

VI TELEFILTER**Filter Specification****TFS 452A****1/5****Measurement condition**

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

Characteristics**Remark:**

The maximum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 452,5 MHz without any tolerance or limit. The values of absolute attenuation a_{rel} are guaranteed for 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	1,1	dB	max.	3,0	dB
Nominal frequency	f_N	452,5	MHz		452,5	MHz
Passband -3dB at 23°C	PB	8,7	MHz	f_N	± 2,5	MHz
Passband ripple		0,3	dB	max.	1,5	dB
Absolute attenuation	a_{abs}					
300 MHz ... 347,5 MHz		32	dB	min.	30	dB
347,5 MHz ... 442,5 MHz		29	dB	min.	25	dB
460 MHz ... 465 MHz		44	dB	min.	30	dB
465 MHz ... 2000 MHz		31	dB	min.	25	dB
Operating temperature range	OTR	-		- 10 °C ... + 85 °C		
Storage temperature range		-		- 40 °C ... + 85 °C		
Temperature coefficient of frequency	TC_f *	-35,1	ppm/K	-		
Input power level		-		max.	25	dBm
VSWR	in PB	1,6:1		max.	2,1:1	

*) $\Delta f_C(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{CAT}(\text{MHz})$.

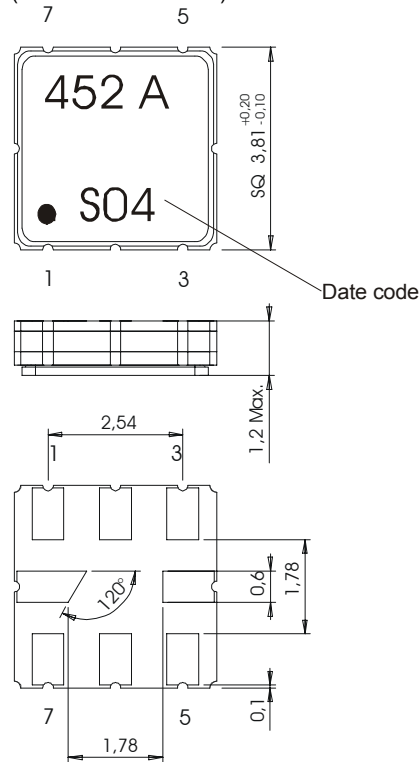
Generated:**Checked / approved:**

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Construction und pin configuration

(All dimensions in mm)



Date code: Year + week

P	2002
R	2003
S	2004

...

Pin 1	Ground
Pin 2	Input
Pin 3	Ground
Pin 4	Ground
Pin 5	Ground
Pin 6	Output
Pin 7	Ground
Pin 8	Ground

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

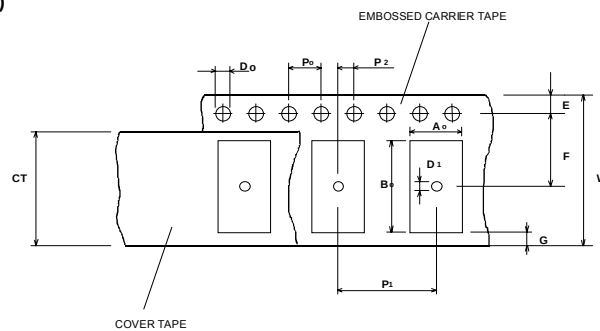
Packing

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

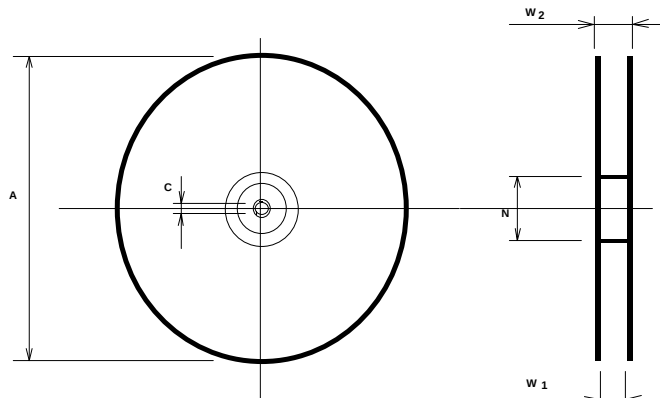
Tape (all dimensions in mm)

W	: 12	± 0,3
Po	: 4	± 0,1
Do	: 1,5	+ 0,1
E	: 1,75	± 0,1
F	: 5,5	± 0,05
G (min)	: 0,75	
P2	: 2	± 0,05
P1	: 8	± 0,1
D1(min)	: 1,5	
Ao	: 4,3	± 0,1
Bo	: 4,3	± 0,1
Ct	: 9,5	± 0,1



Reel (all dimensions in mm):

A	: 330
W1	: 12,4 + 2,0
W2 (max)	: 18,4
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

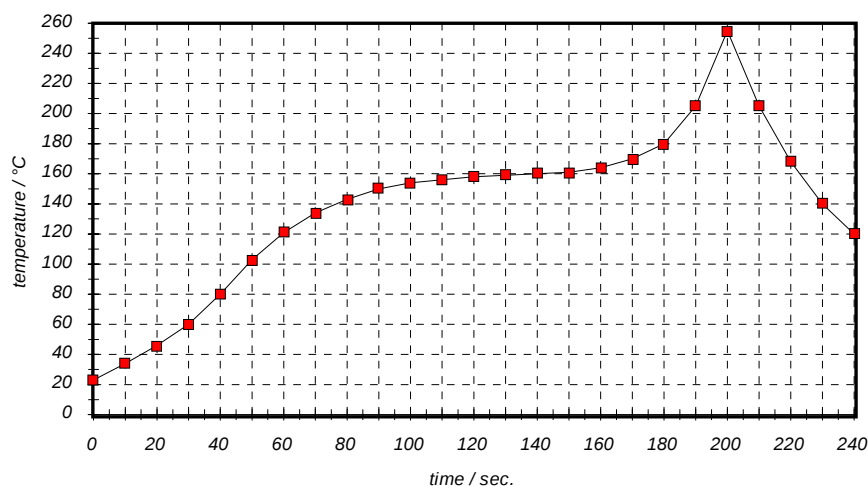


Table for temperature vs. time during the air reflow process

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

VI TELEFILTER**Filter Specification****TFS 452A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Roizengaft	8.10.2003
1.1	- Change of package	Roizengaft	19.11.2003
1.2	- Generation of filter specification, add of typ. values	Noack	21.01.2004

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