

Vectron International

Filter specification

TFS 537

1/5

Measurement condition

Ambient temperature: 23 °C
 Input power level: 0 dBm
 Terminating impedance:
 Input: 150 Ω
 Output: 150 Ω

Characteristics

Remark:

The nominal frequency f_N is fixed at 537.60 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 537 is the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit	
Insertion loss (reference level)		a_e	2.1 dB	4.5 dB	
Nominal frequency		f_N	-	537.60 MHz	
Bandwidth 3 dB		BW	18.5 MHz	min. 18 MHz	
Relative attenuation		a_{rel}			
	67.2 MHz ... f_N - 90.0 MHz		58 dB	min. 50 dB	
f_N -	90.0 MHz ... f_N - 67.2 MHz		51 dB	min. 46 dB	
f_N +	67.2 MHz ... 1000 MHz		54 dB	min. 50 dB	
@	67.2 MHz		61 dB	min. 56 dB	
@	134.4 MHz		64 dB	min. 60 dB	
@	201.6 MHz		64 dB	min. 60 dB	
@	268.8 MHz		65 dB	min. 60 dB	
@	336.0 MHz		62 dB	min. 58 dB	
@	403.2 MHz		61 dB	min. 58 dB	
@	470.4 MHz		56 dB	min. 46 dB	
@	604.8 MHz		56 dB	min. 51 dB	
@	672.0 MHz		60 dB	min. 55 dB	
@	739.2 MHz		58 dB	min. 54 dB	
@	808.4 MHz		54 dB	min. 51 dB	
Input power level			-	max. 0 dBm	
Operating temperature range		OTR	-	-40 °C ... +85 °C	
Storage temperature range			-	-55 °C ... +125 °C	
Temperature coefficient of frequency		TC_f^*	- 73 ppm/K	-	

*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{CAT}(\text{MHz})$. Material: LiNbO3_64° black, so in principle pyrofree.

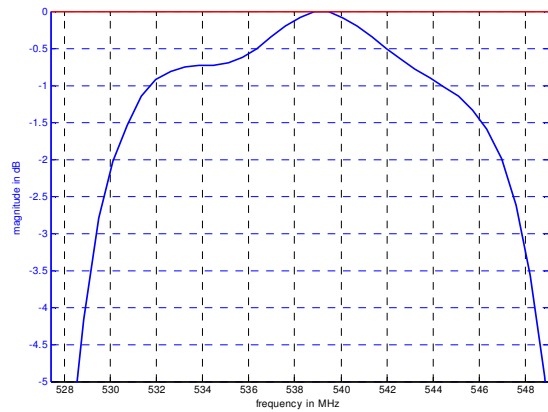
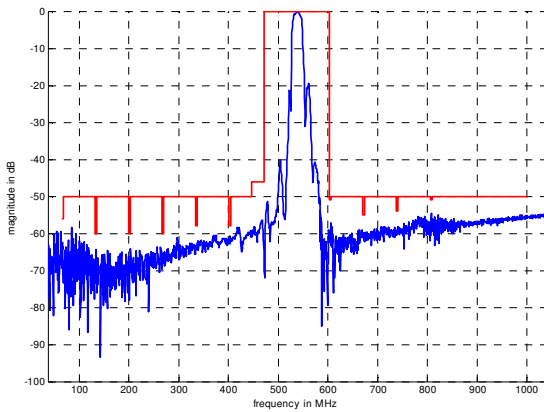
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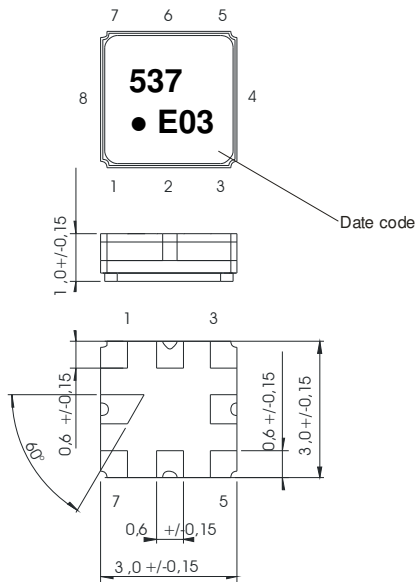
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Filter characteristic



Construction and pin connection

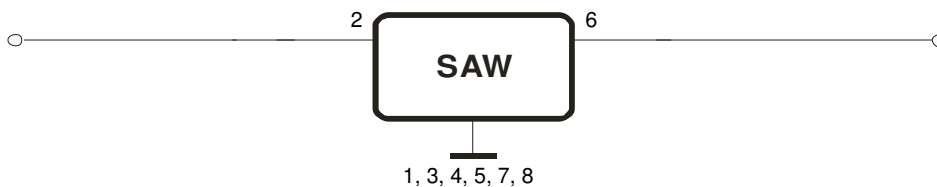
(All dimensions in mm)



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

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

150 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)

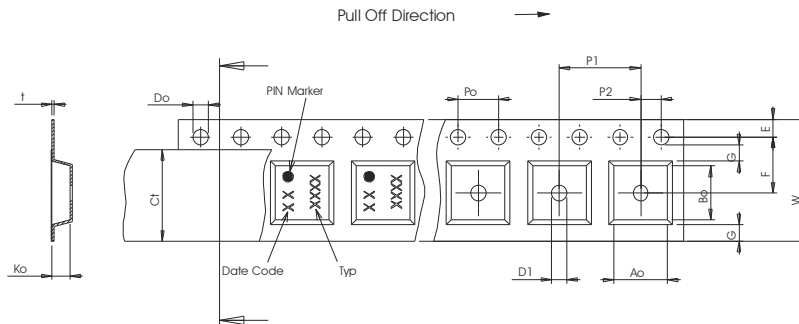
Packing

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:	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

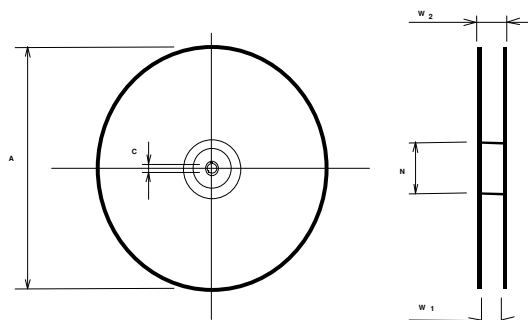
Tape (all dimensions in mm)

- W : 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 : 5,3 ± 0,1



Reel (all dimensions in mm)

- A : 180
- W1 : 8,4 +1,5/-0
- W2(max) : 14,4
- N(min) : 60
- C : 13,0 ± 0,2



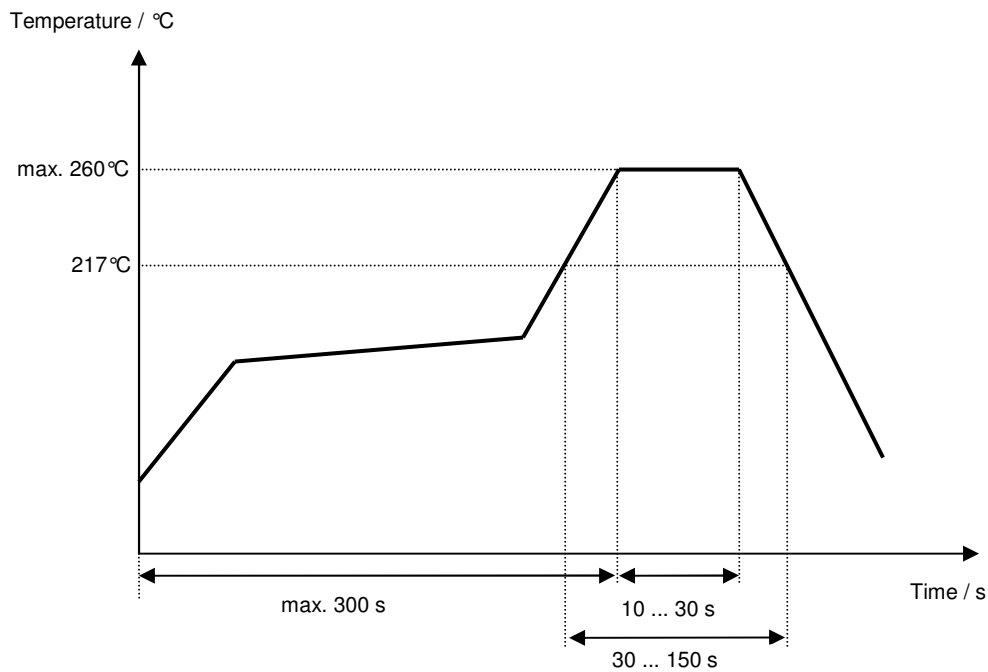
The minimum bending radius is 45 mm.

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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	13.06.2006
1.1	Change attenuation, add typical values Add filter characteristic, generation of filter specification	Channaa	19.07.2006
2.0	Change pull off direction from reel	Schönbein	11.05.2012
2.1	Remark on pyrofree material added to data table	Schönbein	25.04.2012
2.2	Maximum input power updated	Kortenbeutel	16.01.2014