

VI TELEFILTER

SAW Resonator Specification

TFR 622A

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_R is the measured frequency at the minimum insertion loss point. The frequency shift of the filter 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)	$a_e = a_{min}$	1,5 dB	max. 3 dB
Centre frequency	f_R	622,338	± 0,075 MHz
Quality factor	Unloaded Q	7700	min. 7000
Parallel capacitance	C_0^*	2,16 pF	-
Motional resistance	R_m^*	21 Ω	-
Motional inductance	L_m^*	47,7 μH	-
Motional capacitance	C_m^*	1,37 fF	-
Operating temperature range	OTR	-	-30 °C ... + 85 °C
Storage temperature range		-	-40 °C ... + 90 °C
Turnover temperature	T_0	32 °C	-
Temperature coefficient of frequency	TC_f^{**}	-0,044 ppm/K ²	-

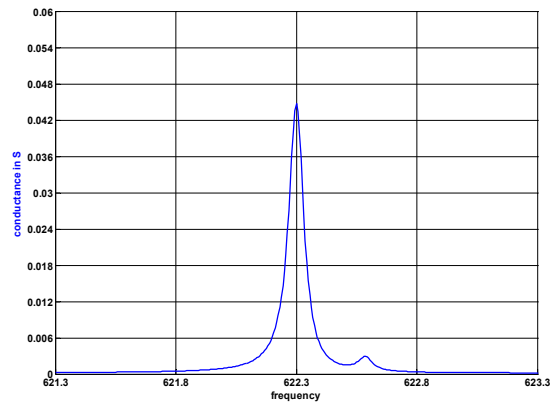
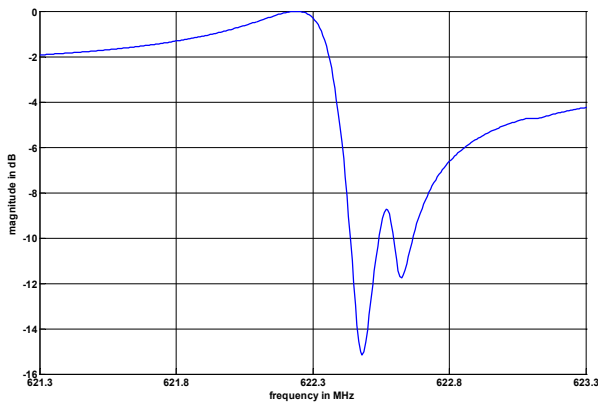
*) The equivalent circuit model is for reference only.

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

Generated: _____

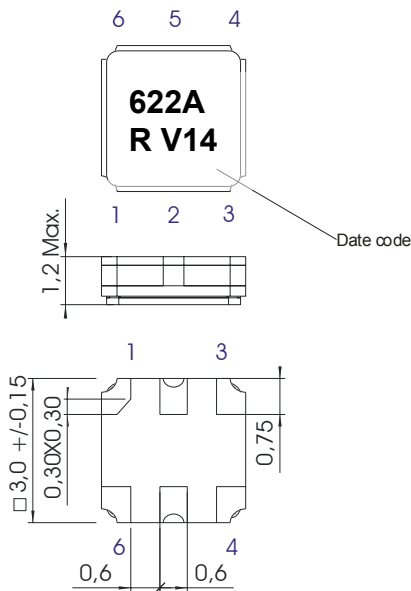
Checked / Approved: _____

Filter characteristic



Construction and pin connection

(All dimensions in mm)

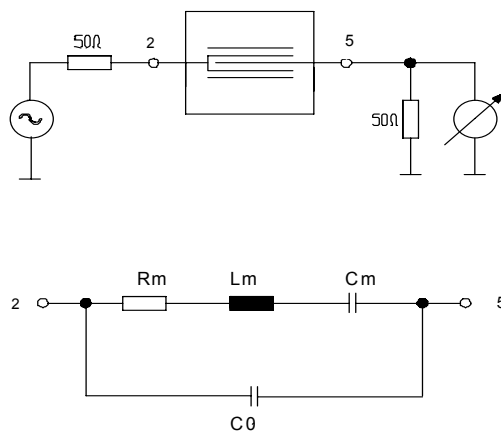


- 1 Ground
- 2 Input
- 3 Ground
- 4 Ground
- 5 Input RF Return* / Output**
- 6 Ground

* For oneport operation
 ** For twoport operation

Date code: Year + week
 V 2007
 W 2008
 X 2009
 ...

50 Ω test circuit and equivalent circuit



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Stability characteristics, reliability

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

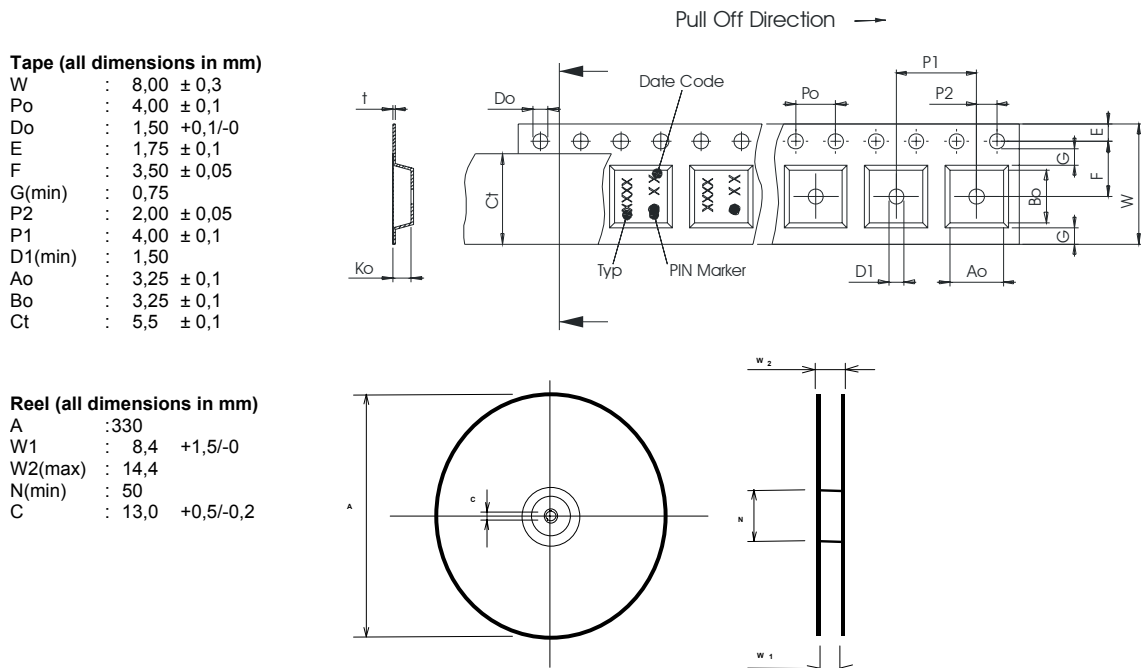
1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: three times max.;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

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:	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



The minimum bending radius is 45 mm.

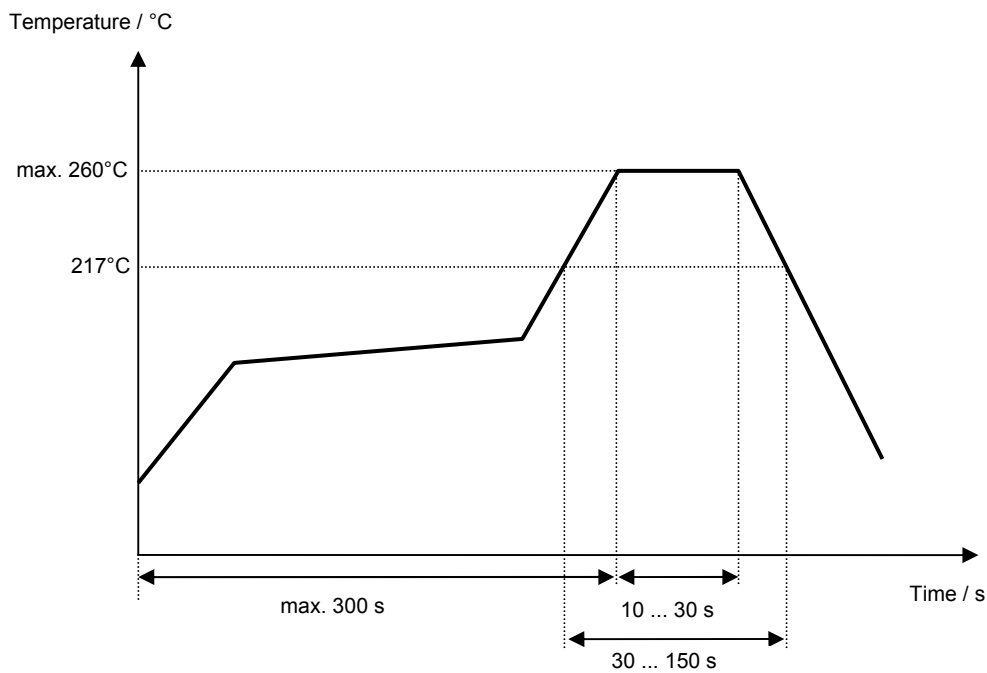
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Air reflow temperature conditions

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



History

Version	Reason of changes	Name	Date
1.0	- Generate development specification	Dr. Wall	07.12.2004
1.1	- Add typical values, change turnover temperature, reduce quality factor limit	Martens	24.08.2005
1.2	- Change frequency from 622,08 MHz to 622,301 MHz	Dr. Wall	10.07.2006
1.3	- Adjust typical values - Add resonator characteristic - Correct centre frequency to 622,338 MHz - Add RoHs information - Define pinning more precisely	Dr. Wall	30.03.2007