit	
<b>Insertion loss</b> (Reference level)	$a_e$	8,7	dB	max. 10	dB
<b>Nominal frequency</b>	$f_N$	-		374,000	MHz
<b>Centre frequency</b>	$f_C$	374,000	MHz	-	
<b>3 dB bandwidth</b>	BW	23	MHz	min. 17	MHz
<b>Relative attenuation</b>	$a_{rel}$				
$f_N$ ... $f_N \pm 7$ MHz	7 MHz	0,8	dB	max 1	dB
$f_N \pm 7$ MHz ... $f_N \pm 8,5$ MHz	8,5 MHz	-		max 3	dB
$f_N - 100$ MHz ... $f_N - 33$ MHz	33 MHz	54	dB	min 45	dB
$f_N - 33$ MHz ... $f_N - 22$ MHz	22 MHz	53	dB	min 40	dB
$f_N - 22$ MHz ... $f_N - 16,5$ MHz	16,5 MHz	40	dB	min 30	dB
$f_N + 16,5$ MHz ... $f_N + 22$ MHz	22 MHz	44	dB	min 30	dB
$f_N + 22$ MHz ... $f_N + 43$ MHz	43 MHz	48	dB	min 35	dB
$f_N + 43$ MHz ... $f_N + 100$ MHz	100 MHz	49	dB	min 40	dB
<b>Group delay ripple</b> in $f_N \pm 7$ MHz		40	ns	max 100	ns
<b>Triple transit suppression</b>		40	dB	min 30	dB
<b>Operating temperature range</b>				- 10 °C ... + 85 °C	
<b>Storage temperature range</b>				- 40 °C ... + 85 °C	
<b>Temperature coefficient of frequency</b>	$TC_f$	-94	ppm/K	-	
<b>Input power level</b>				max 10	dBm

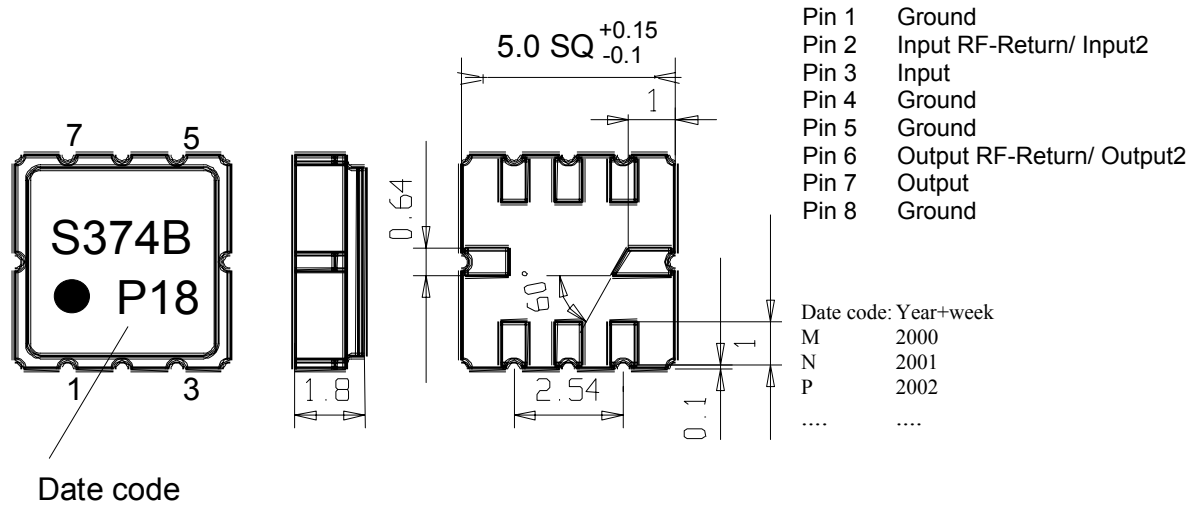
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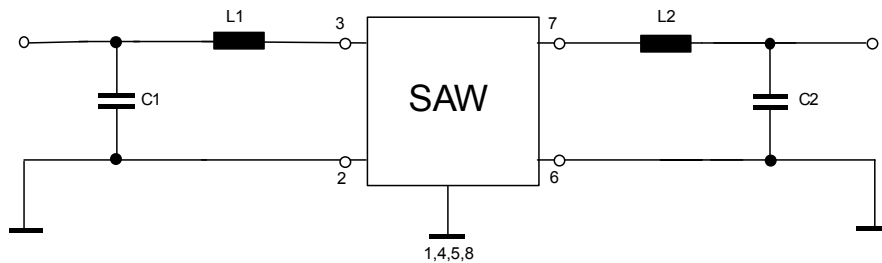


**Construction and pin configuration**

(All dimensions in mm)



**50 Ω Test circuit 1 ( unbalanced )**



**Stability characteristics**

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

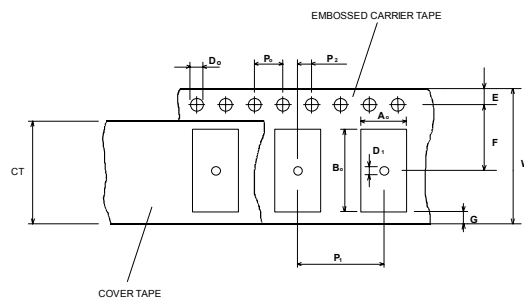
1. Shock: 500g, 18 ms, half sine wave, 3 shocks each plane;  
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans;  
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles  
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: twice max. ;  
for temperature conditions, please refer to the attached "Air reflow temperature conditions" on page 4;

**Packing**

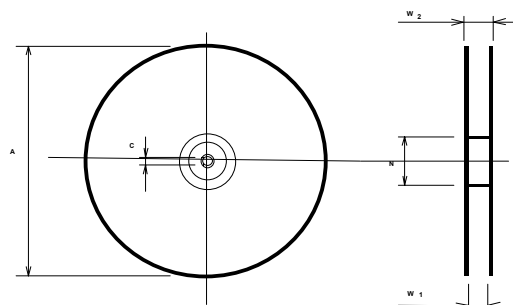
Tape & Reel: IEC 286 - 3, with exception of value for N and minimum bending radius;  
tape type II, embossed carrier tape with top cover tape on the upper side;  
max. pieces of filters per reel: 3000  
reel of empty components at start: min 300 mm  
reel of empty components at start including leader: min 500 mm  
trailer: min 300 mm

**Tape (all dimensions in mm)**

W : 12 ± 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 ± 0,10  
D1(min) : 1,5  
Ao : 5,30 ± 0,1  
Bo : 5,30 ± 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 ± 0,2



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. Markings on the filters can be read if the upper side of the carrier tape is regarded with the sprocket holes on its right.

**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.	

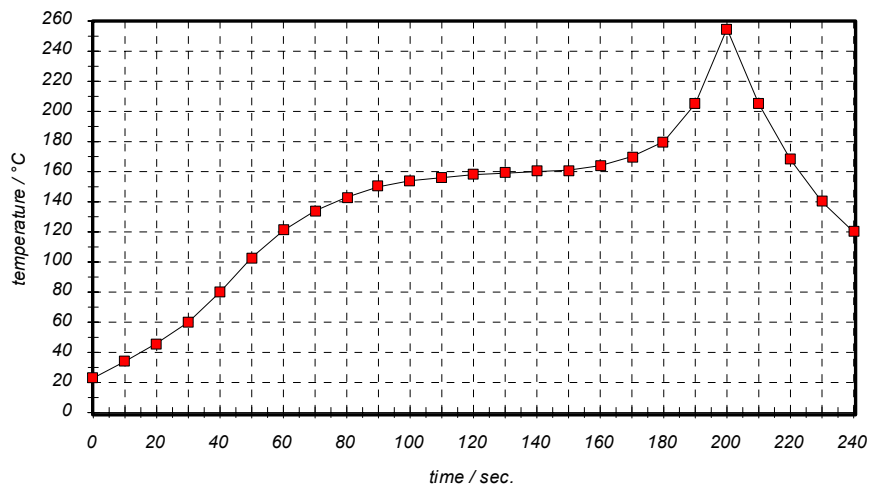
**Chip-mount air reflow profile**

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 374B****5/5****History**

<b>version</b>	<b>reason of changes</b>	<b>name</b>	<b>date</b>
1.0	generate specification	Steiner	02.05.2002
2.0	terminating impedances added	Steiner	14.10.2002