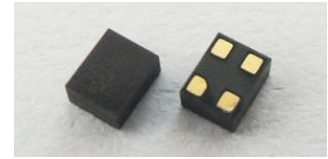


## 2016 Series

☑ CH2016-R433M75K-NT



### ※ Application & Features

- RF, Wireless
- Automotive Equipment at Other
- 2.0×1.6×1.0mm Metal Package
- This specification shall cover the characteristics of 1-port SAW resonator with 433.920M used for remote-control security.

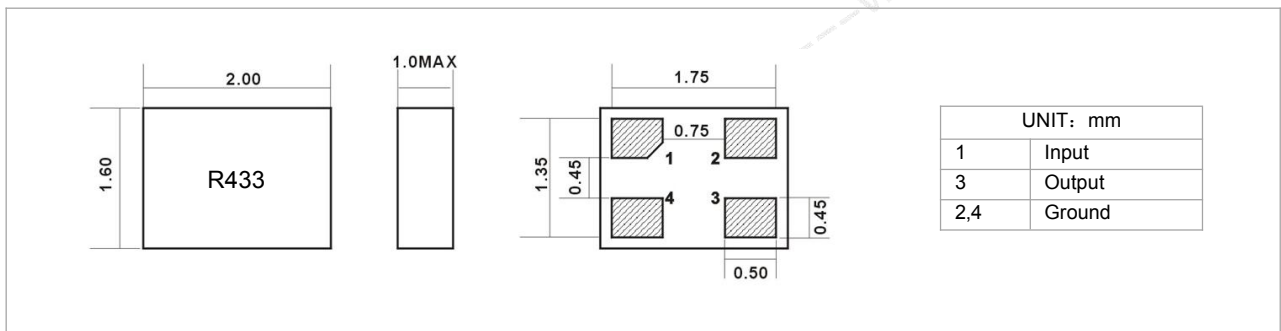
### ※ Maximum Rating

Rating		Value	Unit
CW RF power dissipation	$P$	0	dBm
DC voltage between any terminals	$V_{DC}$	±30	V
Operating temperature range	$T_A$	-40 ~ +85	°C
Storage temperature range	$T_{stg}$	-40 ~ +85	°C

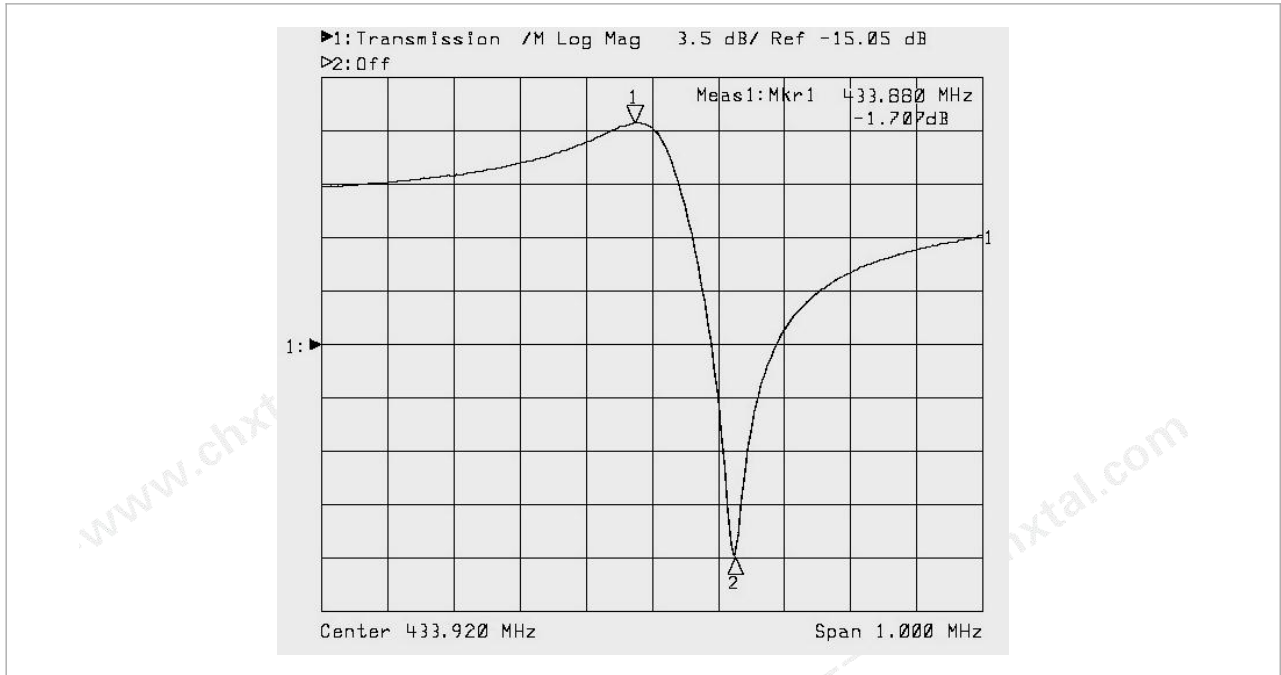
### ※ Electronic Characteristics

Characteristic		Sym	Minimum	Typical	Maximum	Unit
Center Frequency (+25°C)	Absolute Frequency	$f_c$	433.820	433.920	434.020	MHz
	Tolerance from 433.920 MHz	$\Delta f_c$		±100		kHz
Insertion Loss		IL		1.5	2.5	dB
Quality Factor	Unloaded Q	$Q_U$	8.000	12.800		
	50 Ω Loaded Q	$Q_L$	1000	2.000		
Temperature Stability	Turnover Temperature	$T_0$	10	25	40	°C
	Turnover Frequency	$f_0$		$f_0 \pm 2.7$		kHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤10		ppm/yr
DC Insulation Resistance Between Any Two Terminals			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	$R_M$		17.5	26	Ω
	Motional Inductance	$L_M$		81.06		μH
	Motional Capacitance	$C_M$		1.6596		pF
	Shunt Static Capacitance	$C_0$	1.7	1.96	2.3	pF

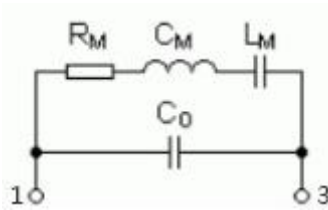
### ※ Mechanical Dimensions and Marking



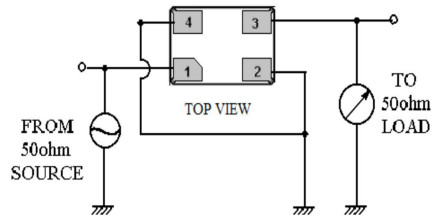
## ※ Typical Frequency Response



## ※ Equivalent LC Model

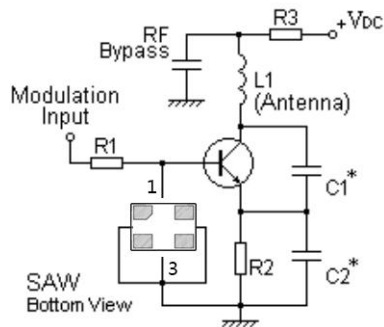


## ※ Test Circuit

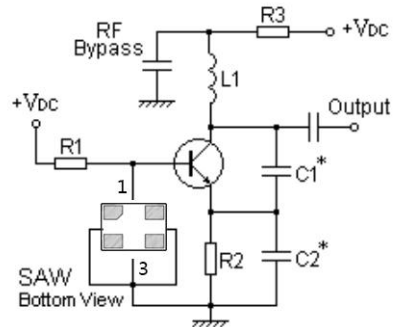


## ※ Typical Application Circuits

### 1) Low-Power Transmitter Application



### 2) Local Oscillator Application



## ※ Environment Characteristic

### 1 Thermal Shock:

The components shall remain within the electrical specifications after being kept at the condition of heat cycle conditions: TA=-40℃±3℃, TB=85℃±2℃, t1=t2=30min, switch time≤3min& cycle time : 100 times, recovery time: 2h±0.5h.

### 2 Resistance to solder heat

Submerge the device terminals into the solder bath at 260℃ ±5℃ for 10±1 sec. Then release the device into the room conditions for 4 hours. It shall meet the specifications in 2.2.

### 3 Solder ability

Submerge the device terminals into the solder bath at 245℃ ±5℃ for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in 2.2

### 4 The Temperature Storage:

4.1 High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85℃±2℃ for 500h, recovery time : 2h±0.5h.

4.2 Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the -40℃±3℃ for 500h, recovery time : 2h±0.5h.

### 5 Humidity test:

The components shall remain within the electrical specifications after being kept at the condition of ambient temperature 60℃±2℃, and 90~96% RH for 500h.

### 6 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m for 3 times. The resonator shall fulfill the specifications in 2.2.

### 7 Vibration

Subject the device to the vibration for 2 hour each in X, Y and Z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The resonator shall fulfill the specifications in 2.2.

## ※ Remark

### 1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

### 2 Ultrasonic cleaning

Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

### 3 Soldering

Only leads of component may be soldered. Please avoid soldering another part of component.