

VI TELEFILTER**Filter specification****TFS 80 F****1/5****Measurement condition**

Ambient temperature:	20 ...25 °C
Input power level:	0 dBm
Terminating impedances	
Input:	153 Ω -23.5 pF
Output:	220 Ω -19.4 pF

Construction, pin connection, 50 Ω test circuit

see page 2

Stability characteristics and packing

see page 3

Air reflow temperature conditions

see page 4

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 80F 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 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	$a_e = a_{min}$	21,7	dB	max. 24	dB
Bandwidth					
1 dB		8,18	MHz	min. 8,0	MHz
3 dB		8,65	MHz	min. 8,5	MHz
16 dB		9,72	MHz	max. 10	MHz
Nominal frequency	f_N	-		80,0	MHz
Relative attenuation	a_{rel}				
f_N	$f_N \pm 3,95$ MHz	-		max. 1	dB
$f_N \pm 3,95$ MHz ...	$f_N \pm 4,1$ MHz	-		max. 3	dB
$f_N \pm 5,05$ MHz ...	$f_N \pm 5,5$ MHz	21	dB	min. 16	dB
$f_N \pm 5,5$ MHz		43	dB	min. 40	dB
$f_N \pm 5,5$ MHz ...	$f_N \pm 50$ MHz	45	dB	min. 35	dB
Group delay ripple	GD				
$f_N - 4$ MHz ...	$f_N + 4$ MHz	75	ns	max. 150	ns
Input power level		-		max. + 10	dBm
Operating temperature range		- 25 °C ... + 75 °C			
Storage temperature range		- 30 °C ... + 85 °C			
Temperature coefficient	TC	*)	- 18 ppm/K	-	

*) - Δf (Hz) = TC (ppm/K) x (T - T₀) x F_{T0} (MHz)**Generated:****Checked / approved:**

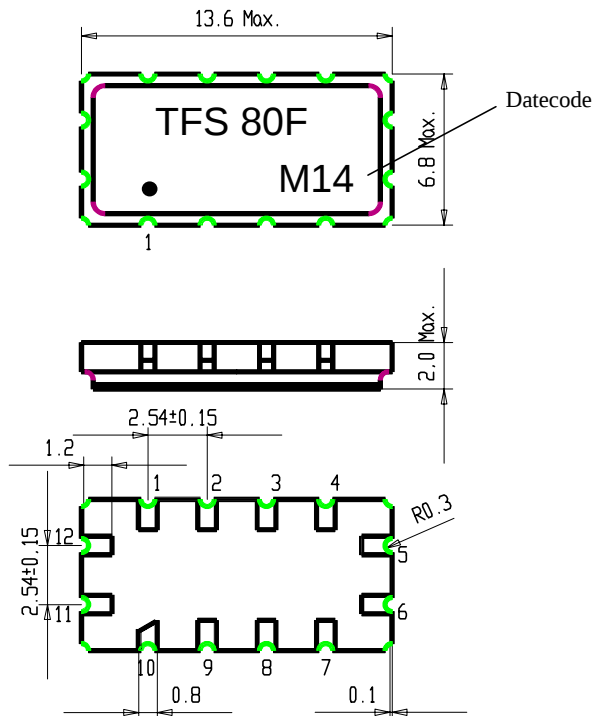
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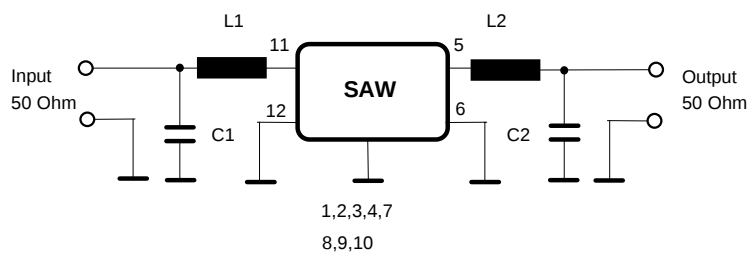
VI TELEFILTER**Filter specification****TFS 80 F****2/5****Construction and pin connection**

(All dimensions in mm)



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

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

50 Ω single ended test circuit

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VI TELEFILTER**Filter specification****TFS 80 F****3/5****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 sheet 4;

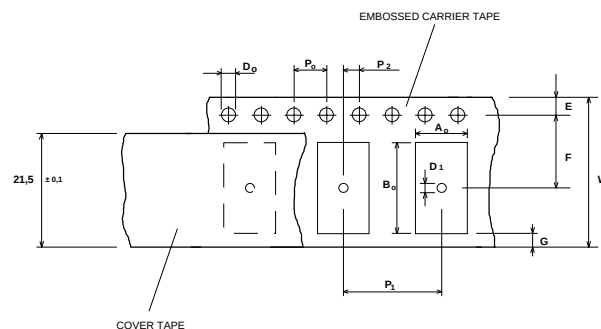
Packing

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;

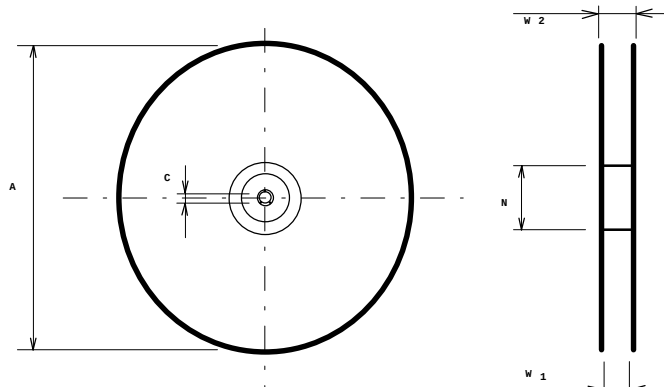
max. pieces of filters per reel:	1700
Reel of empty components at start:	min 300 mm
Reel of empty components at start including leader:	min 500 mm
Trailer	min 300 mm

Tape (all dimensions in mm)

W : 24 ± 0,3
 Po : 4 ± 0,1
 Do : 1,5 + 0,1
 E : 1,75 ± 0,1
 F : 11,5 ± 0,1
 G (min) : 0,6
 P2 : 2 ± 0,1
 P1 : 12 ± 0,1
 D1(min) : 1,5
 Ao : 7,1 ± 0,2
 Bo : 13,9 ± 0,2

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

A : 330
 W1 : 24,4 +2
 W2 (max) : 30,4
 N (min) : >= 60
 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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VI TELEFILTER**Filter specification****TFS 80 F****4/5****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.	

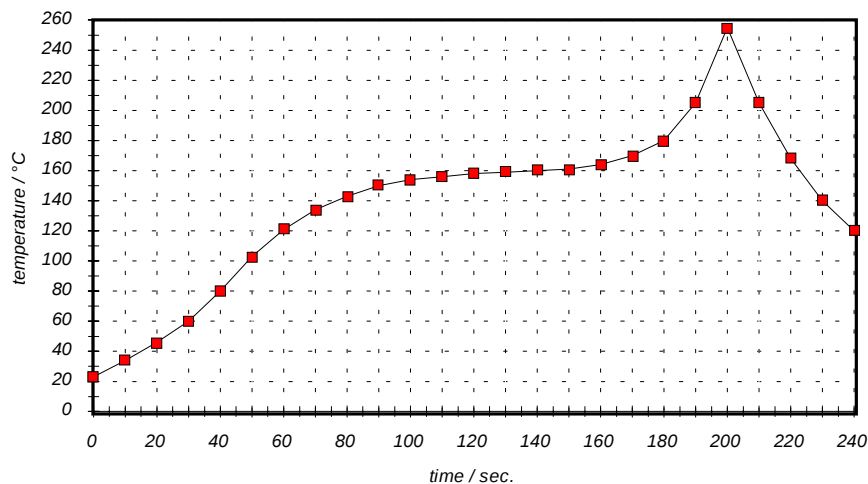
Chip-mount air reflow profile

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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VI TELEFILTER**Filter specification****TFS 80 F****5/5****History**

Version	Reason of Changes	Name	Date
1.1	- date code changed and explained - tape and reel dimensions corrected - f_N corrected	Steiner	05.04.2000

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