

Product Specification	Abundance Enterprise Co.	Original Date	18/11/2014
		PN:	SR433.92-75-QCC2A



Abundance Enterprise Co.
PRODUCT SPECIFICATION

SAW RESONATOR

AEC PART NUMBER / SPEC. NO: SR433.92-75-QCC2A



This model is ROHS/PB-free compliance according to the ROHS directive 2002/95/EC

Production Name	SAW RESONATOR
Frequency	433.92MHz
Model No	QCC2A
Issue Date	10 th August, 2016

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Prepared	Inspection	Approved
<i>Nathan</i>	<i>Andy</i>	<i>Henkie</i>

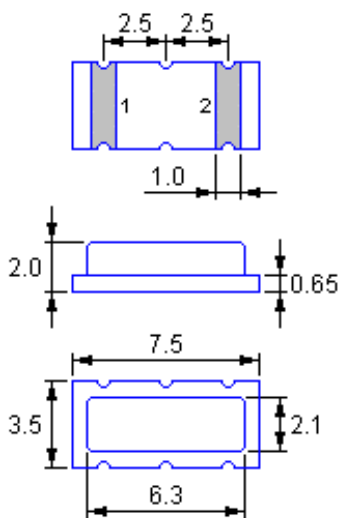
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1. GENERAL PROVISION


The SR433.92 (SMD TYPE QCC2A) is a true one-port, surface-acoustic-wave (**SAW**) resonator in a surface-mount ceramic **QCC2A** case. It provides reliable, fundamental-mode, quartz frequency stabilization of fixed- frequency transmitters operating at 433.92MHz.

2. DIMENSION

Package Dimension (QCC2A)



Pin	Configuration
1	Input / Output
2	Output / Input

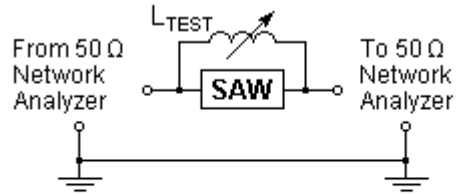
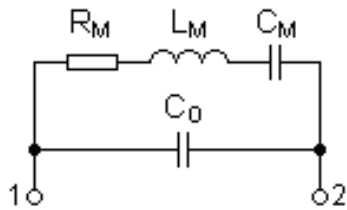
 Abundance Enterprise Co.	NO.	Revised DATE	MODIFY CONTENTS		
	1	2014.11.18	NEW UPDATE		
DIMENTION	mm				
SCALE		PART NAME	SAW RESONATOR		
TOLERANCE		MODEL	QCC2A		
DRAWING NO.	DATE	APPV'D BY	CHECK BY	DRAWN BY	
433.92-QCC2A	2014.11.18	Henkie	Andy	Nathan	

3. MARKING

ASR433.92

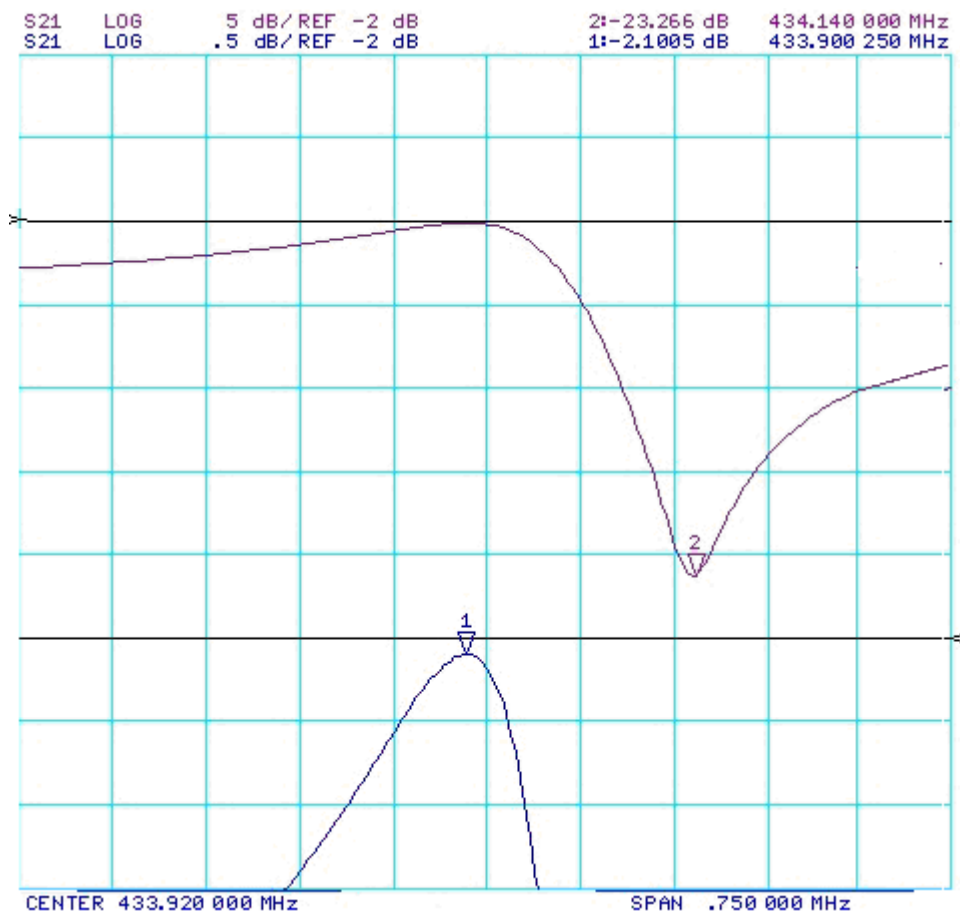
Laser Marking

4. EQUIVALENT LC MODEL AND TEST CIRCUIT

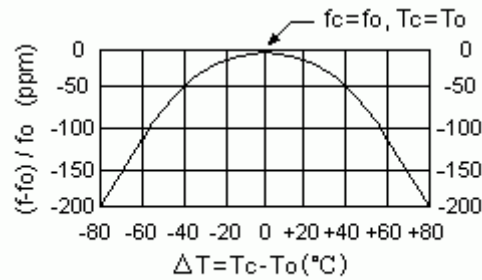


One-port Resonator
 The test circuit inductor, L_{TEST} , is tuned to resonate with the static capacitance, C_0 at f_c .

5. FREQUENCY RESPONSE



6. TEMPERATURE CHARACTERISTICS



The curve shown above accounts for resonator contribution only.

7. ELECTRICAL SPECIFICATION

7-1. Maximum Ratings

Rating	Value	Units
CW RF Power Dissipation	0	dBm
DC Voltage Between Terminals	+12V	VDC
Storage Temperature	-40 to +85	$^{\circ}\text{C}$
Case Temperature	-40 to +85	$^{\circ}\text{C}$

7-2. Electronic Characteristics

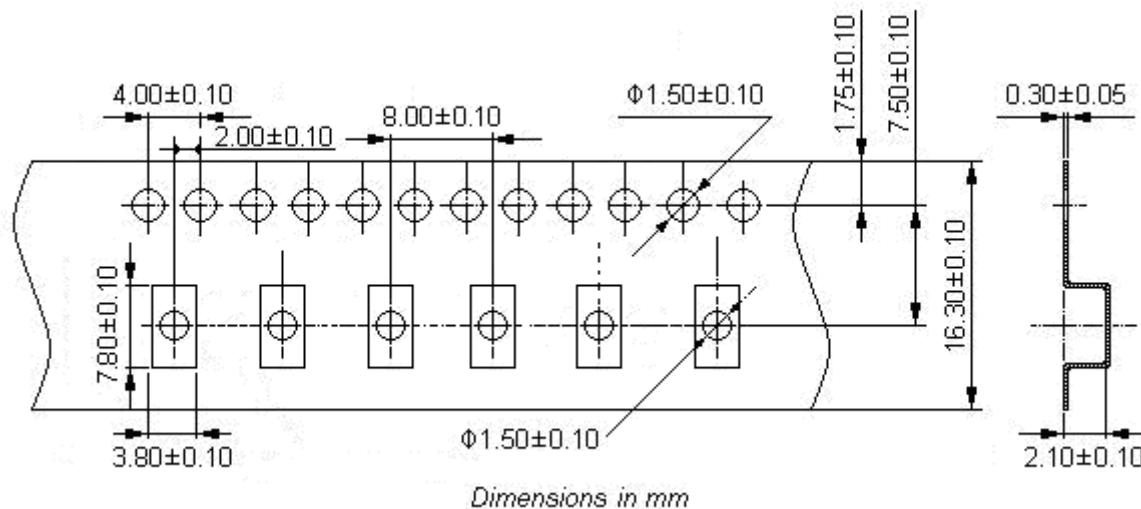
Characteristic		Sym	Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c	433.845		433.995	MHz
	Tolerance from 433.920 MHz	Δf_c		± 75		kHz
Insertion Loss		IL		2.2	2.6	dB
Quality Factor	Unloaded Q	Q_U		7340		
	50 Ω Loaded Q	Q_L		1650		
Temperature Stability	Turnover Temperature	T_o	25		55	$^{\circ}\text{C}$
	Turnover Frequency	f_o		f_c		kHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/ $^{\circ}\text{C}^2$
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤ 10		ppm/yr
DC Insulation Resistance between any Two Pins			1.0			M Ω
RF Equivalent RLC Model	Motional Resistance	R_M		29	35	Ω
	Motional Inductance	L_M		78.1096		μH
	Motional Capacitance	C_M		1.7241		fF
	Pin 1 to Pin 2 Static Capacitance	C_o	1.90	2.15	2.40	pF

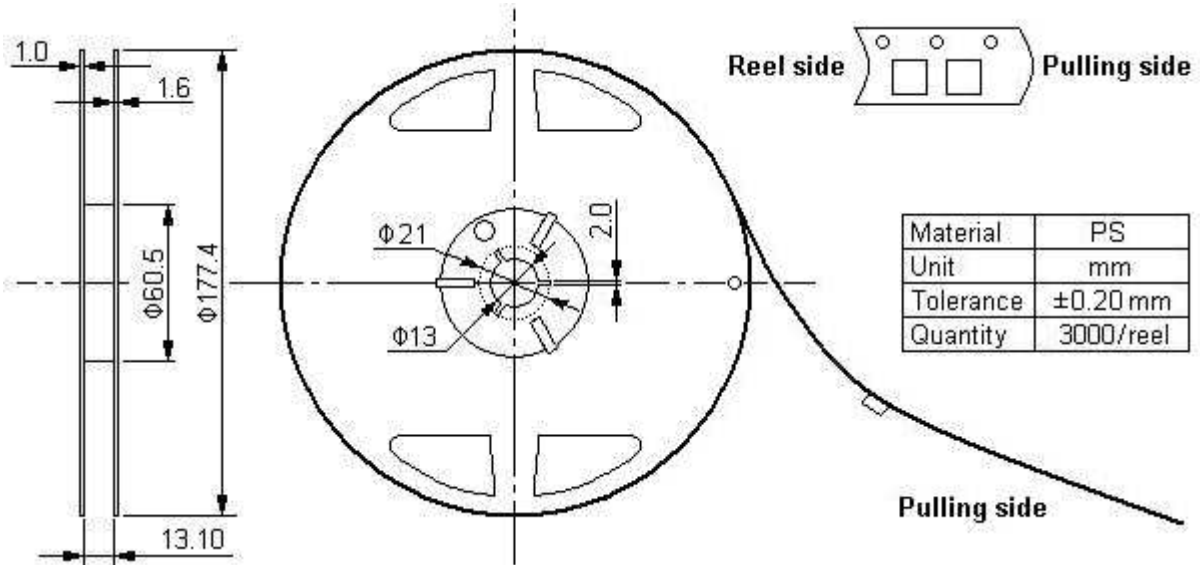
Notes

 **RoHS Compliant**

 **Electrostatic Sensitive Device**

1. Unless noted otherwise, case temperature $T_C = +25^\circ\text{C} \pm 2^\circ\text{C}$.
2. The center frequency, f_C , is measured at the minimum insertion loss point with the resonator in the 50Ω test system.
3. Frequency aging is the change in f_C with time and is specified at $+65^\circ\text{C}$ or less. Aging may exceed the specification for prolonged temperatures above $+65^\circ\text{C}$. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
4. Turnover temperature, T_O , is the temperature of maximum (or turnover) frequency, f_O . The nominal frequency at any case temperature, T_C , may be calculated from: $f = f_O [1 - \text{FTC} (T_O - T_C)^2]$.
5. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C_O is the static capacitance between the two terminals measured at low frequency (10MHz) with a capacitance meter. The measurement includes case parasitic capacitance

8. Packing InformationCarrier TapeReel Dimensions



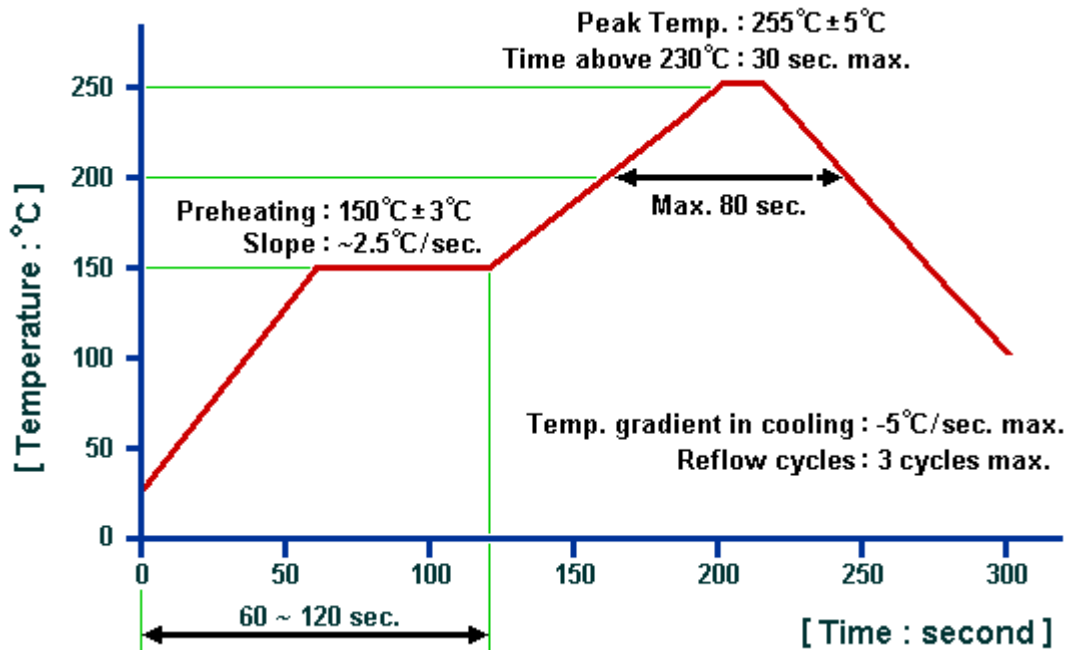
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 RoHS Compliant

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9. Recommended Soldering Profile



10. Remarks

- SAW devices should not be used in any type of fluid such as water, oil, organic solvent, etc.
 - Be certain not to apply voltage exceeding the rated voltage of components.
 - Do not operate outside the recommended operating temperature range of components.
 - Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.
 - Be careful of soldering temperature and duration of components when soldering.
 - Do not place soldering iron on the body of components.
 - Be careful not to subject the terminals or leads of components to excessive force.
 - SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
 - Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.
1. The specifications of this device are subject to change or obsolescence without notice.
 2. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.

Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies. For questions on technology, prices and delivery, please contact our sales offices or email sales@aeccrystal.com