

VI TELEFILTER**Filter Specification****TFS 125K****1 / 5****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 125K 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 125 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.

Data**typ. value****tolerance / limit**

Insertion loss	a_e	1,88 dB	2,5 ± 1,0 dB
(Reference level)			
Nominal frequency	f_N	-	125 MHz
1 dB band width	BW	2,80 MHz	300 kHz
Pass band ripple within	± 100KHz	0,10 dB	max. 0,20 dB
Relative attenuation	a_{rel}		
f_N	± 150 kHz	-	max. 1 dB
$f_N - 14$ MHz ... $f_N - 28$ MHz		50 dB	min. 5 dB
$f_N - 28$ MHz ... $f_N - 124$ MHz		65 dB	min. 12 dB
$f_N + 14$ MHz ... $f_N + 23$ MHz		40 dB	min. 30 dB
$f_N + 23$ MHz ... $f_N + 33$ MHz		55 dB	min. 44 dB
$f_N + 33$ MHz ... $f_N + 325$ MHz		42 dB	min. 38 dB
VSWR			
$f_N - 150$ kHz ... $f_N + 150$ kHz		1.3:1	max 2 : 1
Absolute group delay	GD*)		
$f_N - 150$ kHz ... $f_N + 150$ kHz		245 ns	max. 300 ns
Group delay ripple	GDR *)		
$f_N - 150$ kHz ... $f_N + 150$ kHz		15 ns	max. 100 ns
Intermodulation	**))		
IP ₃		54 dB	min. 45 dB
Input power level			max 10 dBm
Temperature coefficient of frequency	TC _f ***)	- 72 ppm/K	-
Operating temperature range		-	- 10 °C ... + 85 °C
Storage temperature range			- 30°C ... + 85 °C

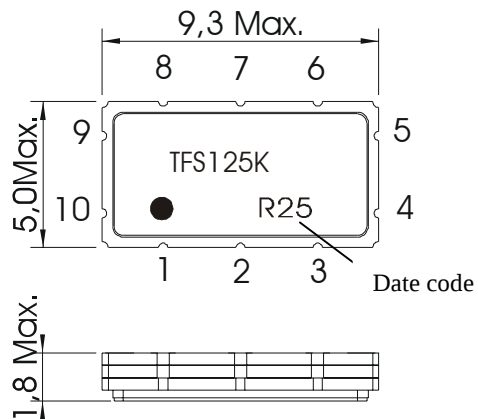
*) measured with smoothing; smoothing aperture ≤ 50 kHz

) modulation signals: f_N and $f_N + 14$ MHz, each of 10 dBm; measured signal: $f_N - 14$ MHz*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (\Delta T) \times f_{T0}(\text{MHz})$ **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**

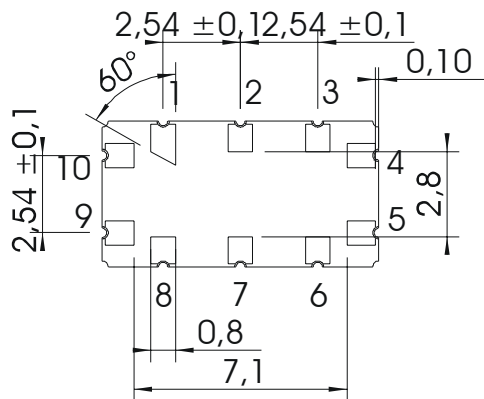
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Construction and pin connection

(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
...	

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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. 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:

Reel of empty components at start:

Reel of empty components at start including leader:

Trailer

3000

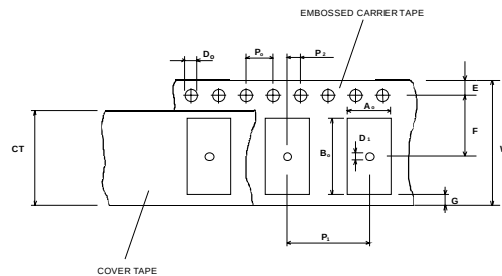
min 300 mm

min 500 mm

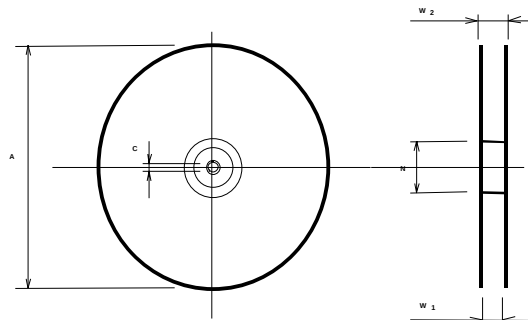
min 300 mm

Tape (all dimensions in mm)

W	: 16 ± 0,3
Po	: 4 ± 0,1
Do	: 1,5 ± 0,1
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.

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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.	

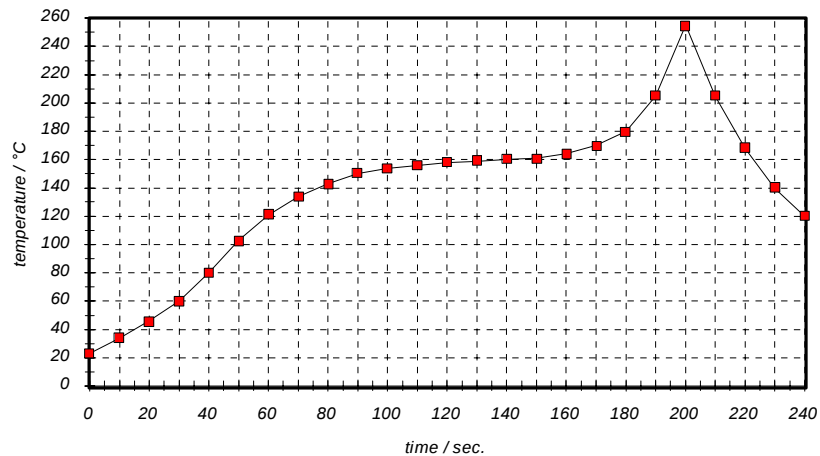
Chip-mount air reflow profile

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
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	- add of typical values and generation of filter specification	Dr. Sabah	03.06.03
1.2	- updated of filter specification according to customer specification, version 2.0.0	Dr. Sabah	17.06.03

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