

SAW

Surface Acoustic Wave Components

1. Introduction

What is SAW component?

SAW Resonator utilizes Surface acoustic Wave, and is able to be applied to high frequency circuit where conventional crystal, ceramic resonators cannot offer such high frequency. SAW Resonator oscillates stably with its fundamental mode over frequency range from 100 MHz to around 1 GHz.

SAW Resonator can be applied to many types of high frequency devices including RF remote controls, CATV FSK demodulators and CATV 2nd local oscillators.

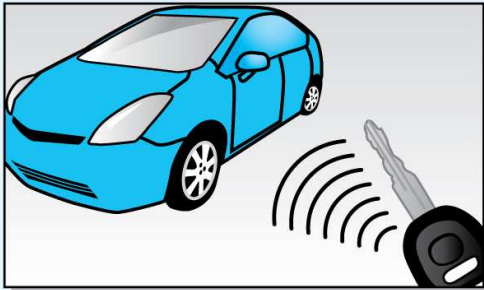
In remote control applications, SAW resonators provide stable frequencies for the RF carrier signal to transmit data over a range of 10 to 300 m or for the local oscillators of receivers.

The front-end filter in the receiver eliminates interference from the incoming RF signal, thus increasing selectivity and sensitivity in short-range devices

Feature

1. SAW resonator with tolerance: $\pm 50\text{KHz}$, $\pm 70\text{KHz}$, $\pm 100\text{KHz}$ and $\pm 150\text{KHz}$ available
2. Narrow band filter with usable bandwidth 0.7MHz.
3. SMD smallest size such as 3X3mm used for portable device
4. Hermetically sealed SMD Cover case and ceramic base to eliminates interference
5. Can operate from temperature range $-40\sim +85\text{C}$.
6. Compliant to EU RoHS Directive (2002/95/EC).
7. Lead-free soldering compatible with J-STD 20C with 260C max temp Reflow soldering.

APPLICATIONS



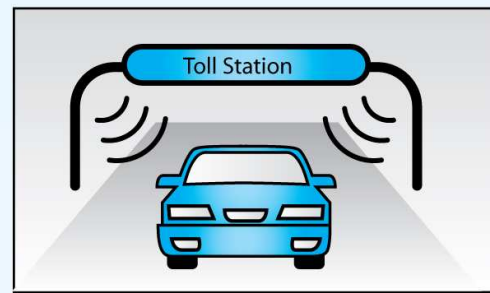
Remote Keyless Entry



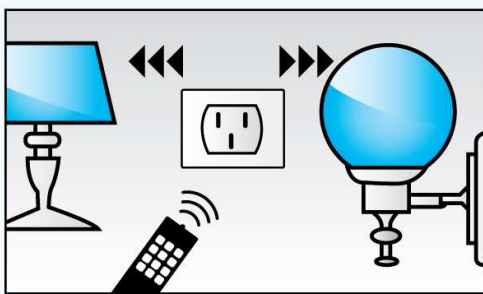
Automotive Telematics/ GPS



Fire Alarm, Burglar Alarm



Automotive Toll Systems



Wireless Switches



Garage-door openers

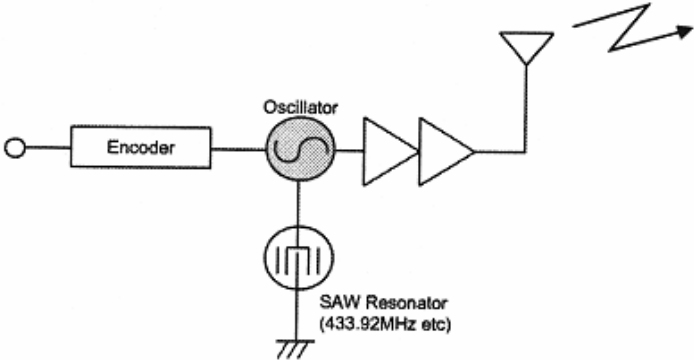
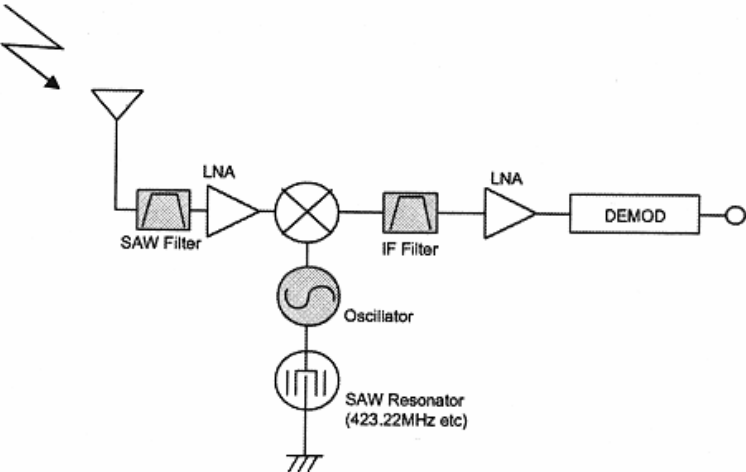
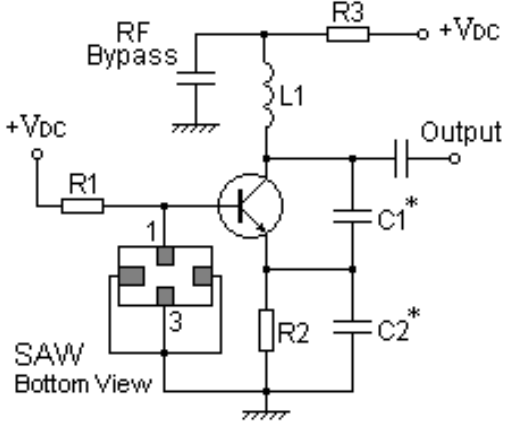


Wireless Audio



Remote Controls

3. Example of Application circuit

	<p>Transmitter in keyless entry system.</p> <p>SAW resonator used</p>
	<p>Receiver in keyless entry system</p> <p>SAW Filter and SAW resonator used.</p>
	<p>Local Oscillator Application</p> <p>SAW resonator used</p>

4. Factory Equipment and production process



Final Measurement Process



Testing Process

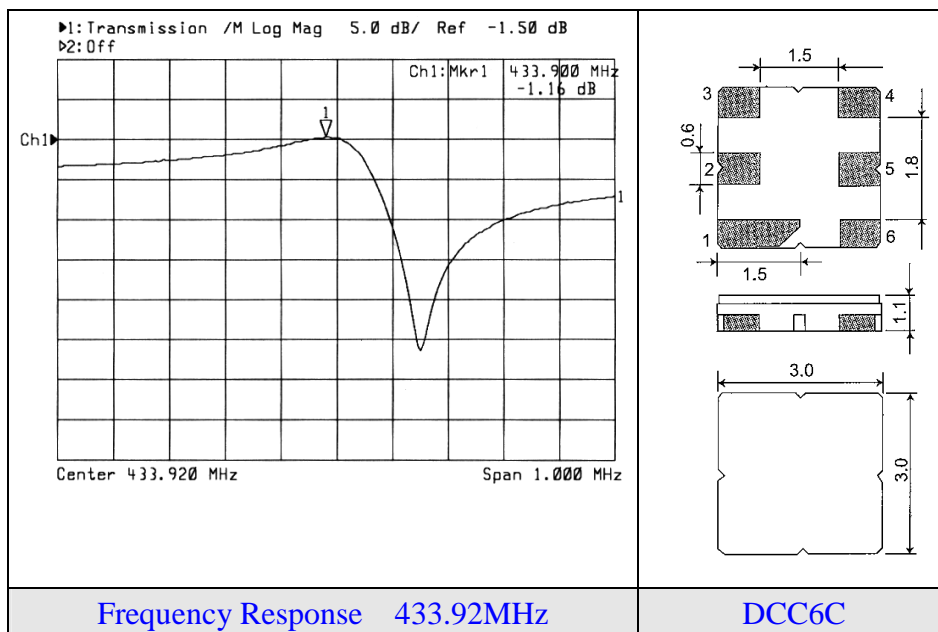


Process: PR coating development
Equipment: 6000XL

5. Resonator

- Centre Frequency Tolerance: $\pm 50\text{MHz}$, $\pm 75\text{Khz}$, $\pm 150\text{Khz}$
- Insertion loss $\leq 2.0\text{db}$
- Substrate: Quartz
- Package: Pin type: TO39, F11

SMD type: QCC8C, DCC6C, QCC8B, QCC4A



Market

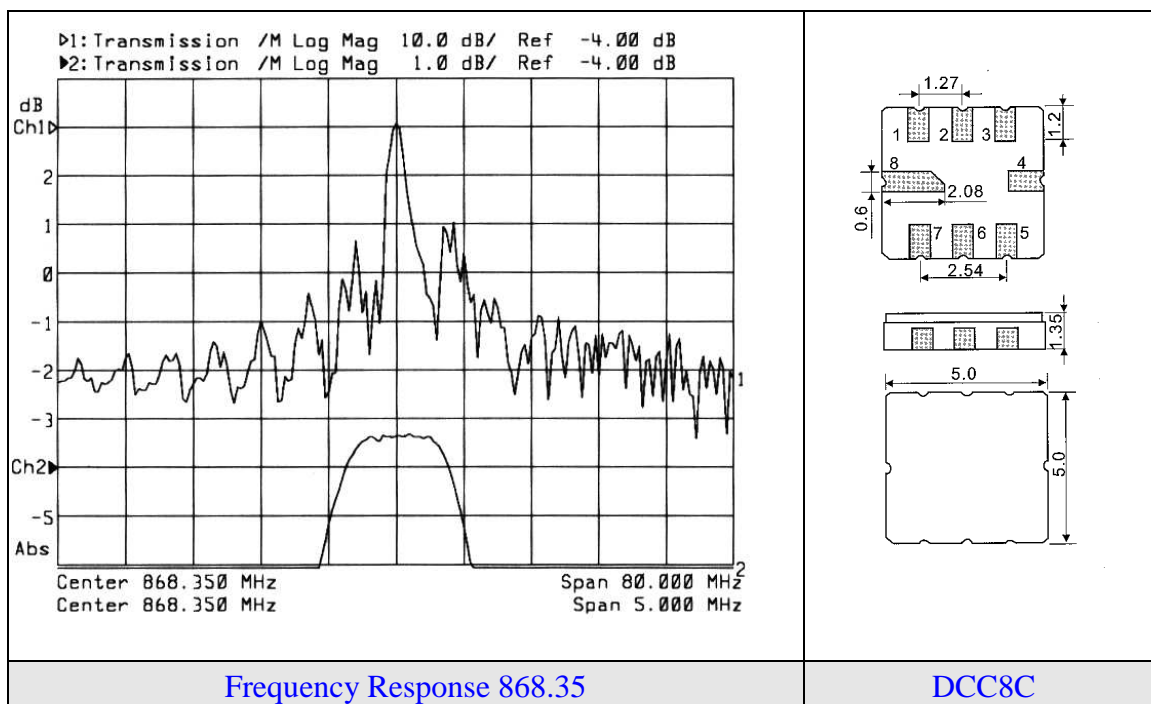
One Port Resonator		
Center Frequency (MHz)	AEC part No	Market
315	SR315	USA
423.22	SR423.22	Europe
433.92	SR4233.92	Europe
433.97	SR433.97	Europe
868.35	SR868.35	Europe

Two Port Resonator		
Center Frequency (MHz)	AEC part No	Market
433.92	SRT433.92	Europe
868.35	SRT868.35	Europe
915.00- $\pm 350\text{KHz}$	SRT915	USA -

6. Filter

- Usable Bandwidth: 0.7~ 5Mhz available
- Substrate: Quartz
- Input/Output Impedance: 50 Ω
- Selectively: Excellent,
- Package: QCC8C, DCC6C

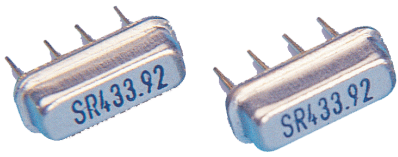
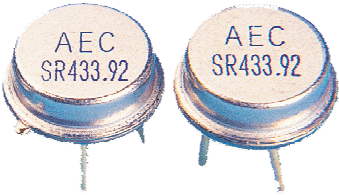
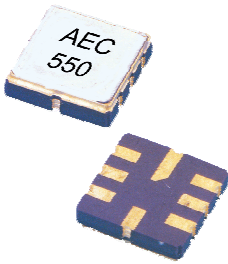


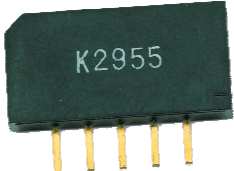
SMD type: QCC8C, DCC6C



Filter		
Center Frequency (MHz)	AEC part No	Market
315	SR315	USA
433.92	SF433.92	Europe
868.35	SF868.35	Europe
916.50	SF916.50	USA

7. Package model

SAW resonator & Filter

Item	Description
	F11 Size 3.8 X11.3
	TO39 Size Φ 9.0 X 3.0 (lead length)
	QCC8C Size: 5X5mm 8 pads
	DCC6 Size: 3.8X3.8mm 6 pads
	DCC6C Size 3X3mm 6 pads
	SIP 5D Size 14.5X3.8mm 5 pins.

8. Client Application Case

8.1 An US Multinational Security device Manufacturer

The US public listed Multi-national manufacturer for market in US mainly uses several million SAW resonator SR315MHz for transmitting signal for home security device and use our SAW filter SF315 for receiving signal for many years.

8.2 Malaysia Car security Manufacturer.

Car Security manufacturer use our SRM315MHz for US market in the remote controller to control the car door locking and enable alarm and use SAW resonator SR433.92MHz for Europe Market

8.3 Italian Automatic door Gate Manufacturer.

The manufacturers in Italy use our SMD SRM433.92 for Europe market in the remote controller of the automatic door gate. The SAW filter is used in the receiver to open the gate when receive the signal from remote controller.

8.4 Spain Telecom Manufacturer

Spain Telecom Manufacturer uses our SAW filter 433.92 and 868.35MHz in the Telecom receiver.

8.5 Germany OEM Manufacturer

A Germany OEM manufacturer working with us more than 10 years uses our SMD SAW filter 868.35MHz used in receiver in car security system.

8.6 Brazil Car Security Manufacturer

Brazilian Car security Manufacturer uses our SRM418 and SRM433.92MHz resonator for car security system device.

9. Why choose AEC?

1) The rule of our enterprise culture with the slogan

‘ Trust, quality and customer satisfaction are our first priority

2) Price we offer to provide enough profit for customer in keen competition.

3) Over 20 years experience in the frequency control products field

4) Four main types of products including thousand of models, what the items you need are just inside!

5) From Dip type to SMD type, all sizes range of our product's packages, you can pick the one you need in a simple way

6) For your convenience to purchase, our products are all under [RoHS](#)
Compliant with *SGS certificates*

7) Our technical departments are always here to suit your products' needs

8) Strong R&D team to meet the market trend

9) Hi-tech factory facilities (equipment imported from Japanese, USA and Germany company) are introduced to enhance the capability and quality.

10) Total Quality Management

(3 steps: Vendor appraisal, in-processing test and final test)

ensure our quality can satisfy the customer requirement

Quality are verified under customer mass usage in different products

10. Contact



“Quality and Customer Satisfaction are our first priority”

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