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：	F11/433.92M
产品参数：	±75KHZ
原厂型号：	KF143392
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

工厂地址：深圳市龙华区观澜人民路蔡发工业城一栋四层 TEL：0755-89315823 89315866
FAX：0755-89315223 官网：www.kaiyuexiang.com

- Ideal for 433.92 MHz Transmitters
- Very Low Series Resistance
- Quartz Stability
- Rugged, Hermetic, Low-Profile TO39 or F11 Case

TheYRR433.92 is a true one-port, surface-acoustic-wave (SAW) resonator in a low-profile TO39 or F11 case. It provides reliable, fundamental-mode, quartz stabilization of fixed-frequency transmitters operating at 433.92 MHz. The YRR433.92 is designed specifically for remote control and wireless security transmitters operating in Europe under ETSI I-ETS 300 220 and in Germany under FTZ 17 TR 2100.

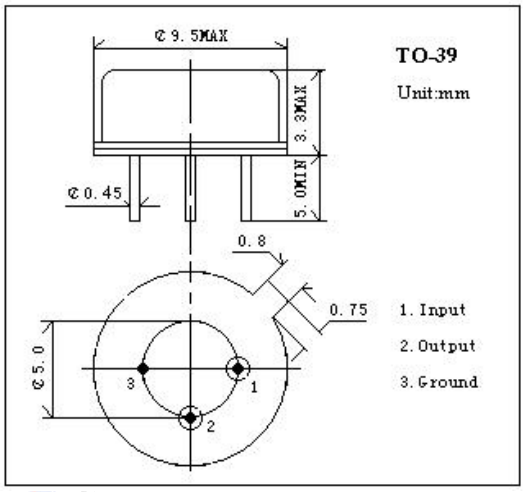
1. Marking

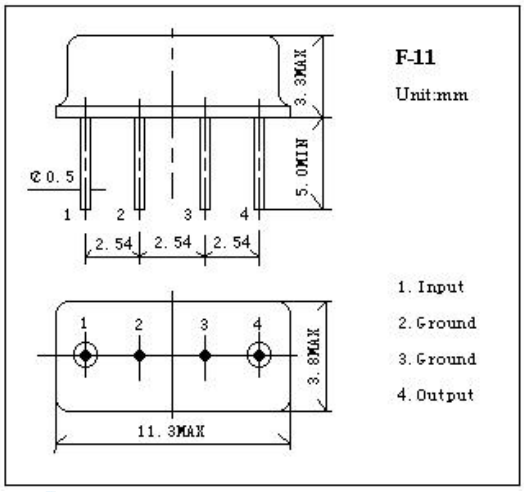
R433

Color:Black or Blue

Center Frequnecy:433.92 MHz

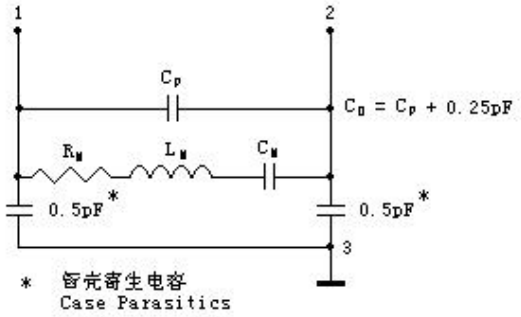
2. Package Dimension

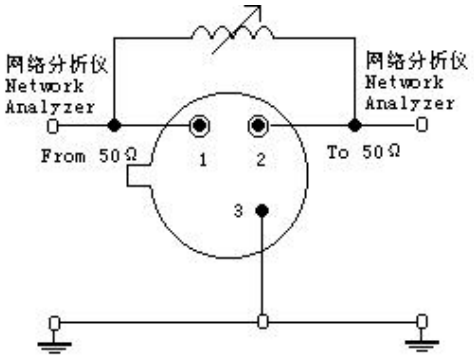




3. Equivalent LC Model

4. Test Circuit





5. Absolute Maximum Ratings

Rating	Value	Units
CW RF Power Dissipation	+0	dBm
DC Voltage Between Any Two Pins (Observe ESD Precautions)	±30	VDC
Storage Temperature	-40 to ±85	° C
Operation Temperature	-20 to ±70	° C

6. Electrical Characteristics

Characteristic		Syc	Min	Typical	Max	Units
Center Frequency(+25℃)	Absolute Frequency	fc	433.845	433.920	433.995	MHz
	Tolerance from 433.920MHz	△fc			±75	kHz
Insertion Loss		IL		1.5	2.0	dB
Quality Factor	Unloaded Q	Q_U		12,800		
	50Ω Loaded Q	Q_L		2,000		
Temperarture Stability	Turnover Temperature	T_O	24	39	54	℃
	Turnover Frequency	f_O		fc+2.7		kHz
	Freq. Temp. Coefficient	FTC		0.037		ppm/℃^{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		18	26	Ω
	Motional Inductance	L_M		86.0075		μH
	Motional Capacitance	C_M		1.56417		fF
	Pin 1 to 2 Static Capacitance	C_O	1.7	2.0	2.3	pF
Transducer Static Capacitance		Cp		1.7		pF
Test Fixture Shunt Inductance		L_{TEST}		78		nH

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

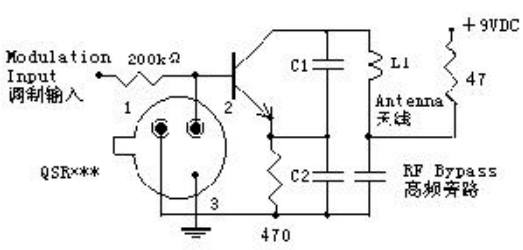
Notes:

1. Frequency aging is the change in fc with time and is specified at +65℃ or less. Aging may exceed the specification for prolonged temperatures above +65℃. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
2. The center frequency, fc, is measured at the minimum insertion loss point, IL_{MIN}, with the resonator in the 50Ω test system (VSWR ≤1.2：1). The shunt inductance, L_{TEST}, is tuned for parallel resonance with Co at fc.
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 Tc=+25℃±2℃.
5. Derived mathematically from one or more of the following directly measured parameters: fc,

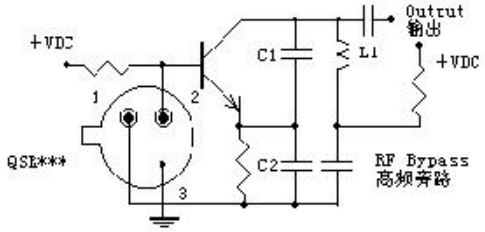
IL, 3dB bandwidth, fc versus Tc, and Co.

6. Turnover temperature, To, is the temperature of maximum (or turnover) frequency, fo. The nominal frequency at any case temperature, Tc, may be calculated from: f=fo [1-FTC(To-Tc)^2].Typically, *oscillator* To is 20℃ less than the specified *resonator* To.
7. This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance Co 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 Co.

7. Application Circuits

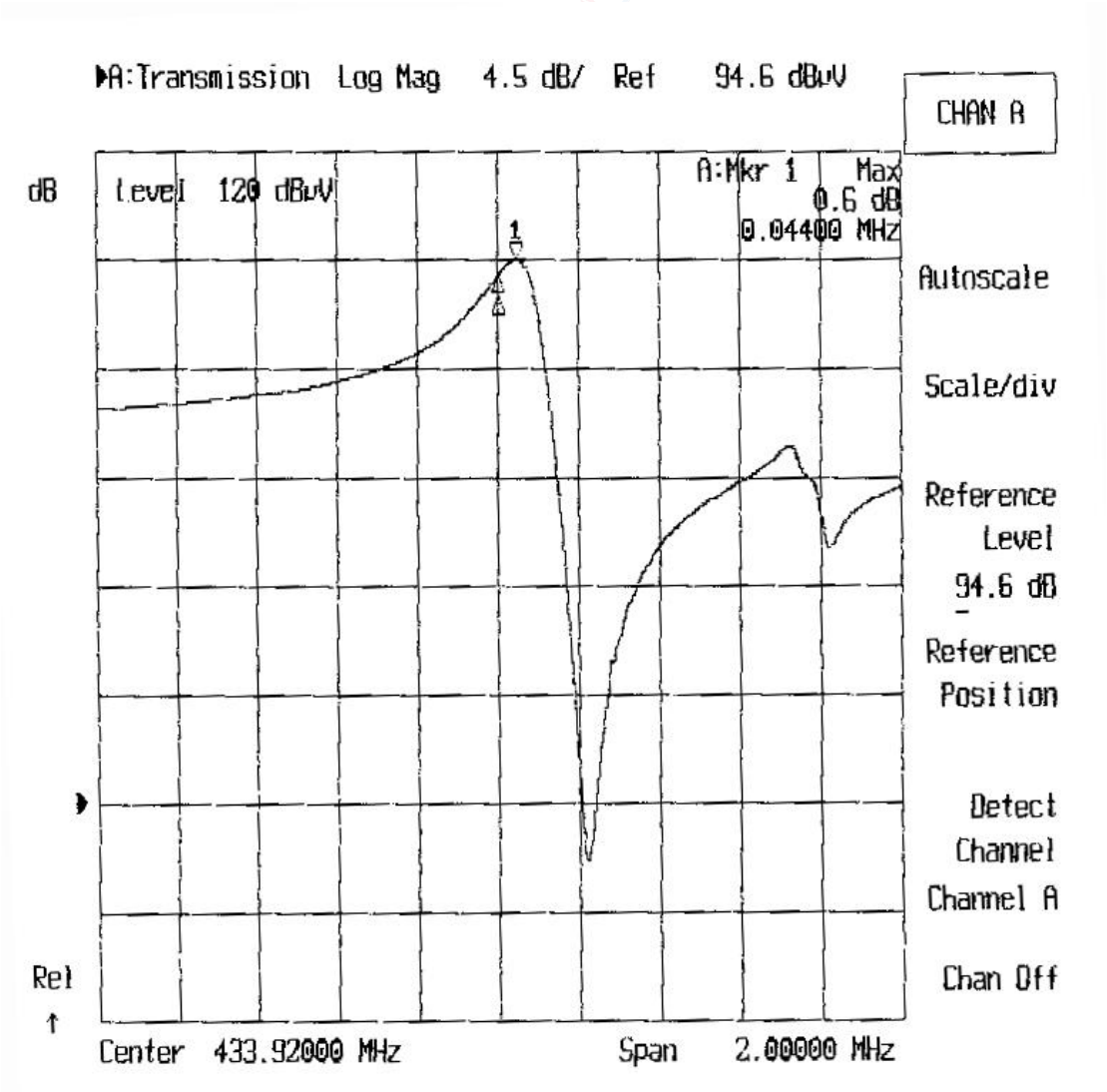


Low-Power Transmitter Application



Local Oscillator Application

8. Typical Frequency Response



9. Reliability

- Mechanical Shocks: The components l remain within the electrical specifications after 1000 shocks, acceleration 392m/s^2 duration 6 milliseconds.
- Vibration Fatigue: The components shall remain within the electrical specifications after loaded vibration at 20 Hz, amplitude 1.5 mm, for 2 hours.
- Terminal Strength: The components shall remain within the electrical specifications after pulled 2 Kgs weight for 10 seconds towards an axis of each terminal.
- High Temperature Storage: The components shall remain within the electrical specifications after being kept at the 85℃±2℃ for 48 hours, then kept at room temperature for 2 hours.
- Low Temperature Storage: The components shall remain within the electrical specifications after being kept at the -25℃±2℃ for 48 hours, then kept at room temperature for 2 hours.
- Temperature Cycle: The components shall remain within the electrical specifications after 5 Cycles of high and low temperature testing (one cycle: 80℃ for 30 minutes →25℃ for 5 minutes →-25℃ for 30 minutes) than kept at room temperature for 2 hours.
- Solder-heat Resistance: The components shall remain within the electrical specifications after dipped in the solder at 260℃ for 10±1 seconds, then kept at room temperature for 2 hours (Terminal must be dipped leaving 1.5 mm from the case).
- Solderability: Solderability of terminal shall be kept at more than 80% after dipped in the solder flux at 230℃±5℃ for 5±1 seconds.

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