

VI TELEFILTER**Filter specification****TFS 286****1/5****Measurement Condition**

Ambient Temperature:	23 °C
Input Power Level:	0 dBm
Source impedance:	50 Ω single ended
Load impedance:	50 Ω single ended
Terminating impedances:	
input:	570 Ω -5.5 pF
output:	570 Ω -5.3 pF

Construction, pin connection and 50 Ω test circuit

see page 2

Characteristics**Remark:**

Reference level for the relative attenuation a_{rel} is the pass band attenuation at the nominal frequency f_N . It is defined as the insertion loss a_e . The nominal frequency f_N is fixed to 286,00 MHz. The given values for the relative attenuation a_{rel} and for the phase 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 .

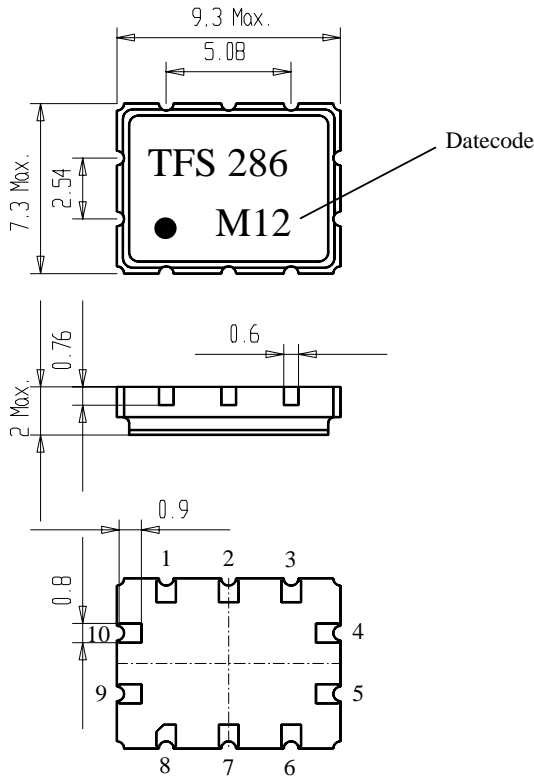
D a t a		typ. Value	Limit
Insertion Loss (Reference level)	$a_e = a_{min}$	-	max. 8 dB
Nominal Frequency	f_N	-	286,0 MHz
3 dB - Bandwidth	BW		min. 400 kHz
Pass Band Ripple $f_N - 80 \text{ kHz} \dots f_N + 80 \text{ kHz}$		-	max. $\pm 0,5$ dB
Relative Attenuation	a_{rel}		
$f_N \pm 1,8 \text{ MHz} \dots$	$f_N \pm 6 \text{ MHz}$	-	min. 20 dB
$f_N \pm 6 \text{ MHz} \dots$	$f_N \pm 75 \text{ MHz}$	-	min. 35 dB
$f_N - 285 \text{ MHz} \dots$	$f_N - 75 \text{ MHz}$	-	min. 20 dB
$f_N + 75 \text{ MHz} \dots$	$f_N + 714 \text{ MHz}$	-	min. 20 dB
Group delay f_N	-	-	max. 1 μs
Group delay ripple $f_N - 80 \text{ kHz} \dots f_N + 80 \text{ kHz}$		-	max. 1 μs
Input power level		-	max. + 10 dBm
Operating Temperature Range			- 40 °C ... + 85 °C

Generated: _____**Checked / approved:** _____

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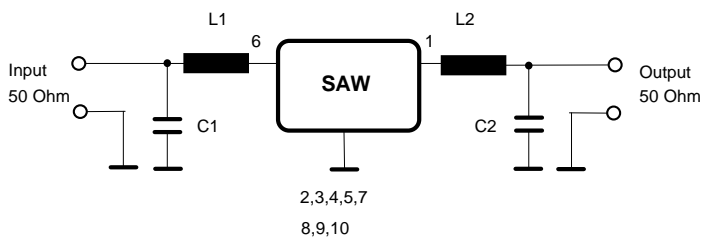
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VI TELEFILTER**Filter specification****TFS 286****2/5****Construction and pin connection**

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

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

:

50 Ω single ended test circuit

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VI TELEFILTER**Filter specification****TFS 286****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 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:

Reel of empty components at start:

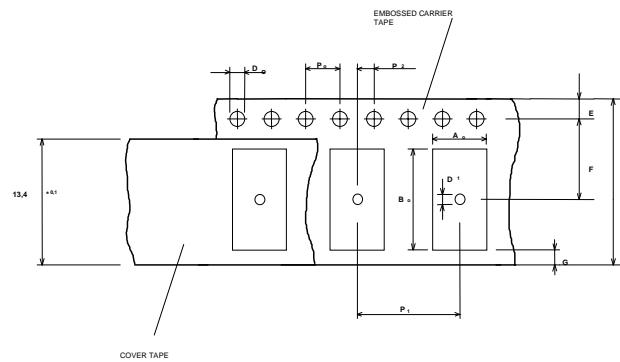
Reel of empty components at start including leader:

Trailer

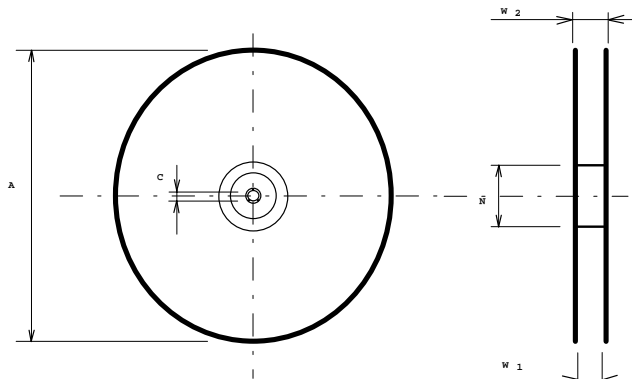
2000
min 300 mm
min 500 mm
min 300 mm

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	: 12 ± 0,1
D1(min)	: 1,5
Ao	: 7,6 ± 0,1
Bo	: 9,6 ± 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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VI TELEFILTER**Filter specification****TFS 286****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.	

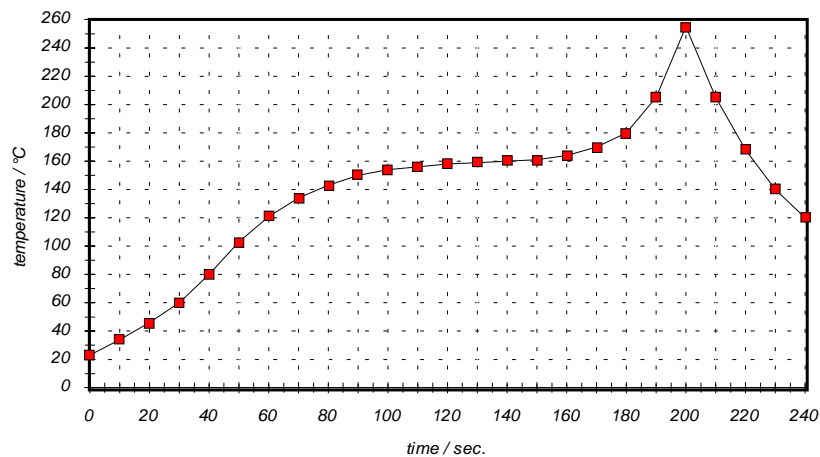
Chip-mount air reflow profile

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 286****5/5**

History

Version	Reason of Changes	Name	Date
1.4	- impedances modified - date code changed and explained	Steiner	24.03.2000

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