

VI TELEFILTER

Resonator Specification

TFR 433H

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)	$a_e = a_{min}$	1,0 dB	max. 1,8 dB
Resonant frequency at ambient temperature	f_c	-	433,42 ± 0,075 MHz
Phase	φ	-	± 20 °
Quality factor Unloaded	Q	11500	-
Parallel capacitance	C_0	2,3 pF	-
Motional resistance *	R_m	12,6 Ω	-
Motional inductance *	L_m	55,5 μH	-
Motional capacitance *	C_m	2,4 fF	-
Operating temperature range	OTR	-	-10 °C ... + 70 °C
Storage temperature range		-	-30 °C ... +85 °C
Frequency change with temperature between -10 °C...+ 70 °C		95 ppm	

*) The equivalent circuit model is for reference only.

Generated: _____

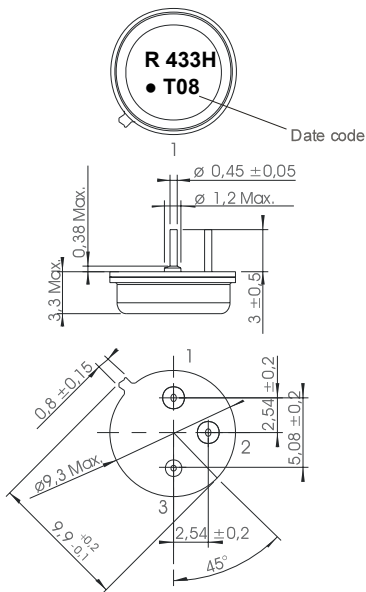
Checked / Approved: _____

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Construction and pin connection

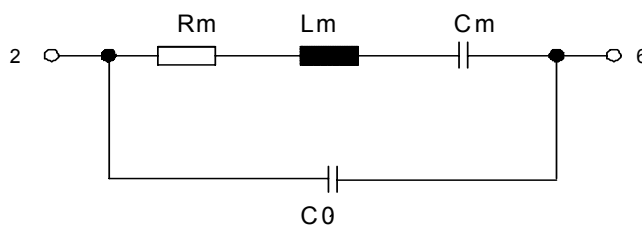
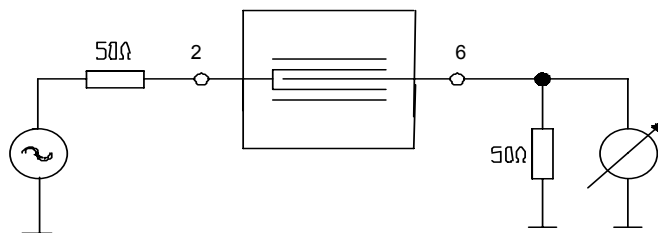
(All dimensions in mm)



- 1 Input
- 2 Output
- 3 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, 18 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5g 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): max. 2 times reflow process;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

Air reflow temperature conditions

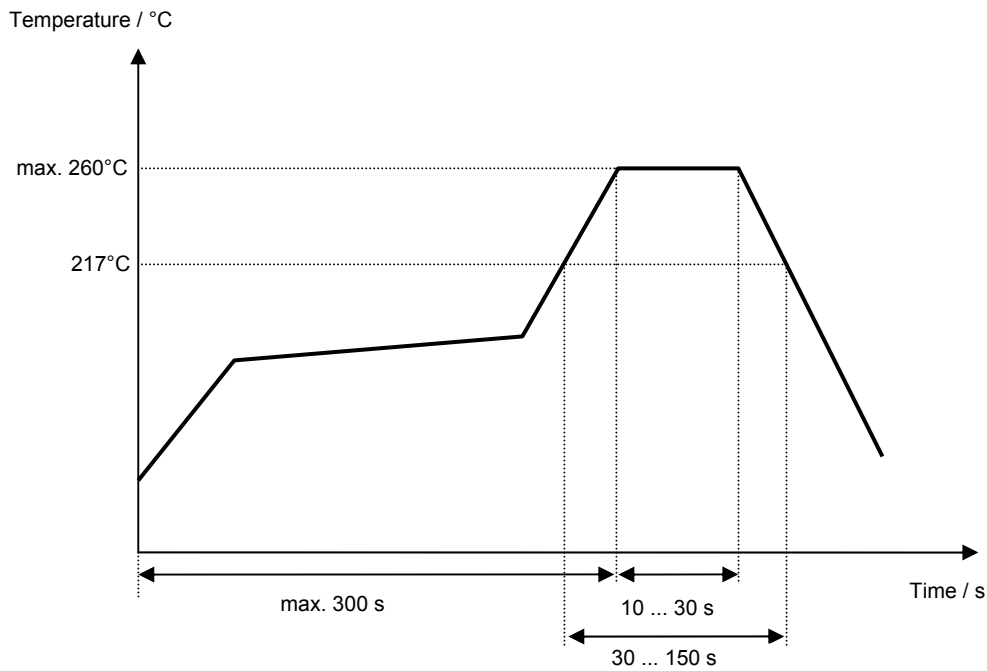
Conditions

Average ramp-up rate (30°C to 217°C)
 > 100°C
 > 150°C
 > 217°C
 Peak temperature
 Time within 5°C of actual peak temperature
 Cool-down rate (Peak to 50°C)
 Time from 30°C to Peak temperature

Exposure

less than 3°C/second
 between 300 and 600 seconds
 between 240 and 500 seconds
 between 30 and 150 seconds
 max. 260°C
 between 10 and 30 seconds
 less than 6°C/second
 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	Pfeiffer	21.11.2001
1.1	- Generation of resonator specification; added typical values - Corrected stability characteristics - Corrected air reflow temperature conditions - Changed remark (TK, filter)	Martens	16.02.2005

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