

SPECIFICATION

CUSTOMER: _____
PRODUCT : _____ SAW RESONATOR _____
MODEL NO: _____ R433-3225 _____
PREPARED: _____ CHECKED: _____
APPROVED: _____ D A T E : _____

CUSTOMER RECEIVED:		
CHECKED	APPROVED	DATE

1. Scope

This specification shall cover the characteristics of 1-port SAW resonator with R433.92 used for remote-control security.

2. Electrical Specification

2.1 Maximum Rating

DC Voltage VDC	10V
AC Voltage Vpp	10V 50Hz/60Hz
Operation temperature	-40°C to +85°C
Storage temperature	-45°C to +85°C
Max Input Power	10dBm

2.2 Electronic Characteristics

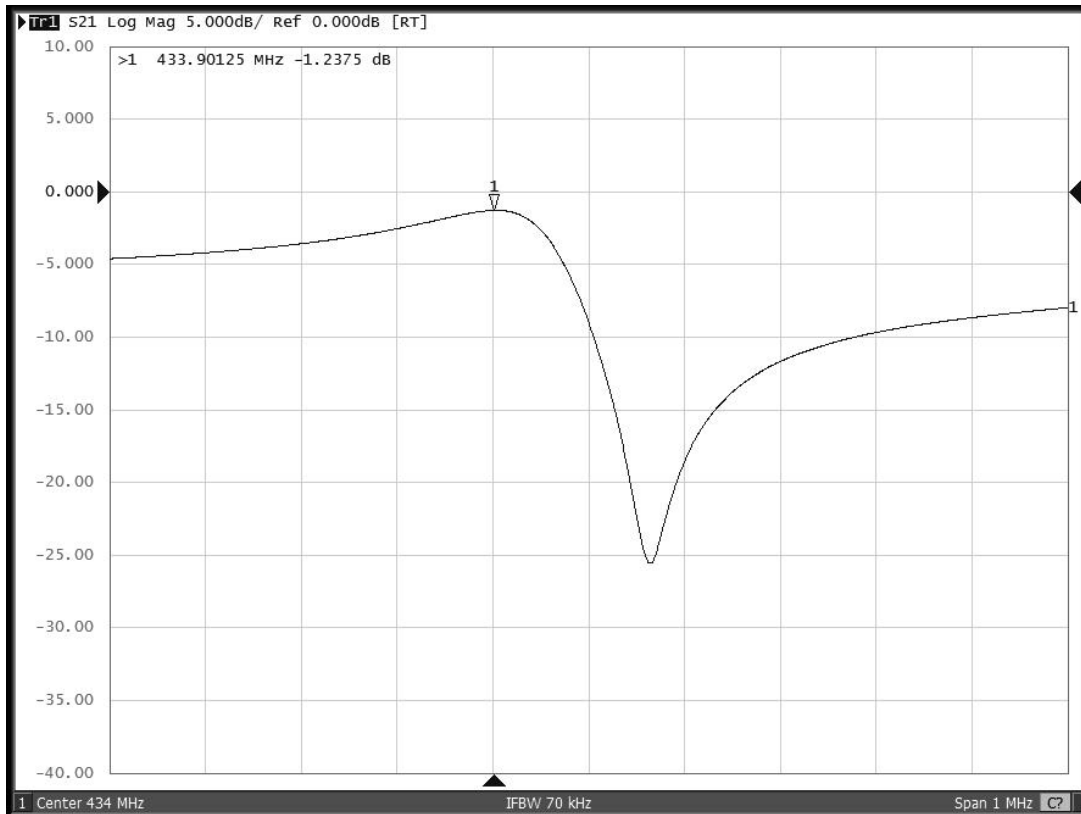
Test Temperature: 25°C±2°C

Terminating source impedance: 50Ω

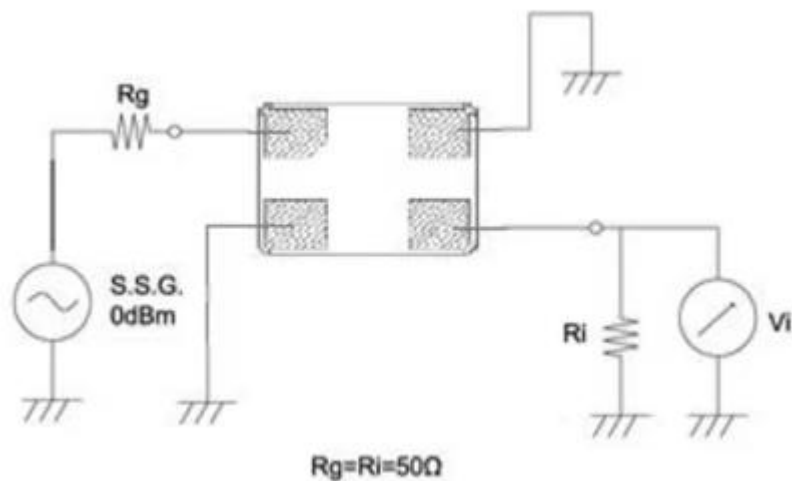
Terminating load impedance: 50Ω

Item			Minimum	Typical	Maximum	Unit
Center Frequency	Absolute Frequency	f_c	433.845	433.920	433.995	MHz
	Tolerance from 433.920MHz	Δf_c		±75		KHz
Insertion Loss(min)		IL		1.5	2.2	dB
Quality Factor	Unloaded Q	Q_U		12000		
	50Ω Loaded Q	Q_L		1500		
Temperature Stability	Turnover Temperature	T_0	25	40	55	°C
	Turnover Frequency	f_0		f_c		
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤10		ppm/yr
DC Insulation Resistance between Any Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R_M		12.200	19	Ω
	Motional Inductance	L_M		183.80		μH
	Motional Capacitance	C_M		0.734		fF
	Pin 1 to Pin 2 Static Capacitance	C_0		2.3		pF

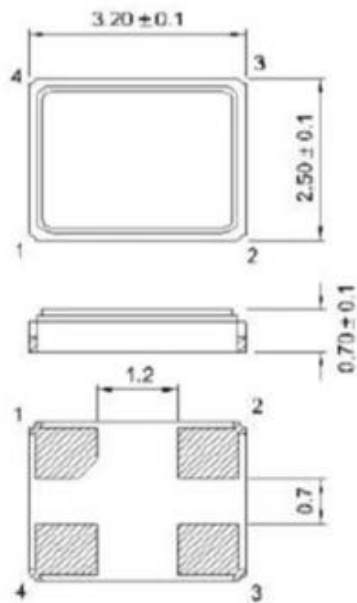
Frequency Response



3. TEST CIRCUIT



4. DIMENSION

Package Dimensions (DCC4C)

Pin Configuration

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

Stability Characteristics

	Test item	Condition of test
1	Mechanical shock	(a) Drops: 3 times on concrete floor (b) Height: 1.0 m
2	Vibration resistance	(a) Frequency of vibration: 10~55Hz (b) Amplitude: 1.5 mm (c) Directions: X,Y and Z (d) Duration: 2 hours
3	Moisture resistance	(a) Condition: 40°C±2°C 93 ⁺² ₋₃ % RH (b) Duration: 96 hours (c) Wait 4 hours before measurement
4	Climatic sequence	(a) +70°C for 16 hours (b) +55°C for 24 hours, 90~95% R.H. (c) -25°C for 2 hours (d) +40°C for 24 hours, 90~95% R.H. (e) Wait 4 hours before measurement
5	High temperature exposure	(a) Temperature: 85°C (b) Duration: 250 hours (c) Wait 4 hours before measurement
6	Temperature cycling	(a) +85°C for 30 minutes -40°C for 30 minutes repeated 120 times (b) Wait 4 hours before measurement

Requirements: The SAW filter shall remain within the electrical specifications after tests.

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.

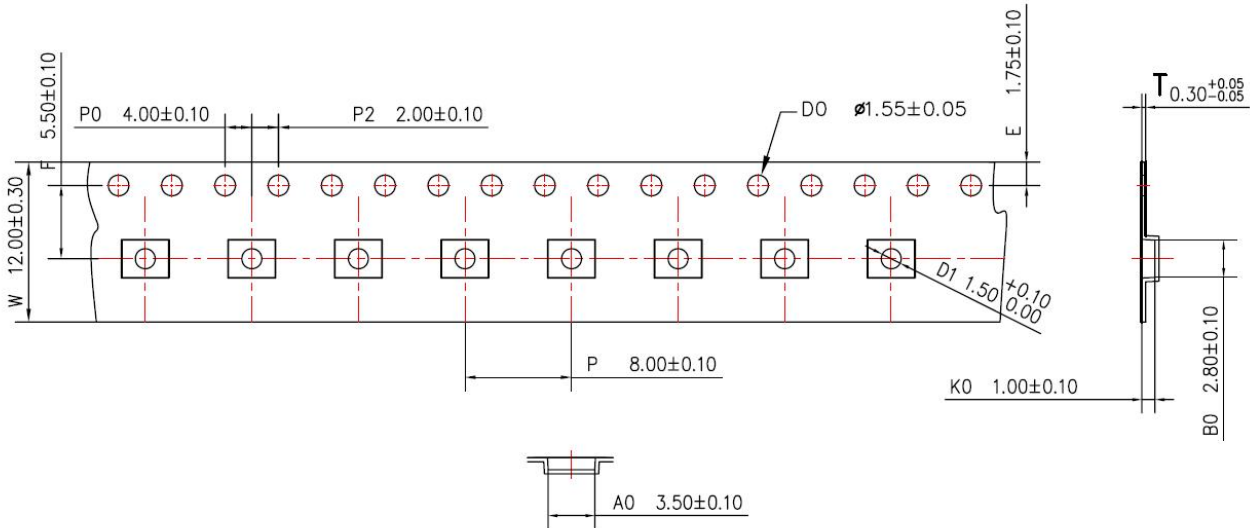
SAW RESONATOR

R433M-3225

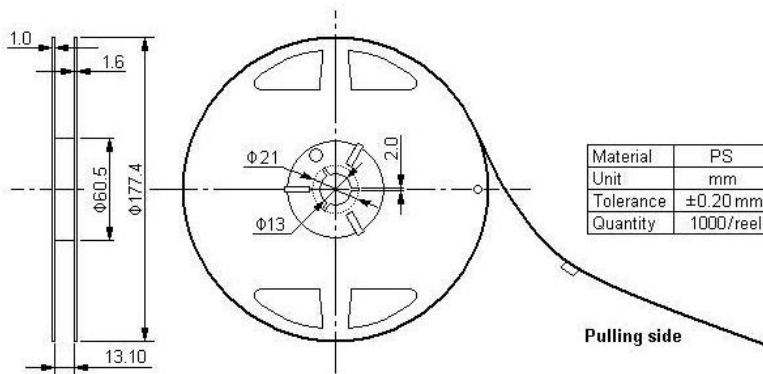
- SAW devices are electrostatic sensitive. Please avoid static voltage during operation and storage.
- Ultrasonic cleaning shall be avoided. Ultrasonic vibration may cause destruction of components.

Packing Information

Carrier Tape



Reel Dimensions



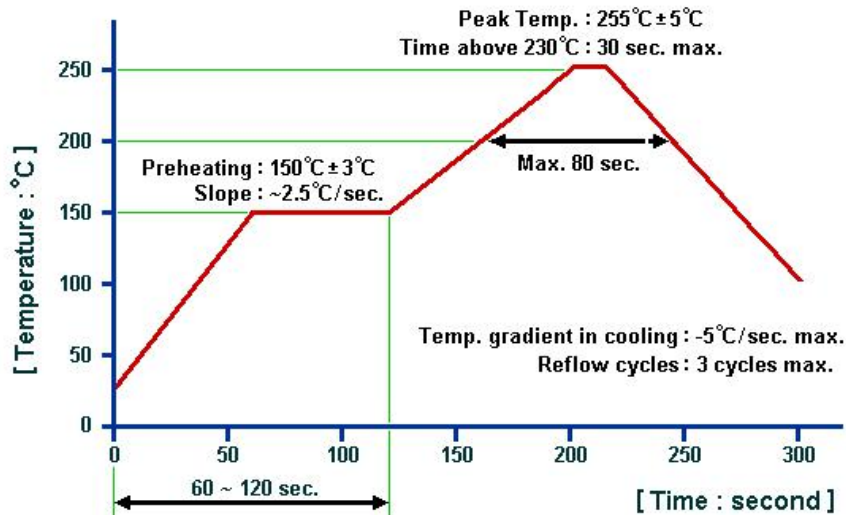
Outer Packing

Type	Quantity	Dimension	Description	Weight
Internal box	1000	190×188×42	anti-static plastic bag & carton box 1 reel / bag	0.18
External box	10000	235×205×210	10 bags / box (10000 pcs)	1.80

Unit: mm

Unit: kg

Recommended Soldering Profile



5. Environment Characteristic

5-1 High temperature exposure

Subject the device to +85°C for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2-2.

5-2 Low temperature exposure

Subject the device to -40°C for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2-2.

5-3 Temperature cycling

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +85°C for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 2-2.

5-4 Resistance to solder heat

Dip the device terminals no closer than 1.5mm into the solder bath at 260°C ± 10°C for 10 ± 1 sec. Then release the device into the room conditions for 4 hours. The device shall meet the specifications in 2-2.

5-5 Solderability

Subject the device terminals into the solder bath at 245°C ± 5°C for 5s, More than 95% area of the terminals must be covered with new solder. It shall meet the specifications in 2-2.

5-6 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 2-2.

5-7 Vibration

Subject the device to the vibration for 1 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 Hz. The device shall fulfill the specifications in 2-2.