Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance's : 50 Ω

Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the TFS 208L is the maximum attenuation in the pass band. The maximum attenuation in the pass band is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 208 MHz without tolerance or limit. The values of relative attenuation a_{rel} are guaranteed in the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value		tolerance / limit		
Insertion loss	a_e	2,20	dB	2,5 ± 1,0		dB
(Reference level)						
Nominal frequency	f_N	-			208	MHz
1 dB band width	BW	4,95	MHz	min.	800	kHz
Amplitude ripple within f_N ± 100 kHz		0,05	dB	max.	0,20	dB
Relative attenuation	a_{rel}					
f_N ± 400 kHz		-		max.	1	dB
f_N - 14 MHz... f_N - 23 MHz		60	dB	min.	30	dB
f_N - 23 MHz... f_N - 33 MHz		52	dB	min.	44	dB
f_N - 33 MHz... f_N - 207 MHz		60	dB	min.	38	dB
f_N + 14 MHz... f_N + 28 MHz		38	dB	min.	5	dB
f_N + 28 MHz... f_N + 242 MHz		51	dB	min.	12	dB
VSWR						
f_N - 400 kHz ... f_N + 400 kHz		1,5:1		max	2 : 1	
Absolute group delay	GD*)					
f_N - 400 kHz ... f_N + 400 kHz		170	ns	max.	300	ns
Group delay ripple	GDR *)					
f_N - 400 kHz ... f_N + 400 kHz		12	ns	max.	100	ns
Intermodulation	**)					
IP_3		54	dB	min.	45	dB
Input power level				max	10	dBm
Temperature coefficient of frequency	TC_f ***)	- 33	ppm/K		-	
Operating temperature range		-		- 10 °C ... + 85 °C		
Storage temperature range				- 30°C ... + 85 °C		

***)** measured with smoothing; smoothing aperture ≤ 50 kHz
****)** modulation signals: f_N and f_N + 14 MHz, each of 10 dBm; measured signal: f_N - 14 MHz
*****)** $\Delta f(Hz) = TC_f(ppm/K) \times (\Delta T) \times f_{To}(MHz)$

generated: _____

checked / approved: _____

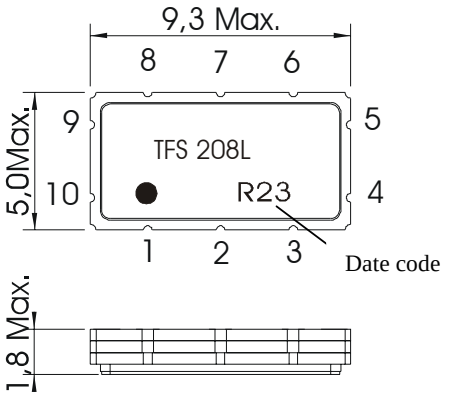
TELEFILTER GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

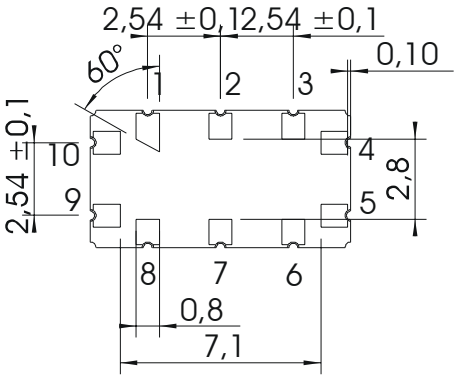
Downloaded from Elcodis.com electronic components distributor

Construction and pin connection

(All dimensions in mm)



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



Date code: Year+week

N	2001
P	2002
R	2003
...	

TELEFILTER GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Downloaded from Elcodis.com electronic components distributor

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 refer to the attached "Air reflow temperature conditions" on page 4;

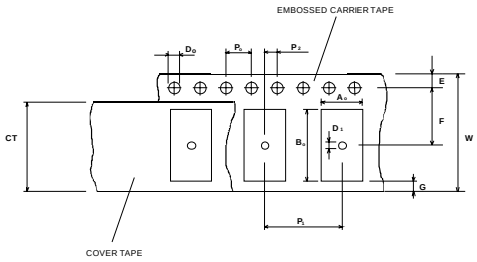
Packing

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

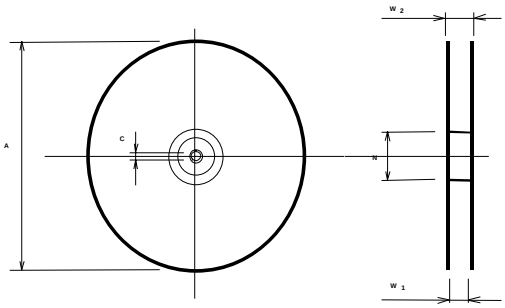
Tape (all dimensions in mm)

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	:	5,3	± 0,1
Bo	:	9,7	± 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	+ 0,5 / - 0,2



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

TELEFILTER GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Downloaded from Elcodis.com electronic components distributor

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

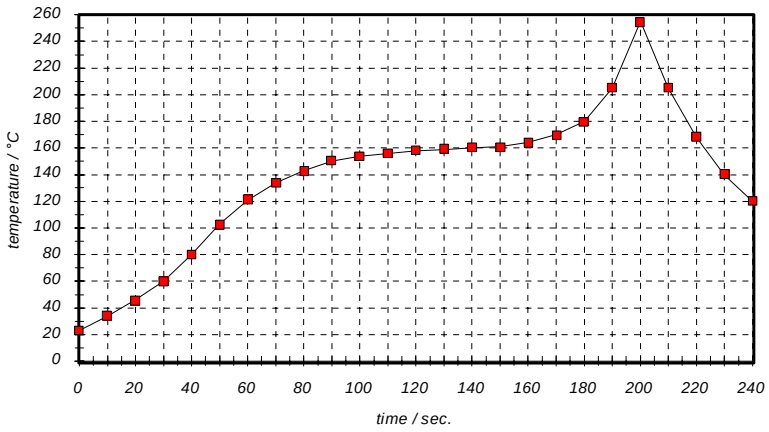


Table for temperature vs. time during the air reflow process

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

TELEFILTER GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Downloaded from Elcodis.com electronic components distributor

History

Version	Reason of Changes	Name	Date
1.0	- generation of development specification according to the customer specification (V-1.0.0; 15 Jan 03)	Dr. Sabah	07.03.03
1.1	- updated according to customer specification, version 2.0 (20th may 2003) - add of typical values and generation of filter specification	Dr. Sabah	03.06.03

2.0 Missing

TELEFILTER GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Downloaded from Elcodis.com electronic components distributor