



深圳市凯越翔电子有限公司

声表谐振器规格书

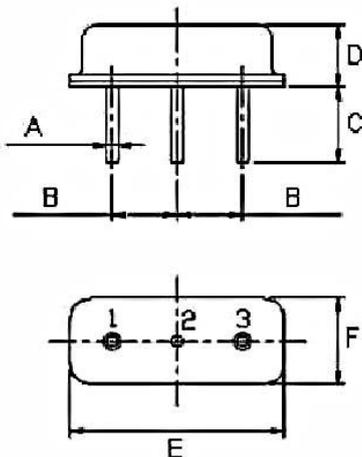
产品名称:	声表谐振器
产品型号:	D11/433.92M
产品参数:	± 75KHZ
原厂型号:	KD143392
凯越翔技术部:	董宗全

客户确认栏

认 证 印 章 年 月 日	负 责 人 印 章 年 月 日
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The YRR433 is a true one- port , surface- acoustic- wave(SAW) resonator in a low-profile D -11 case. It provides reliable , fundamental- mode , quartz frequency stabilization of fixed- frequency transmitters operating at 433.92 MHz.

1. Package Dimension (D -11)



Pin	Connection
1	Input
2	Case Ground
3	Output

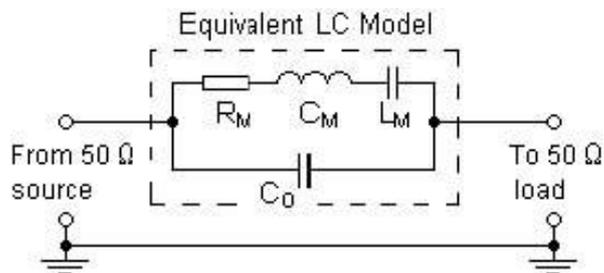
Dimension	Data (unit: mm)
A	0.45±0.05
B	2.54±0.06
C	3.0±0.20
D	3.0 max
E	8.36±0.08
F	3.45±0.08

2. Marking Circuit

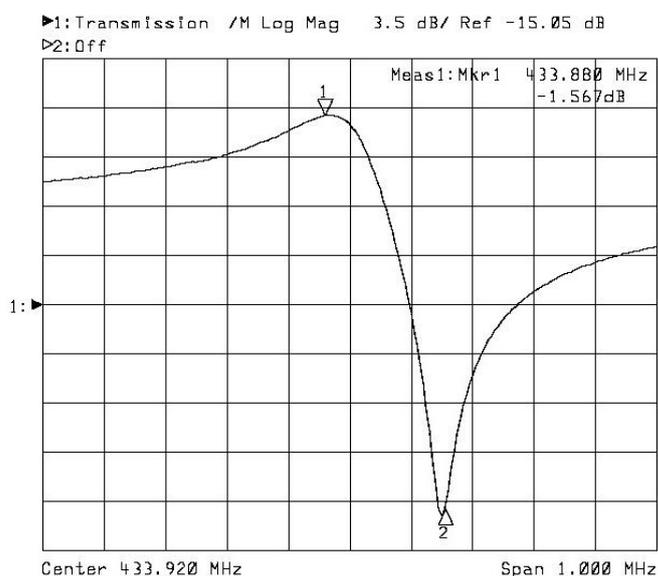
R433

Color: Black or Blue

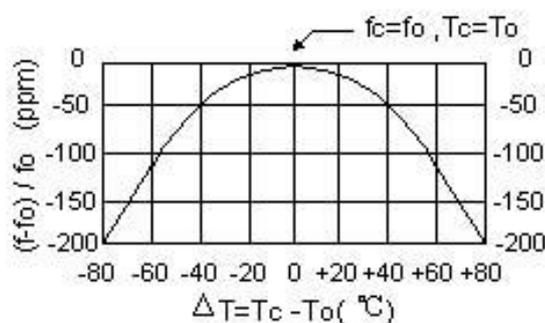
3. Equivalent LC Model and Test



5. Typical Frequency Response



6. Temperature Characteristics



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

7. Performance

7-1. Maximum Rating

Rating	Value	Units
CW RF Power Dissipation	+10	dBm
DC Voltage Between Any Two Pins	±30V	VDC
Case Temperature	-20 to +70	°C

7-2. Electronic Characteristics

Characteristic		Sym	Minimum	Typical	Maximum	Units
Center Frequency (+25°C)	Absolute Frequency	f_c	433.845		433.995	MHz
	Tolerance from 433.920 MHz	Δf_c		±75		kHz
Insertion Loss		I_L		1.5	1.8	dB
Quality Factor	Unloaded Q	Q_U		15974		
	50 Ω Loaded Q	Q_L		1900		
Temperature Stability	Turnover Temperature	T_o	25	40	55	°C
	Turnover Frequency	f_o		f_c		kHz
	Frequency Temperature Coefficient	FTC		0.037		ppm/°C ²
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		19	23	Ω
	Motional Inductance	L_M		79.137		μH
	Motional Capacitance	C_M		1.8019		fF
	Pin 1 to Pin 2 Static Capacitance	C_o		1.9		pF

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

1. 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.
2. The center frequency, f_c , is measured at the minimum insertion loss point, IL_{MIN} , with the resonator in the $50\ \Omega$ test system ($VSWR \leq 1.2: 1$). The shunt inductance, L_{TEST} , is tuned for parallel resonance with C_0 at f_c .
3. Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
4. Unless noted otherwise, case temperature $T_c = +25^\circ\text{C} \pm 2^\circ\text{C}$.
5. Derived mathematically from one or more of the following directly measured parameters: f_c , IL , 3dB bandwidth, f_c versus T_c , and C_0 .
6. 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: $f = f_o [1 - FTC(T_o - T_c)^2]$. Typically, *oscillator* T_o is 20°C less than the specified *resonator* T_o .
7. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C_0 is the static (nonmotional) capacitance between Pin 1 and Pin 2 measured at low frequency (10 MHz) with a capacitance meter. The measurement includes parasitic capacitance with floating case. For usual grounded case applications (with ground connected to either pin 1 or pin 2 and to the case), add approximately 0.25pF to C_0 .

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