Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance:
source: 630 Ω || -5,6 pF
load: 600 Ω || -5,7 pF

Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the TFS 248 D is the minimum of the pass band attenuation a_{min}. This value is defined as the insertion loss a_e. The nominal frequency f_N is fixed to 248,6 MHz. 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_0 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_0.

D a t a		**typ. Value**	**Limit**
Insertion Loss (at ambient temperature)	$a_e = a_0$	4,0 dB	3,0 ... 6,0 dB
drift vs. Temperature			max. ± 0,5 dB
Nominal Frequency	f_N	-	248,6 MHz
Centre Frequency	f_0	248,6 MHz	-
3 dB bandwidth	Bw_{3dB}		min. 240 kHz
Passband			f_N ± 95 kHz
Relative Attenuation	a_{rel}		
f_N ± 95 kHz			max. 1,2 dB
f_N ± 95 kHz ... f_N ± 120 kHz			-0,9 ... +2,1 dB
f_N ± 330 kHz ... f_N ± 600 kHz			min. 13 dB
f_N ± 600 kHz ... f_N ± 800 kHz			min. 22 dB
f_N ± 800 kHz ... f_N ± 3 MHz			min. 30 dB
f_N ± 3 MHz ... f_N ± 105 MHz			min. 48 dB
f_N ± 105 MHz ... f_N ± 150 MHz			min. 51 dB
Group Delay	GD		max. 3 µs
Group Delay Ripple f_N ± 95 kHz		-	max. 0,7 µs
f_N ± 120 kHz		-	max. 1,0 µs
Input power level		-	max. 12 dBm
Operating Temperature Range			-5 °C ... + 75 °C
Temperature Coefficient	TC	- 0,032 ppm/K^2	-

generated:

checked / approved:

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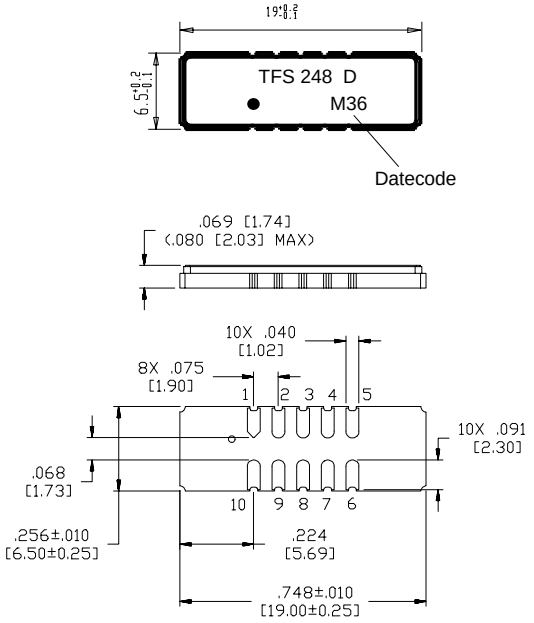
Construction and Pin Connection

(All dimensions in mm)

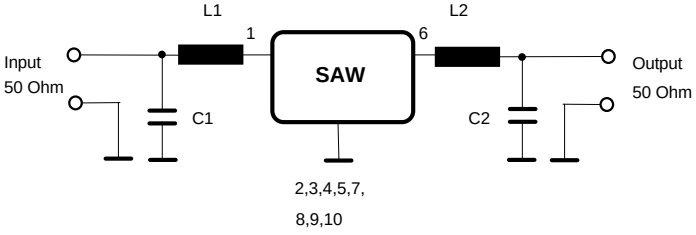


1	Input
2	Ground
3	Ground
4	Ground
5	Output RF-return
6	Output
7	Ground
8	Ground
9	Ground
10	Input RF-return

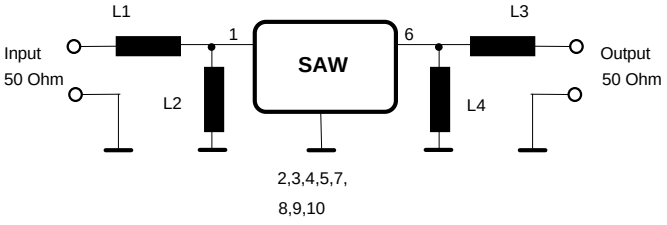
Datecode	Year+week
K	1998
L	1999
M	2000
...	

Possible matching circuits

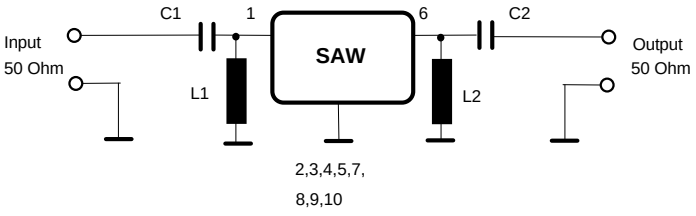
circuit 1 (Reference matching circuit for final testing at Telefilter)



circuit 2



circuit 3



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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: (cycle)	25 °C to 55°C / 95% r.H. / 10 cycles 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;

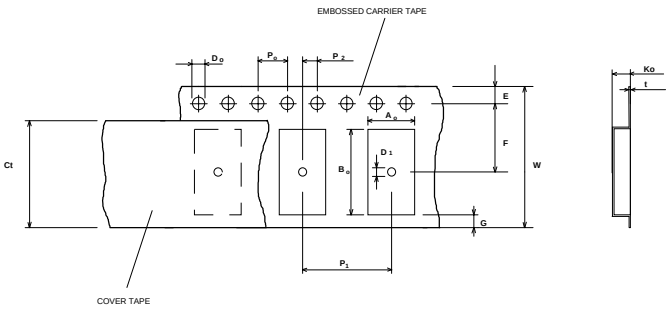
Packing

Tape & Reel: DIN 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:	1700
Real of empty components at start:	min 300 mm
Real of empty components at start including leader:	min 500 mm
Trailer	min 300 mm

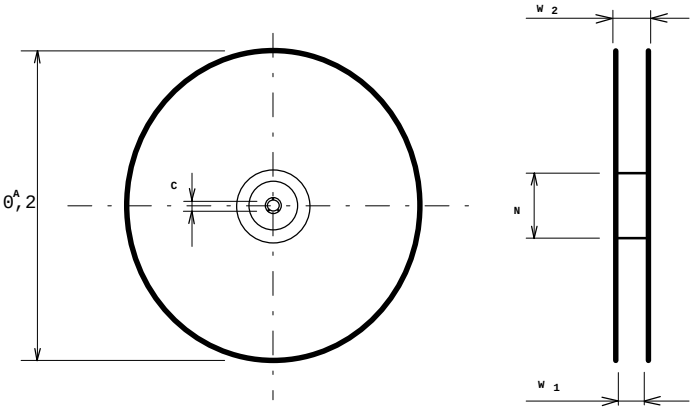
Tape (all dimensions in mm)

W	:	32 ± 0,3
Po	:	4 ± 0,1
Do	:	1,5 + 0,5
E	:	1,75 ± 0,1
F	:	11,5 ± 0,1
G (min)	:	0,75
P2	:	2 ± 0,1
P1	:	12 ± 0,1
D1(min)	:	1,5
Ao	:	7,1 ± 0,1
Bo	:	19.6 ± 0,1
Ko	:	2,1 ± 0,1
t	:	0,35 ± 0,05
Ct	:	25,5 ± 0,1



Reel (all dimensions in mm):

A	:	330
W1	:	32,4 +2
W2 (max)	:	38,4
N (min)	:	100
C	:	13 + 0,5/-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

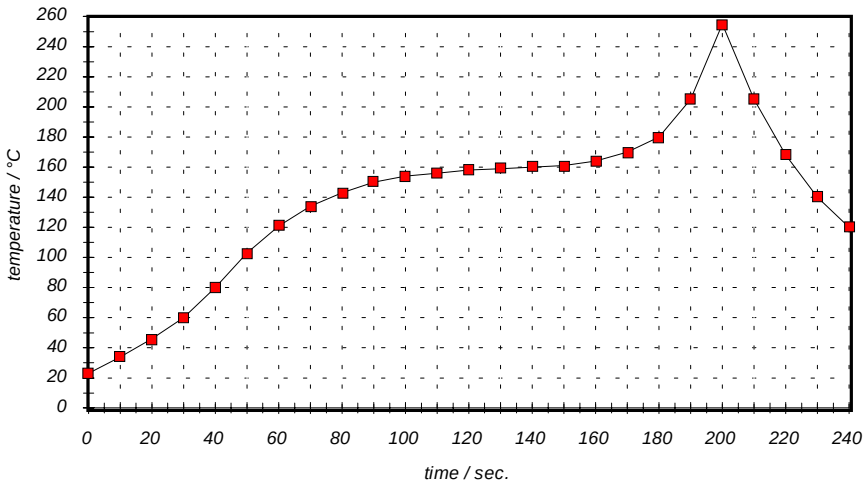

Table for temperature vs. time during the air reflow process

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

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History

Version	Reason of Changes	Name	Date
2.1	- definition for the insertion loss changed - passband ripple adjusted to the new loss definition - wrong tape and reel dimensions corrected	Steiner	14.09.2000

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