

Vectron International**Filter specification****TFS 850B****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 850 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} 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 in PB	a_e	2.0	dB	max.	3.0	dB
Nominal frequency	f_N	-			850.0	MHz
Passband	PB	-		f_N	± 8.0	MHz
Bandwidth	BW					
3 dB		27	MHz	min.	15	MHz
40 dB		45	MHz	max.	55	MHz
Absolute attenuation	a_{abs}					
0.3 MHz ... 820 MHz		44	dB	min.	40	dB
880 MHz ... 1500 MHz		48	dB	min.	40	dB
Group delay ripple within PB		38	ns	max.	60	ns
Return loss within PB		11.5	dB	min.	10	dB
Operating temperature range	OTR	-			- 45 °C ... + 85 °C	
Storage temperature range		-			- 45 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f *	-42	ppm/K			

*) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_0 (\text{MHz})$.

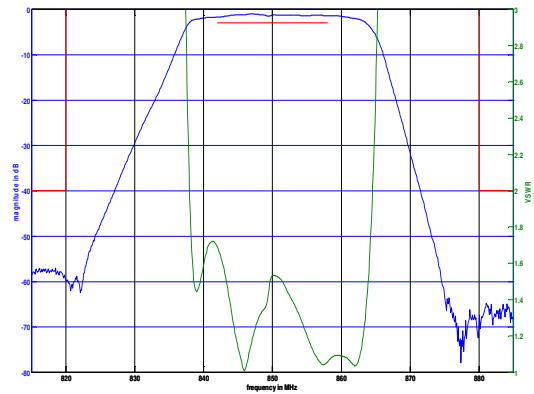
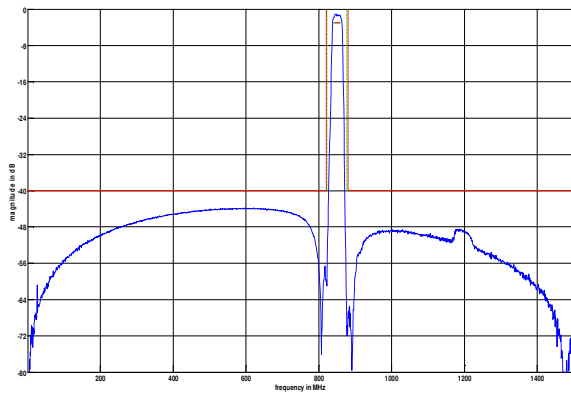
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Checked / Approved:

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

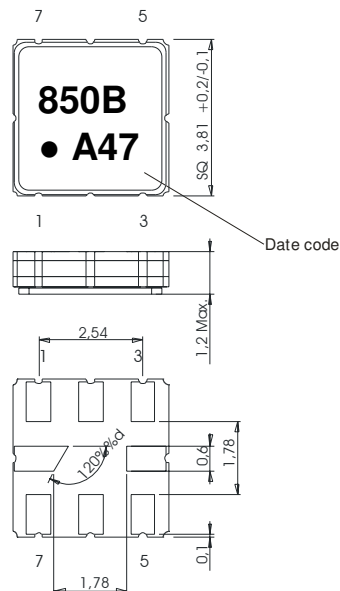
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Filter characteristic



Construction and pin connection

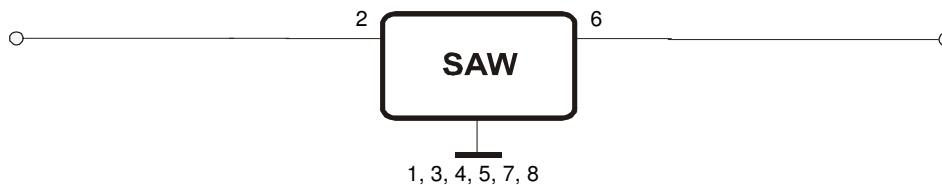
(All dimensions in mm)



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

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

50 Ω Test circuit



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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 5 g 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;

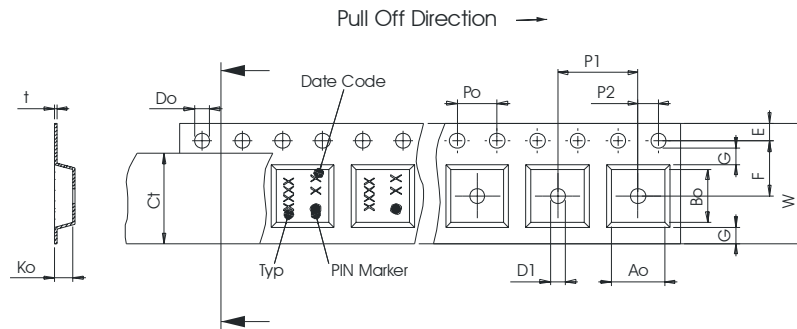
Packing

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 peer 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

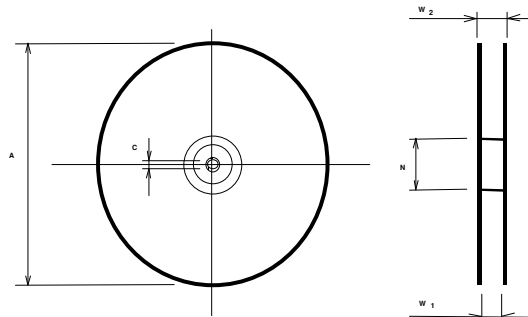
Tape (all dimensions in mm)

- W : 12.00 ± 0.3
- Po : 4.00 ± 0.1
- Do : 1.50 +0.1/-0
- E : 1.75 ± 0.1
- F : 5.50 ± 0.05
- G(min) : 0.75
- P2 : 2.00 ± 0.05
- P1 : 8.00 ± 0.1
- D1(min) : 1.50
- Ao : 4.30 ± 0.1
- Bo : 4.30 ± 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 +0.5/-0.2



The minimum bending radius is 45 mm.

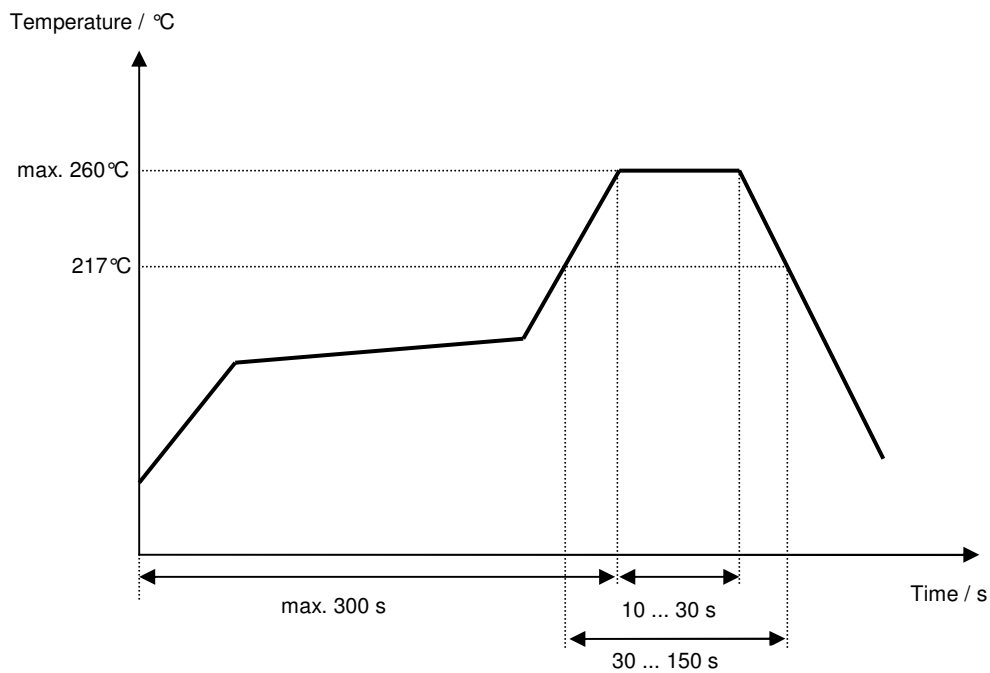
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Air reflow temperature conditions

Conditions	Exposure
Average ramp-up rate (30°C to 217°C)	less than 3°C/second
> 100°C	between 300 and 600 seconds
> 150°C	between 240 and 500 seconds
> 217°C	between 30 and 150 seconds
Peak temperature	max. 260°C
Time within 5°C of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50°C)	less than 6°C/second
Time from 30°C to Peak temperature	no greater than 300 seconds

Chip-mount air reflow profile



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History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	S.Springfeldt	01.09.2010
1.1	-Generation of filter specification	S.Springfeldt	19.11.2010