Measurement condition

Ambient temperature:	85	℃
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω

Characteristics

Remark:
The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e. The centre frequency f_C is the frequency of the minimum of S11. The tolerance for the centre frequency does not include a frequency shift due to the temperature coefficient of frequency TC_f .

D a t a		**typ. value**		**tolerance / limit**		
Insertion loss (reference level)	$a_e = a_{min}$	-		max.	2,5	dB
Centre frequency (minimum of S11)	f_C	434.6	MHz		± 12.5	kHz
Quality factor	Unloaded Q	8000			-	
Parallel capacitance	C_0	2.6	pF *		-	
Motional resistance	R_1	25	Ω *		-	
Motional inductance	L_1	90	µH *		-	
Motional capacitance	C_1	1.5	fF *		-	
Input power level		-		max.	0	dBm
Operating temperature		-			85℃	
Operable temperature range	OTR1	-			- 40℃ ... + 125℃	
	OTR2	-			- 40℃ ... + 180℃	
	OTR3	-			- 40℃ ... + 220℃	
Storage temperature range		-			- 40℃ ... + 120℃	
Temperature coefficient of frequency	TC_f **	+ 16.2	ppm/K			
Temperature error due to aging * **						
within OTR1		0.29	K	max.	- 2 K … 2 K	
within OTR2		2.33	K	max.	- 2 K … 5 K	
within OTR3		4.33	K	max.	- 2 K … 8 K	

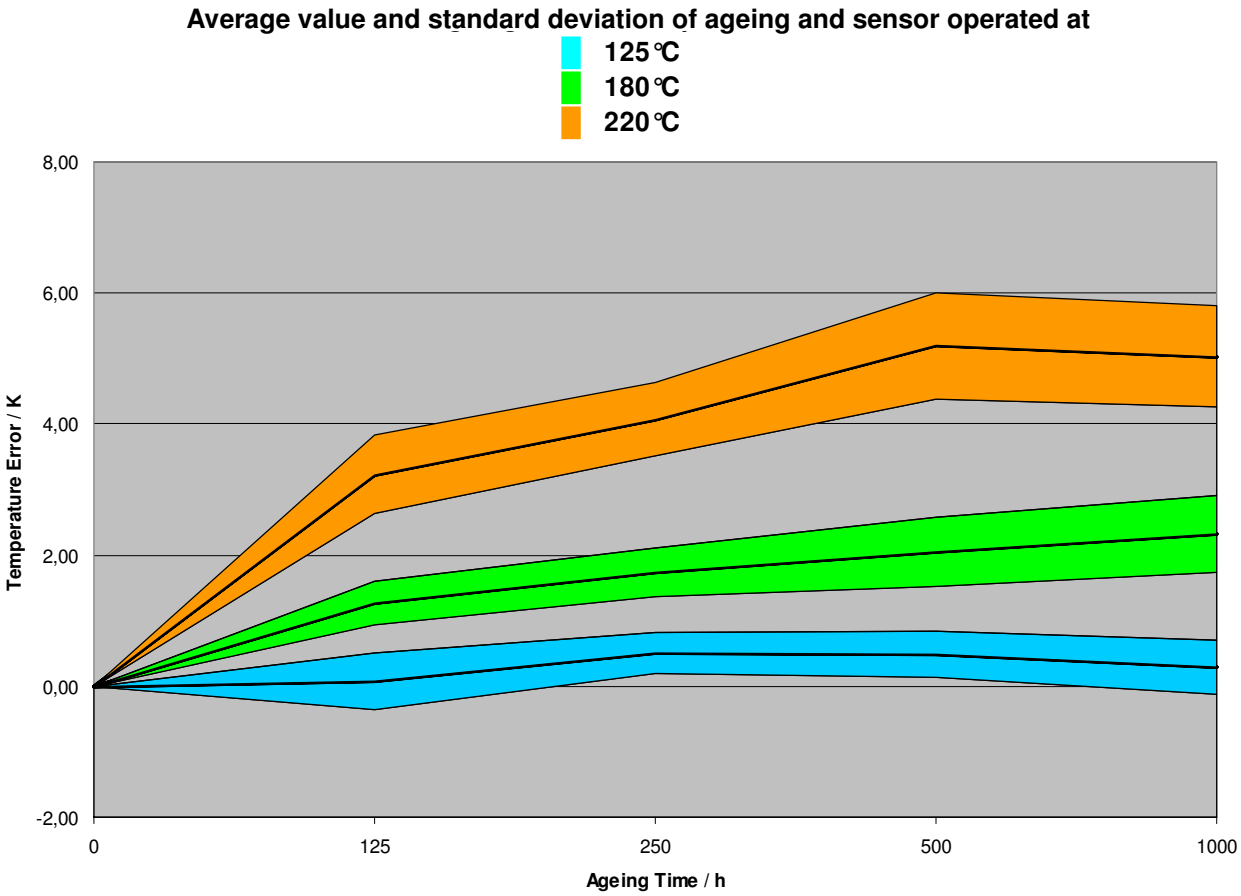
*) The equivalent circuit model is for reference only.
**) $\Delta f(Hz) = TC_f(ppm/K) \times (T_0-T) \times f_{CAT}(MHz)$.
***) 1000 hours cumulative at maximum temperature

Generated:

Checked / Approved:

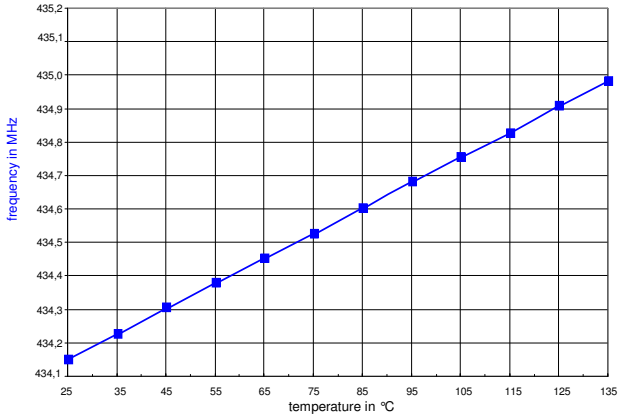
Vectron International GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@vectron.com

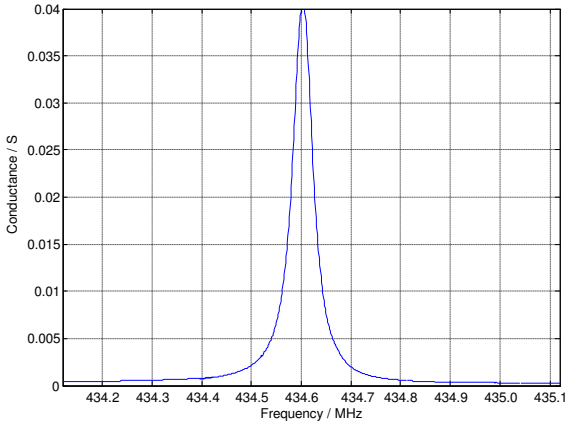
Typical ageing error of sensor signal for operation in extended temperature range



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

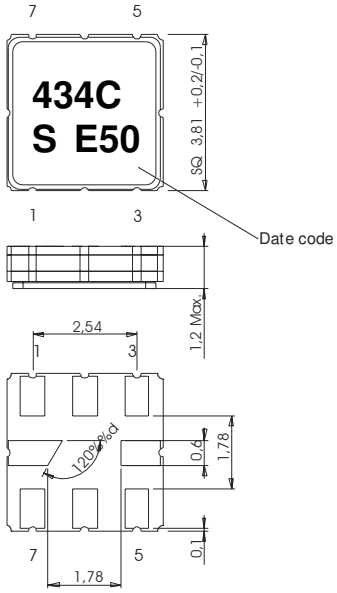
Temperatur sensor characteristic





Construction and pin connection

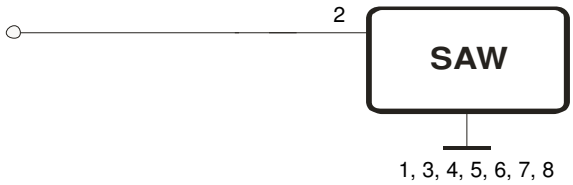
(All dimensions in mm)



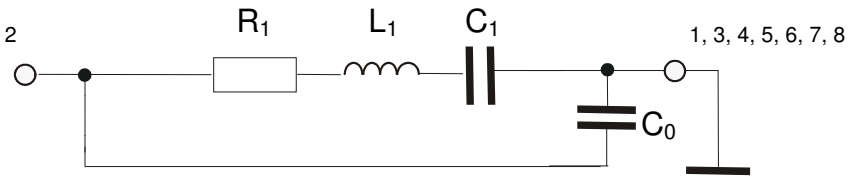
1	Ground
2	Input
3	Ground
4	Ground
5	Ground
6	Ground
7	Ground
8	Ground

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

50 Ohm Test circuit



Equivalent circuit



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

Stability characteristics, reliability

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

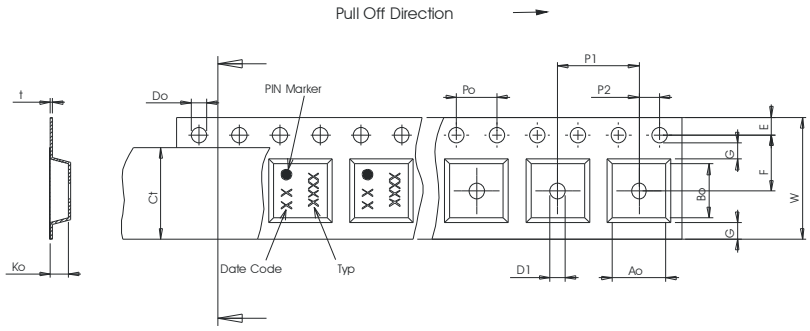
1. Shock:	500g, 1 ms, half sine wave, 3 shocks each plane; DIN IEC 68 T2 - 27
2. Vibration:	10 Hz to 500 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plan, 3 plans; DIN IEC 68 T2 - 6
3. Change of temperature:	-55 °C to 125°C / 15 min. each / 100 cycles DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow):	reflow possible: three times max.; for temperature conditions refer to the attached "Air reflow temperature conditions" on page 5;

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

Packing

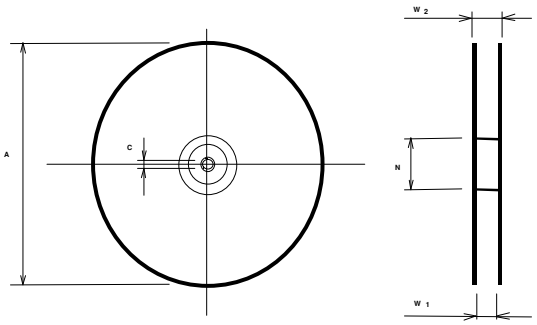
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

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	: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 or 180	
W1	:12.4	+2/-0
W2(max)	:18.4	
N(min)	: 50	
C	:13.0	+0.5/-0,2

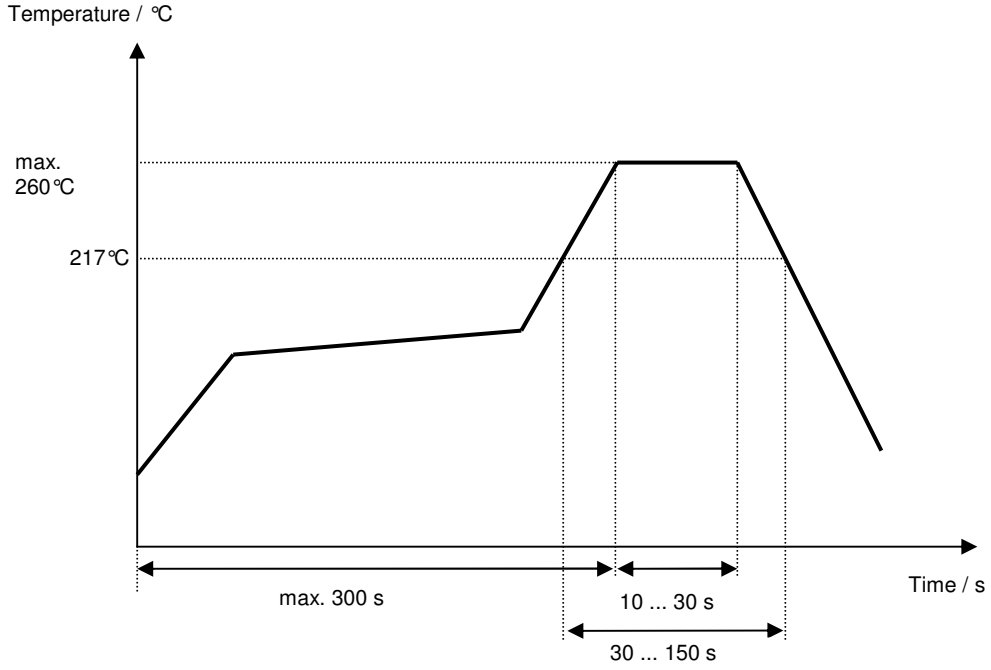
The minimum bending radius is 45 mm.

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

Air reflow temperature conditions

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

Chip-mount air reflow profile



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

History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	10.12.2007
1.1	- Introduce temperature error caused by aging in data table - Changed from development specification to temperature sensor specification - Add typical values for motional parameters	Raura	14.12.2009
2.0	- Changed f_c tolerance/limit in data table - Updated stability characteristics, reliability section - Changed pin marker direction in packing tape & reel section - Changed punctuation marks from comma to period	Raura	11.12.2014

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