

# SAW Resonator Specification

Version No. S

Total Page 3

公司名称

CUSTOMER

产品名称

TYPE SAW Resonator 433.92MHz

型号

PART NO. L433C53

贵公司部品号

CUSTOMER'S PART NO.

确认

APPROVED (Please sign here and send copy back to us.)

批准  
Approved by

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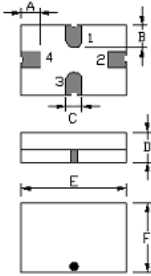
# 433.92MHz One-Port SAW Resonator For Wireless Remote Control

The L433C is a true one-port, surface-acoustic-wave (SAW) resonator in a surface-mount epoxy board. It provides reliable, fundamental-mode, quartz frequency stabilization i.e. in transmitters or local oscillators operating at 433.920 MHz.

**433.92 MHz  
SAW Resonator**

## Package Dimension

unit: mm



Pin	Configuration
1	Input/Output
3	Output/Input
2,4	Ground

Sign	Data/mm	Sign	Data/mm
A	1.20	E	5.00
B	0.80	F	3.50
C	0.46		
D	1.70		

## Marking

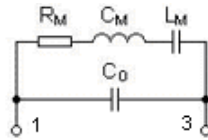
**L433C**

A7

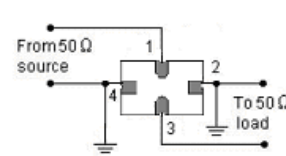
Marking

model  
month/year

## Equivalent LC Model and Test Circuit



Equivalent LC Model

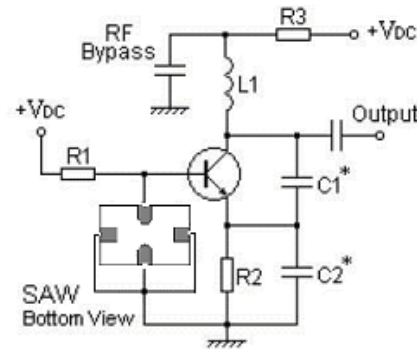
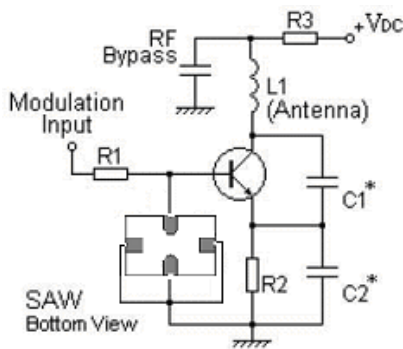


Test Circuit

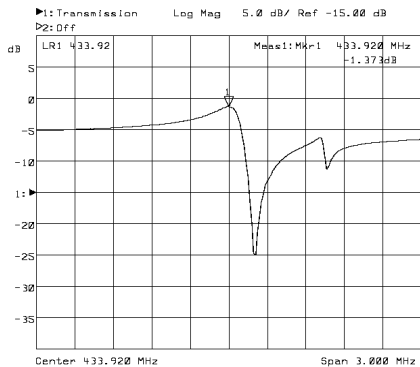
## Typical Application Circuits

1) Low-Power Transmitter Application

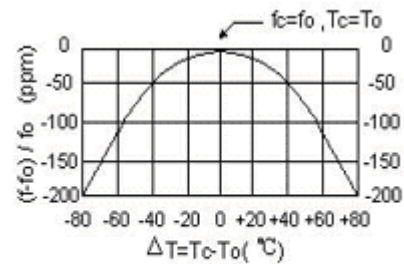
2) Local Oscillator Application



## Typical Frequency Response



## Temperature Characteristics



The curve shown above accounts for resonator contribution only and does not include oscillator temperature characteristics.

## 433.92MHz One-Port SAW Resonator For Wireless Remote Control

### Absolute Maximum Ratings

Rating	Value	Units
CW RF Power Dissipation (See Typical Test Circuit)	+0	dBm
DC Voltage Between Any Two Pins (Observe ESD Precautions)	±30	VDC
Case Temperature	-45 to +120	°C

### Electrical Characteristics

Characteristics	Sym	Notes	Minimum	Typical	Maximum	Units	
Center Frequency (+25°C) Absolute Frequency	$f_c$	2,3,4,5	433.845		433.995	MHz	
	Tolerance from 433.920MHz		$\Delta f_c$		±75	KHz	
Insertion Loss	IL	2,5,6		1.5	2.0	dB	
Quality Factor Unloaded Q	$Q_U$	5,6,7		12.800			
	50 Ω loaded Q		$Q_L$		2.000		
Temperature Stability Turnover Temperature	$T_O$	5,7,8	24	39	54	°C	
	Turnover Frequency		$f_O$		$f_c+2.7$		KHz
	Frequency Temperature Coefficient		FTC		0.037		ppm/°C <sup>2</sup>
Frequency Aging Absolute Value during the First Year	$ f_{A} $	1		≤10		ppm/y τ	
DC Insulation Resistance between Any Two Pins		5	1.0			M Ω	
RF Equivalent RLC Model Motional Resistance	$R_M$	5,7,9		18	26	Ω	
	Motional Inductance		$L_M$		86.0075		μ H
	Motional Capacitance		$C_M$		1.56417		pF
	Pin 1 to Pin 2 Static Capacitance		$C_O$	1.7	2.0	2.3	pF
Transducer Static Capacitance	$C_P$	5,6,7,9		1.7		pF	
Test Fixture Shunt Inductance	$L_{TEST}$	2,7		78		nH	
Lid Symbolization (in Addition to Lot and/or Date Code)	L433C						

**CAUTION: electrostatic Sensitive Device, Observe precautions for handling.**

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- The center frequency,  $f_c$ , is measured at the minimum IL point with the resonator in the 50 Ω test system.
- Unless noted otherwise, case temperature  $TC = +25°C \pm 2°C$ .
- Frequency aging is the change in  $f_c$  with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
- Turnover temperature,  $T_O$ , is the temperature of maximum (or turnover) frequency,  $f_O$ . The nominal frequency at any case temperature,  $TC$ , may be calculated from:  $f = f_O [1 - FTC (T_O - TC)^2]$ .
- This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance  $C_O$  is the measured static (nonmotional) capacitance between the two terminals. The measurement includes case parasitic capacitance.
- Derived mathematically from one or more of the following directly measured parameters:  $f_c$ , IL, 3 dB bandwidth,  $f_c$  versus  $TC$ , and  $C_O$ .
- The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
- 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.