

VI TELEFILTER**SAW Resonator Specification****TFR 868C 1/5****Measurement condition**

Ambient temperature: 23 °C
 Input power level: 10 dBm
 Terminating impedances :
 for input: 50 Ω || 0 pF
 for output: 50 Ω || 0 pF

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 measured frequency at the minimum insertion loss point.

D a t a		typ. value	tolerance / limit
Insertion loss (Reference level)	$a_e = a_{\min}$	1,4 dB	max. 2,2 dB
Resonant frequency****	f_R	868,30 MHz	± 75 kHz
Parallel capacitance***	C_0	2,6 pF	-
Motional resistance***	R_1	17 Ω	-
Motional inductance***	L_1	24 μH	-
Motional capacitance***	C_1	1,4 fF	-
Unloaded quality factor***	Q_u	7580	-
Operating temperature range		-	- 10°C... + 70 °C
Storage temperature range		-	- 30°C... + 85 °C
Temperature coefficient *	TC	- 0,036 ppm/K ²	
Frequency inversion temperature	T_o	25 °C	
Frequency aging **	$1f_A$	10 ppm/yr	
Phase	φ		-20 + 20 °

**) Frequency aging is the change in f_R with time. Typically aging is greatest first year after manufacture, decreasing in subsequent years.

*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_o)^2 \times f_{T_o}(\text{MHz})$

***) preliminary values

****) at ambient temperature

generated: _____

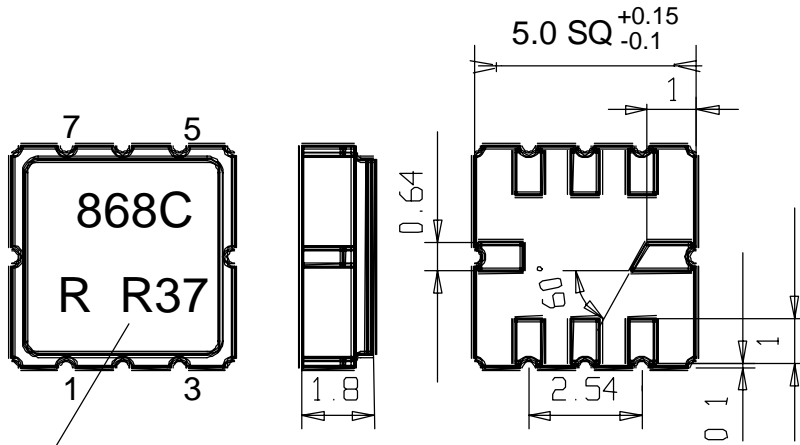
checked / approved: _____

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VI TELEFILTER**SAW Resonator Specification****TFR 868C 2/5****Construction, pin configuration and 50 Ω - matching network**

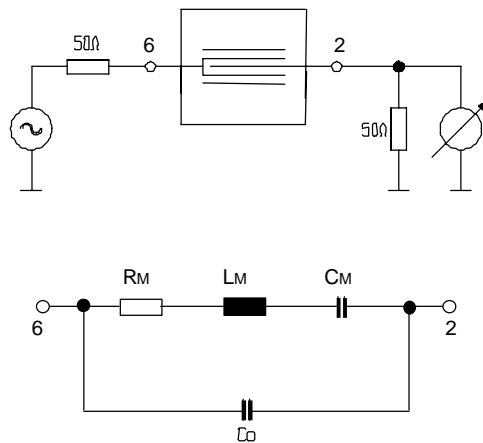
(All dimensions in mm)



Date code

pin 1	ground	pin 5	ground
pin 2	output	pin 6	input
pin 3	ground	pin 7	ground
pin 4	package ground	pin 8	package ground

date code:	year + week
N	2001
P	2002
R	2003
....	

50 Ohm test circuit 1**VI TELEFILTER**

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VI TELEFILTER**SAW Resonator Specification****TFR 868C 3/5****Stability characteristics**

After the following tests the resonator 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): reflow possible: twice max.;;
for temperature conditions, please refer to the attached "Air reflow temperature conditions" on page 4;

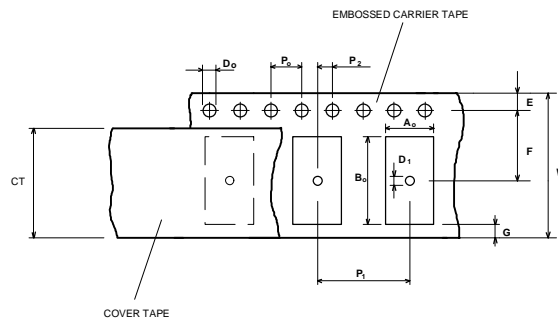
Packing

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;

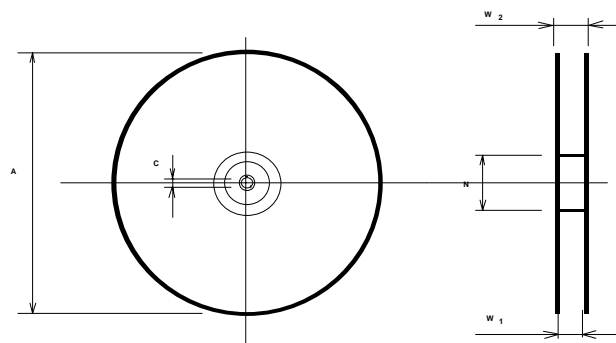
max. pieces of filters per reel:	3000
reel of empty components at start:	min 300 mm
reel of empty components at start including leader:	min 500 mm
trailer	min 300 mm

Tape (all dimensions in mm)

W : 12 ± 0,3
 Po : 4 ± 0,1
 Do : 1,5 + 0,1
 E : 1,75 ± 0,1
 F : 5,5 ± 0,05
 G (min) : 0,75
 P2 : 2 ± 0,05
 P1 : 8 ± 0,10
 D1(min) : 1,5
 Ao : 5,30 ± 0,1
 Bo : 5,30 ± 0,1
 CT : 13,0 ± 0,2

**Reel (all dimensions in mm)**

A : 330
 W1 : 12,4 + 2
 W2 (max) : 18,4
 N (min) : 50
 C : 13 +0,5/-0,2



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. Markings on the filters can be read if the upper side of the carrier tape is regarded with the sprocket holes on its right.

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Air reflow temperature conditions

1st and 2nd air reflow profile

Name:	pre-heating periods	main-heating periods	peak temperature
Temperature:	150 °C - 170 °C	over 200 °C	255 °C ± 5 °C
Time:	60 sec. - 90 sec.	20 sec. - 25 sec.	

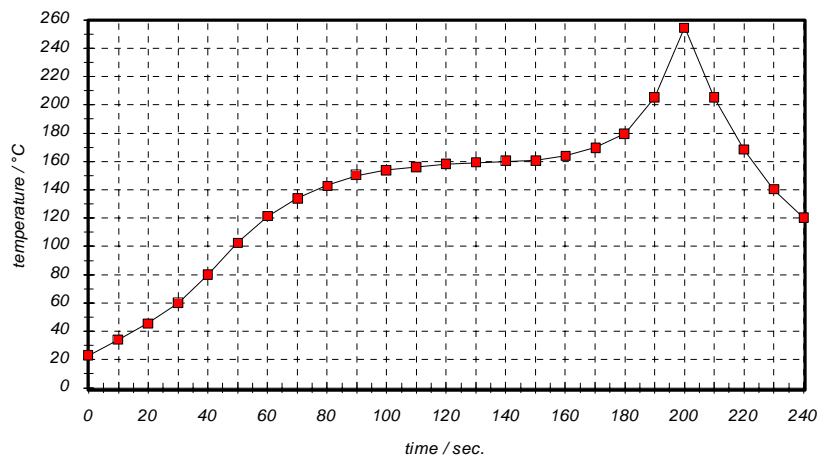
Chip-mount air reflow profile

Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

time / sec.	temperature / °C	time / sec.	temperature / °C
0	23	140	160
10	34	150	161
20	46	160	164
30	60	170	170
40	80	180	180
50	103	190	205
60	121	195	230
70	134	200	255
80	143	205	230
90	150	210	205
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120

VI TELEFILTER**SAW Resonator Specification****TFR 868C 5/5****History**

version	reason of changes	name	date
1.0	generate specification	Konietzko	09.09.2003

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