

VI TELEFILTER

Resonator Specification

TFR 434C

1/5

Measurement condition

Ambient temperature: 25 °C
 Input power level: 0 dBm
 Terminating impedance: *
 Input: 50 Ω || 0 pF
 Output: 50 Ω || 0 pF

Characteristics

Remark:

The minimum of the attenuation a_{min} is defined as the insertion loss a_e . The centre frequency f_c is the measured frequency at the minimum insertion loss point. The frequency shift of the resonator in the operating temperature range is not included in the production tolerance scheme.

D a t a		typ. value	tolerance / limit
Insertion loss (reference level)	$a_e = a_{min}$	1,6 dB	max. 3,0 dB
Resonant frequency at ambient temperature	f_c	-	434,74 ± 0,05 MHz
Quality factor	Q		
Unloaded		9900	min. 8000
Parallel capacitance	C_0	3,2 pF	-
Motional resistance *	R_m	28 Ω	-
Motional inductance *	L_m	112 μH	-
Motional capacitance *	C_m	1,2 fF	-
Operating temperature range	OTR	-	+20 °C ... + 150 °C
Storage temperature range		-	-30 °C ... + 150 °C
Turnover temperature	T_0	-70 °C	
Temperature coefficient of frequency	TC_f **	-0,036 ppm/K ²	

*) The equivalent circuit model is for reference only.

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

Generated:

Checked / Approved:

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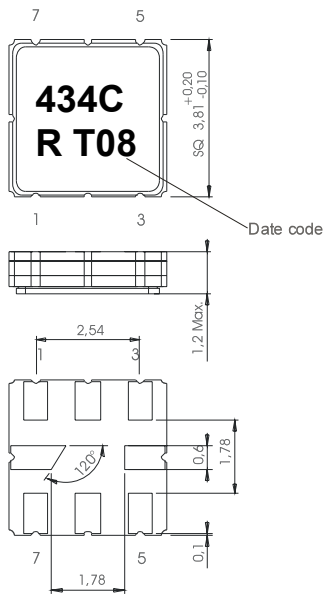
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Construction and pin connection

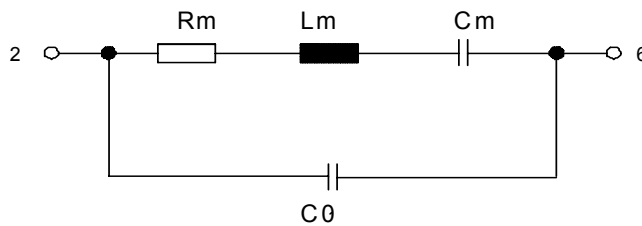
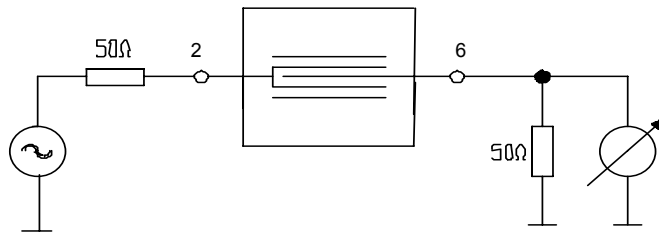
(All dimensions in mm)



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

Date code: Year + week
 T 2005
 U 2006
 V 2007
 ...

50 Ω test circuit and equivalent circuit



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Stability characteristics

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 / 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;

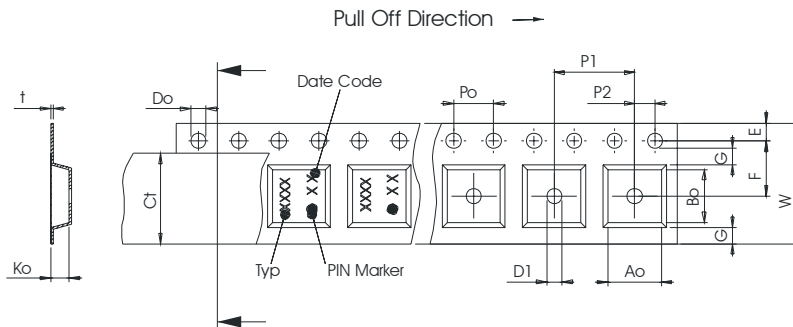
Packing

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

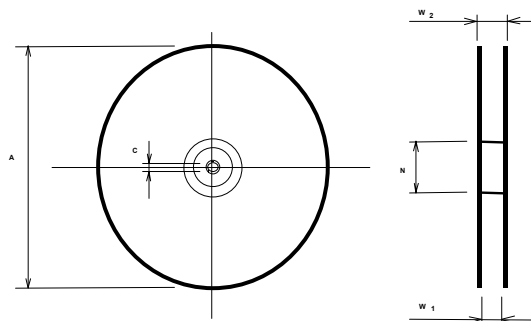
Tape (all dimensions in mm)

- 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.

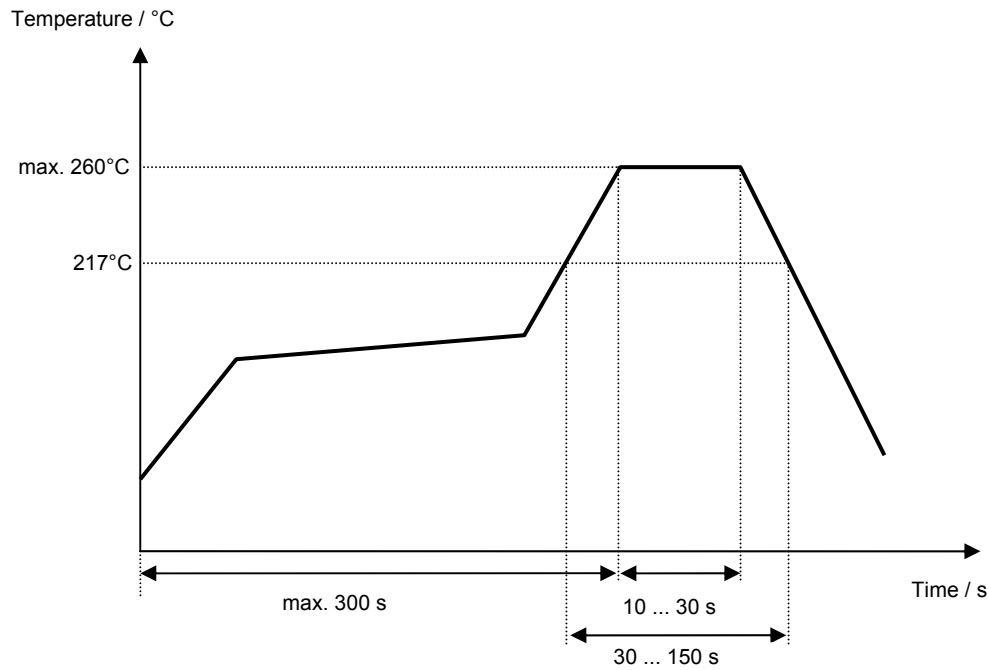
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Air reflow temperature conditions

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 specification according to customer requirement	Dr. Wall	07.03.2003
1.1	- Generation of resonator specification; added typical values - Corrected stability characteristics - Corrected air reflow temperature conditions	Martens	15.02.2005