

Vectron International**Filter specification****TFS 155A****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	760 Ω -1,95 pF	
Output:	760 Ω -1,95 pF	

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS155A 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 155,52 MHz without any tolerance or limit. The values of relative 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 (reference level)	a_e	-	-	max.	5 dB
Nominal frequency	f_N	155,525	MHz		155,52 MHz
Usable Signal Bandwidth		-	-	min.	± 10 kHz
Relative attenuation	a_{rel}				
$f_N + 910$ kHz		67	dB	min.	60 dB
$f_N \pm 3$ MHz $f_N \pm 10$ MHz		62	dB	min.	50 dB
Frequency inversion temperature		25	°C		-
Temperature coefficient of frequency	TC_f **	-0,036	ppm/K ²		-
Operating temperature range	OTR	-	-	- 10 °C ... + 50	°C
Storage temperature range		-	-	- 40 °C ... + 85	°C

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

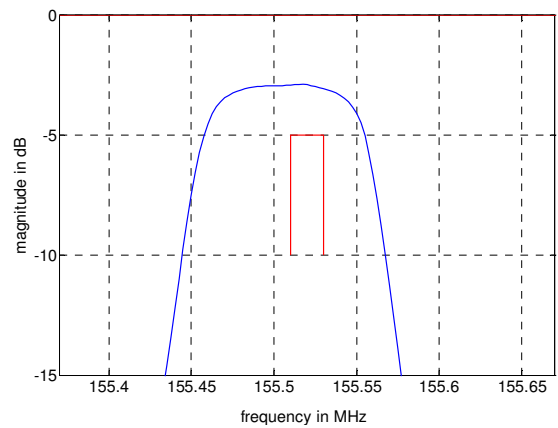
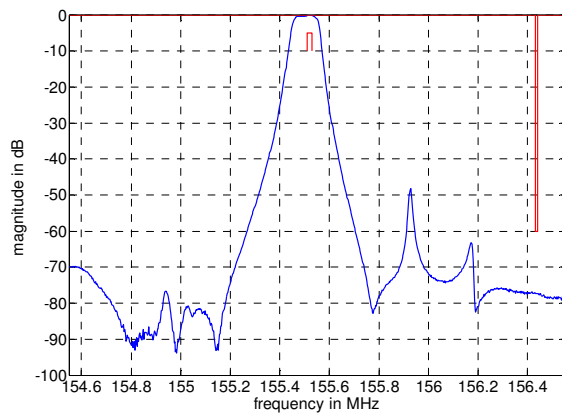
**) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$.

Generated:**Checked / Approved:**

Vectron International GmbH & Co. KG
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@vectron.com

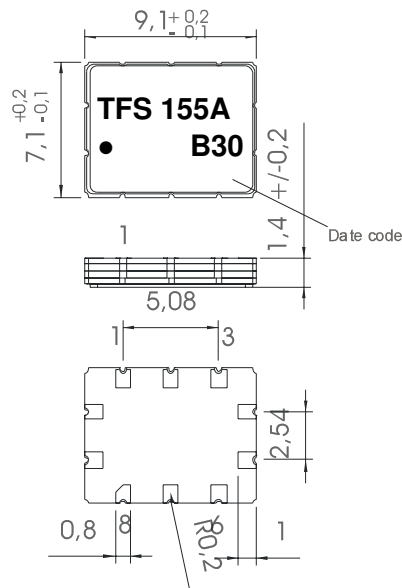
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Filter characteristic



Construction and pin connection

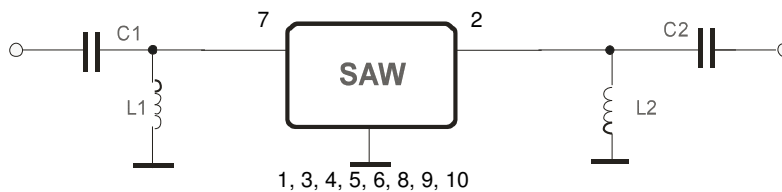
(All dimensions in mm)



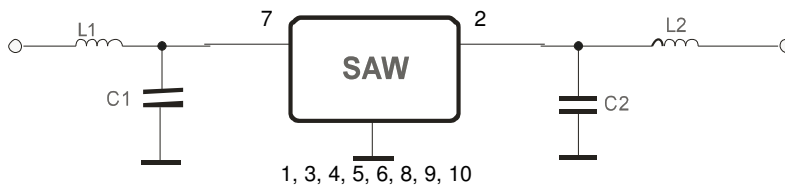
1	Ground
2	Output
3	Ground
4	Ground
5	Ground
6	Output
7	Input
8	Ground
9	Ground
10	Ground

Date code: Year + week
 A 2010
 B 2011
 C 2012
 ...

50 Ohm Test circuit 1



50 Ohm Test circuit 2



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Stability Characteristics

After the following tests the filter shall meet the whole specification:

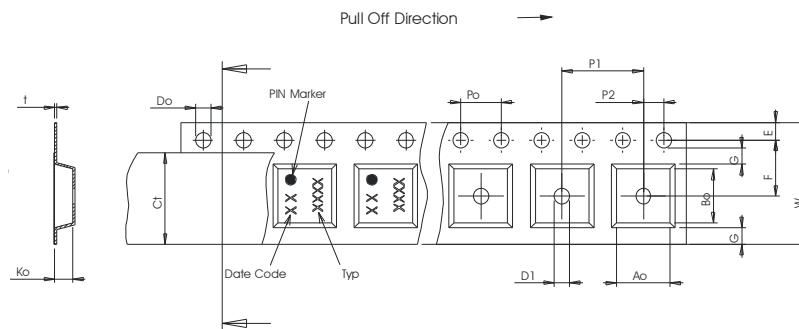
- 1. Shock: 500g, 18 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
- 2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
- 3. Damp heat: 25 °C to 55 °C / 95% r.H. / 10 cycles
(cycle) DIN IEC 68 - 2 – 30 Db
- 4. Resistance to solder heat (reflow): 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: 2000
reel of empty components at start: min 300 mm
reel of empty components at start including leader: min 500 mm
trailer min 300 mm

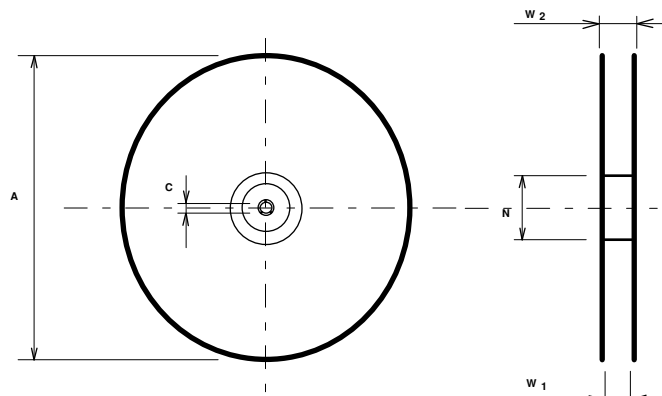
Tape (all dimensions in mm)

- 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 : 12 ± 0,1
- D1(min) : 1,5
- Ao : 7,6 ± 0,1
- Bo : 9,6 ± 0,1
- CT : 13,5 + 0,1



Reel (all dimensions in mm):

- A : 330
- W1 : 16,4 +2
- W2 (max) : 22,4
- N (min) : 60
- C : 12,8 ± 0,1



The minimum bending radius is 45 mm.

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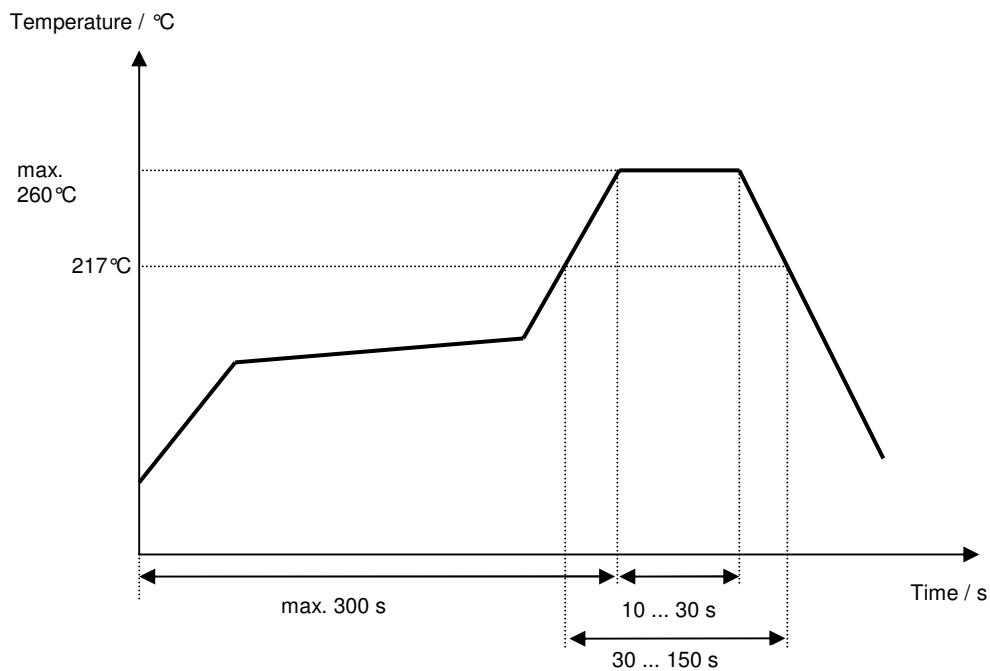
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Air reflow temperature conditions**Conditions**

Average ramp-up rate (30°C to 217°C)
> 100°C
> 150°C
> 217°C
Peak temperature
Time within 5°C of actual peak temperature
Cool-down rate (Peak to 50°C)
Time from 30°C to Peak temperature

Exposure

less than 3°C/second
between 300 and 600 seconds
between 240 and 500 seconds
between 30 and 150 seconds
max. 260°C
between 10 and 30 seconds
less than 6°C/second
no greater than 300 seconds

Chip-mount air reflow profile

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History

Version	Reason of Changes	Name	Date
1.1	- Generation of specification according to customer requirement specification.	Dr. Wall	03.05.2001
1.2	- Add termination impedances. - Add typical data.	Dr. Wall	23.05.2002
1.3	- Changed reflow profile, changed marking	Martens	02.02.2005
2.0	- Position of filter in tape defined - Updated header and footer	Raura	26.07.2011