

Vectron International**Filter specification****TFS 787****1/5****Measurement condition**

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

Characteristics

Remark:

The reference level for the relative attenuation a_{rel} of the TFS 787 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 787,5 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	1,8	max.	2,5	dB
Nominal frequency	f_N	-		787,5	MHz
Passband	PB	-	$f_N \pm$	10,5	MHz
Pass band ripple	p-p	0,64	max.	1,5	dB
Relative attenuation	a_{rel}				
0,3 MHz ... 746 MHz		42	min.	30	dB
746 MHz ... 756 MHz		36	min.	32	dB
756 MHz ... 763 MHz		27	min.	20	dB
763 MHz ... 768 MHz		14	min.	10	dB
860 MHz ... 885 MHz		46	min.	35	dB
885 MHz ... 1200 MHz		42	min.	30	dB
1200 MHz ... 2500 MHz		33	min.	20	dB
2500 MHz ... 6000 MHz		4	min.	1	dB
VSWR within PB		1,74 : 1	min.	2,1 : 1	
Input power level		-	max.	0	dBm
Operating temperature range	OTR	-		- 10 °C ... + 85 °C	
Storage temperature range		-		- 40 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f^*	-41 ppm/K		-	

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

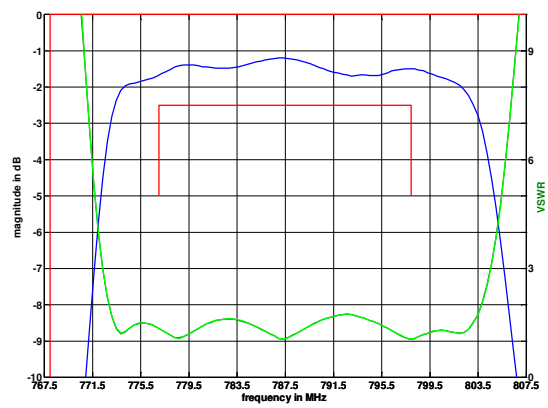
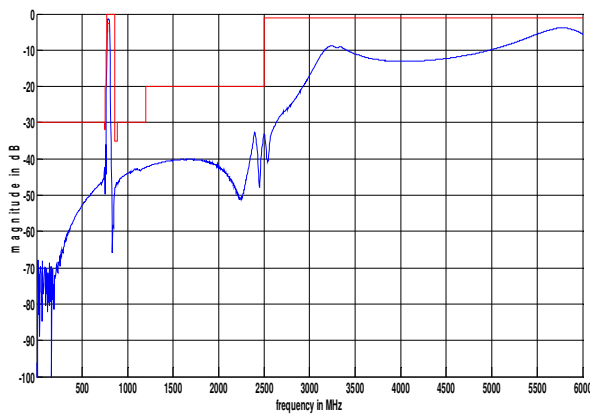
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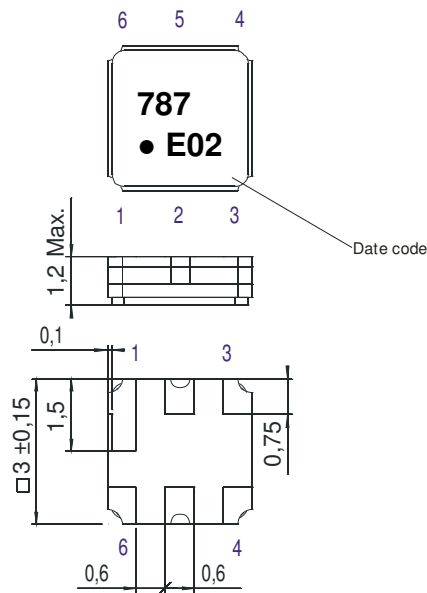
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Filter characteristic



Construction and pin connection

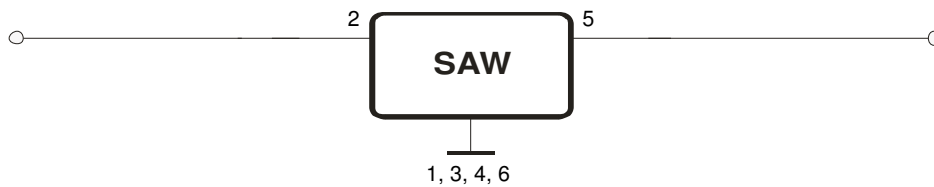
(All dimensions in mm)



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

Date code: Year + week
 E 2014
 F 2015
 G 2016
 ...

50 Ω Test circuit



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Stability characteristics, reliability

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

- 1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
- 2. Vibration: 10 Hz to 500 Hz, 0.35 mm or g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 68 T2 - 6
- 3. Change of temperature: -55 °C to 125°C / 15 min. each / 100 cycles
DIN IEC 68 part 2 – 14 Test N
- 4. Resistance to solder heat (reflow): reflow possible: three times max.;
for temperature conditions, see page 4: "Air reflow temperature conditions"

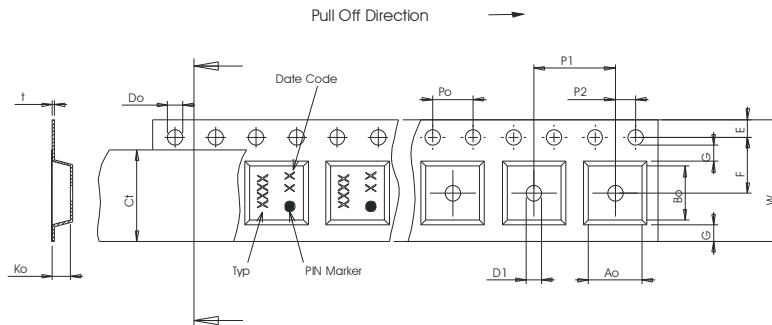
This filter is RoHS compliant (2011/65/EU)

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: 9000
- reel of empty components at start: min. 300 mm
- reel of empty components at start including leader: min. 500 mm
- trailer: min. 300 mm

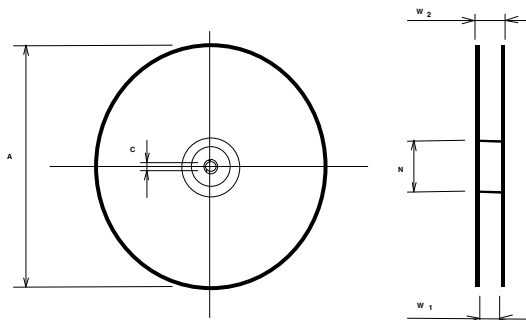
Tape (all dimensions in mm)

- W : 8,00 ± 0,3
- Po : 4,00 ± 0,1
- Do : 1,50 +0,1/-0
- E : 1,75 ± 0,1
- F : 3,50 ± 0,05
- G(min) : 0,75
- P2 : 2,00 ± 0,05
- P1 : 4,00 ± 0,1
- D1(min) : 1,50
- Ao : 3,25 ± 0,1
- Bo : 3,25 ± 0,1
- Ct : 5,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

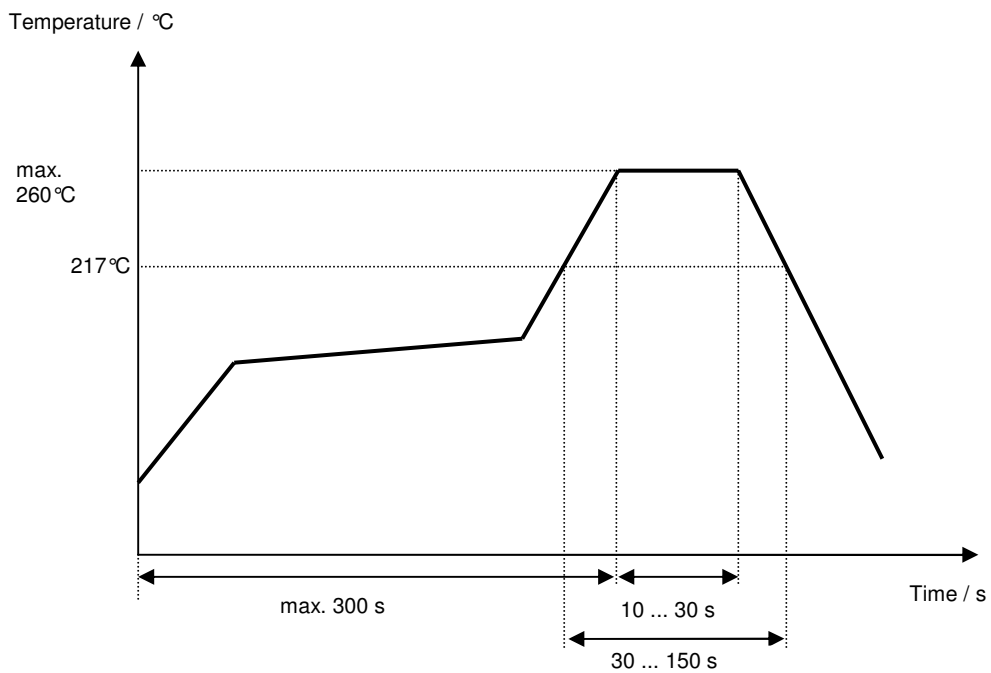
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Air reflow temperature conditions

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	Strehl	18.07.2008
1.1	- Generation of filter specification	S.Springfeldt	28.11.2008
1.2	- maximum input power updated	Kortenbeutel	07.01.2014