

VI TELEFILTER**Filter specification****TFS 342****1/5****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 0dBm
 Source impedance: 23,5 Ω || -17,8 pF
 Load impedance: 34,0 Ω || -18.9 pF

Characteristics**Remark:**

Reference level for the relative attenuation a_{rel} of the TFS 342 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 centre frequency f_c is the arithmetic mean value of the upper and lower frequencies at the 2.0 dB filter attenuation level relative to the insertion loss a_e . The nominal frequency f_N is fixed on 342,5 MHz without tolerance. The given values for the relative attenuation a_{rel} and for the group delay ripple have to be reached at the frequencies given below also 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 .

D a t a		typ. value		tolerance / limit	
Insertion loss (Reference level)	$a_e = a_{min}$	9,5	dB	max.	11 dB
Nominal frequency	f_N	-			342,5 MHz
Pass band					
Pass band ripple	$f_N \pm 12,5$ MHz	1,2	dB	max.	2,0 dB
Group delay	GD				
Group delay ripple	$f_N \pm 12,5$ MHz	80	ns	max.	150 ns
Relative attenuation	a_{rel}				
$f_N - 341,5$ MHz ...	$f_N - 20,0$ MHz	40	dB	min.	35 dB
$f_N + 20,0$ MHz ...	$f_N + 40,0$ MHz	35	dB	min.	30 dB
$f_N + 40,0$ MHz ...	$f_N + 207,5$ MHz	40	dB	min.	35 dB
$f_N + 207,5$ MHz ...	$f_N + 657,0$ MHz	50	dB	min.	27 dB
Input compression 1 dB		-		min.	+12 dBm
Input Intermodulation IP3 *)		-		min.	+35 dB
Operating temperature range					- 25 °C ... + 85 °C
Temperature coefficient of frequency TC_f		- 72	ppm/K		
Input power level				max.	+10 dBm

*) frequencies for IP3 measurement: fin1 = 330 MHz and 330.6 MHz, fin2 = 342.2 MHz and 342.8 MHz, fin3 = 354.4 MHz and 355 MHz.

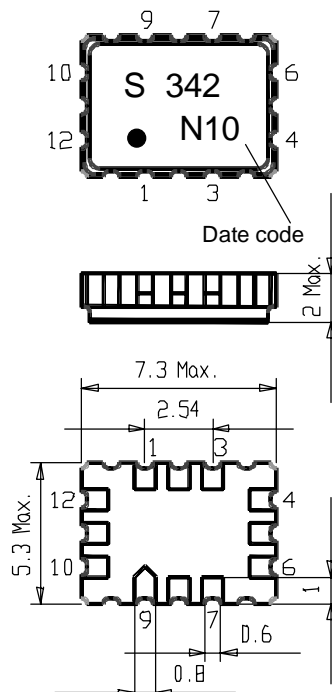
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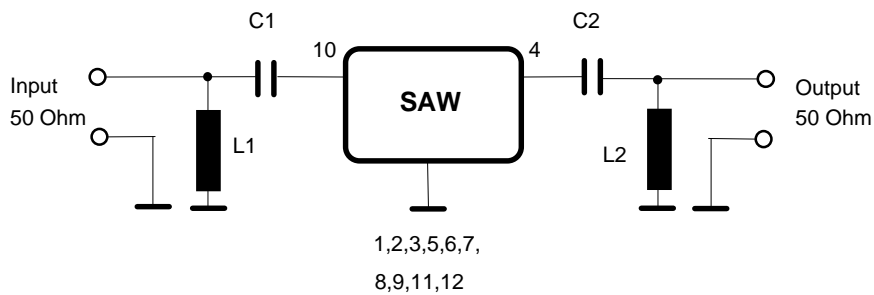
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Construction and pin connection



1	Ground
2	Ground
3	Output RF Return
4	Output
5	Package Ground
6	Ground
7	Ground
8	Ground
9	Input RF Return
10	Input
11	Package Ground
12	Ground

Date code: Year+week
 L 1999
 M 2000
 N 2001

50 Ω test circuit

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;

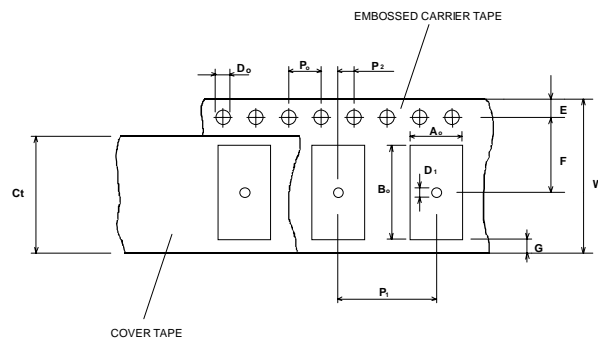
Packing:

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;

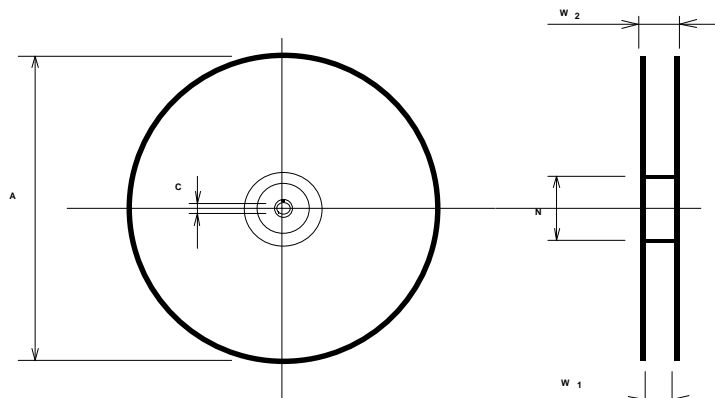
max. pieces of filters per reel: 3000
Reel of empty components at start: min 300 mm
Reel of empty components at start including leader: min 500 mm
Trailer min 300 mm

Tape (all dimensions in mm)

W	: 16 ± 0,3
Po	: 4 ± 0,1
Do	: 1,5 ± 0,1
E	: 1,75 ± 0,1
F	: 7,5 ± 0,1
G (min)	: 0,6
P2	: 2 ± 0,1
P1	: 8 ± 0,1
D1(min)	: 1,5
Ao	: 5,5 ± 0,1
Bo	: 7,5 ± 0,1
Ct	: 13,5+/-0,1

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

A	: 330
W1	: 16,4 +2
W2 (max)	: 22,4
N (min)	: 50
C	: 13 +/- 0,1



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 readable if the sprocket holes are on the left side of the tape, i.e. pin 1 identifier is close to the sprocket holes.

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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.	

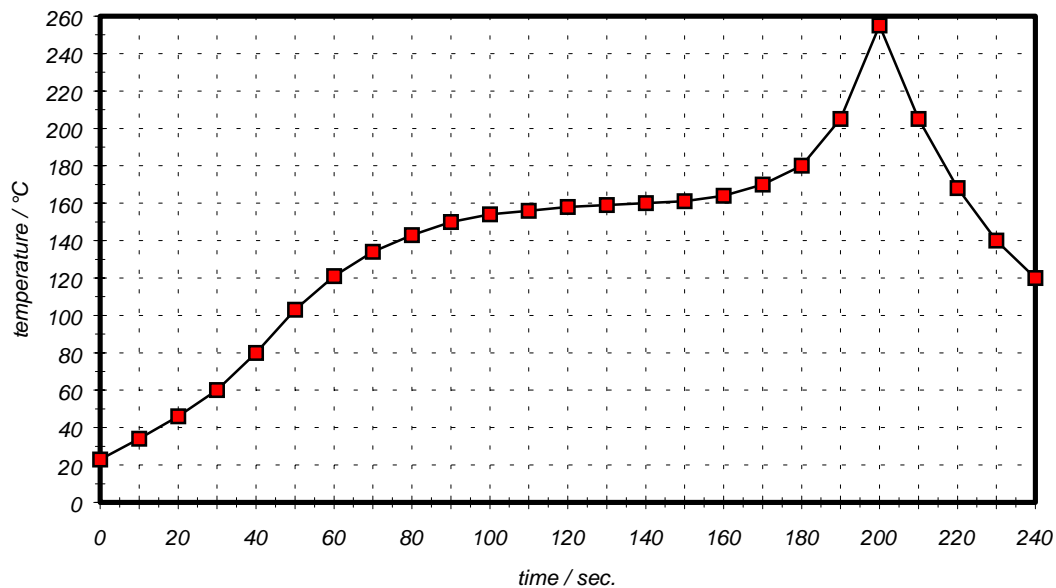
Air reflow profile

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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History

Version	Reason of Changes	Name	Date
2.0	changes in: - loss : 10 → 11dB - Group delay ripple : 100ns → 150ns - passband ripple : 1,6dB → 2,0dB - stopband attenuation : f _N +20MHz...f _N +40MHz : 35dB → 30dB	Steiner	08.03.2001

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