



SAW Components

SAW resonator

Short range devices

Series/type:	R 770
Ordering code:	B39431R 770U310
Date:	October 09, 2006
Version:	2.0



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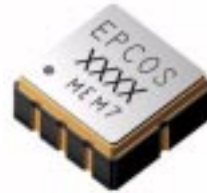
433.81 / 434.06 MHz

Data sheet



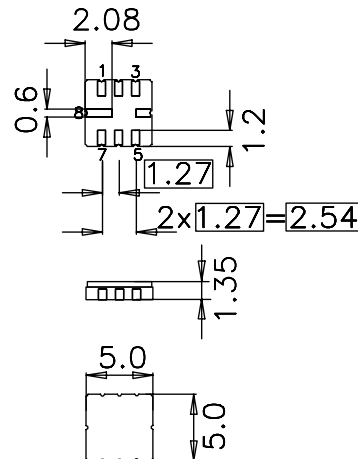
Application

- 1-port resonator (2 Resonators in 1 housing)
- Provides reliable, fundamental mode, quartz frequency stabilization i.e. in transmitters or local oscillators



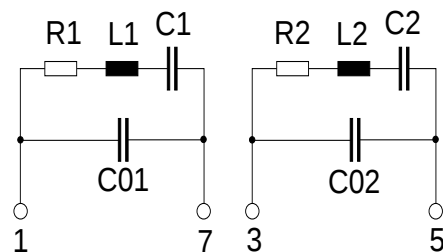
Features

- Package size 5.0 x 5.0 x 1.35 mm³
- Package code QCC8C
- RoHS compatible
- Approximate weight 0.1 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- Lead free soldering compatible with J - STD20C
- Protection layer: Protec
- AEC-Q200 qualified component family
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 Input Reso 1
- 3 Input Reso 2
- 7 Output Reso 1
- 5 Output Reso 2
- 4,8 Ground (case)
- 2,6 float





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Characteristics Resonator 1

Reference temperature: $T_A = 25\text{ °C}$
 Terminating source impedance: $Z_S = 50\text{ }\Omega$
 Terminating load impedance: $Z_L = 50\text{ }\Omega$

		min.	typ.	max.	
Center frequency Resonator 1¹⁾	f_C	433.745	433.810	433.845	MHz
Frequency offset Resonator 2 to Resonator 1	f_{offset}	200.0	250.0	300.0	KHz
Minimum insertion attenuation	α_{min}	—	1.3	1.7	dB
Unloaded quality factor	Q_U	7500	10100	—	
Ageing of f_C		—	—	-50/+50	ppm
Equivalent circuit elements					
Motional capacitance	C_1	—	2.12	—	fF
Motional inductance	L_1	—	63.43	—	μH
Motional resistance	R_1	—	17	23	Ω
Parallel capacitance ²⁾	C_0	—	2.4	—	pF
Temperature coefficient of frequency³⁾	TC_f	—	-0.03	—	ppm/K ²
Turnover temperature	T_0	5	—	35	°C

¹⁾ Center frequency is defined as maximum of the real part of the admittance.

²⁾ If used in two port configuration (pin 1 - input, pin 7 - output) C_0 is reduced by approx. 0.3 pF.

³⁾ Temperature dependence of f_C : $f_C(T_A) = f_C(T_0) (1 + TC_f (T_A - T_0)^2)$



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Characteristics Resonator 2

Reference temperature: $T_A = 25\text{ °C}$
 Terminating source impedance: $Z_S = 50\text{ }\Omega$
 Terminating load impedance: $Z_L = 50\text{ }\Omega$

		min.	typ.	max.	
Center frequency Resonator 2¹⁾	f_C	433.995	434.060	434.095	MHz
Frequency offset Resonator 2 to Resonator 1	f_{offset}	200.0	250.0	300.0	KHz
Minimum insertion attenuation	α_{min}	—	1.3	1.7	dB
Unloaded quality factor	Q_U	7500	10100	—	
Ageing of f_C		—	—	-50/+50	ppm
Equivalent circuit elements					
Motional capacitance	C_1	—	2.14	—	fF
Motional inductance	L_1	—	62.86	—	μH
Motional resistance	R_1	—	17	23	Ω
Parallel capacitance ²⁾	C_0	—	2.4	—	pF
Temperature coefficient of frequency³⁾	TC_f	—	-0.03	—	ppm/K ²
Turnover temperature	T_0	5	—	35	°C

¹⁾ Center frequency is defined as maximum of the real part of the admittance.

²⁾ If used in two port configuration (pin 3 - input, pin 5 - output) C_0 is reduced by approx. 0.3 pF.

³⁾ Temperature dependence of f_C : $f_C(T_A) = f_C(T_0) (1 + TC_f (T_A - T_0)^2)$

Maximum ratings

Operable temperature range	T_A	-45/+120	°C	between any terminals
Storage temperature range	T_{stg}	-45/+120	°C	
DC voltage	V_{DC}	12	V	
Source power	P_S	0	dBm	

Please read *cautions and warnings* and *important notes* at the end of this document.

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**References**

Type	R 770
Ordering code	B39431R 770U310
Marking and package	C61157-A7-A56
Packaging	F61074-V8169-Z000
Date codes	L_1126
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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Please read *cautions and warnings and important notes* at the end of this document.

5 October 09, 2006



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