SAW Components

SAW resonator

Short range devices

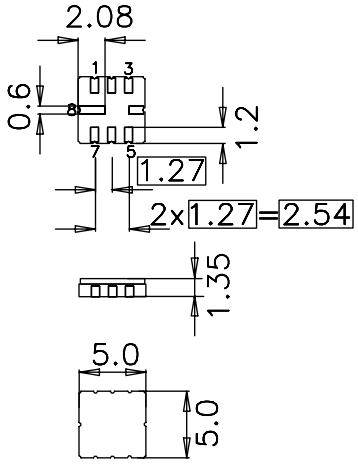
Series/type:	**R 770**
Ordering code:	**B39431R 770U310**
Date:	October 09, 2006
Version:	2.0

Application

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

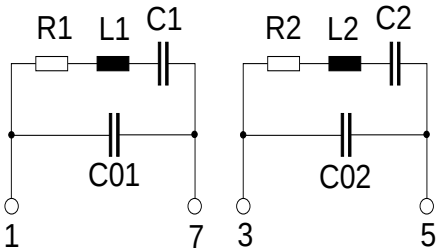
Features

- Package size 5.0 x 5.0 x 1.35 mm^3
- Package code QCC8C
- RoHS compatible
- Approximate weight 0.1 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- Lead free soldering compatible with J - STD20C
- Protection layer: Protec
- AEC-Q200 qualified component family
- **E**lectrostactic **S**ensitive **D**evice (**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



Characteristics Resonator 1

Reference temperature: T_A = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency Resonator 1[1)]	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 frequency[3)]	TC_f	—	–0.03	—	ppm/K²
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: $f_C(T_A) = f_C(T_0)\ (1 + TC_f\ (T_A - T_0)^2)$

Characteristics Resonator 2

Reference temperature: T_A = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency Resonator 2[1)]	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 frequency[3)]	TC_f	—	–0.03	—	ppm/K²
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	

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."

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