

# **R433**

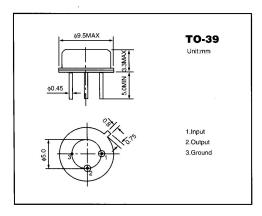
### 433.92MHZ One-port SAW Resonator For Wireless Remote Controller

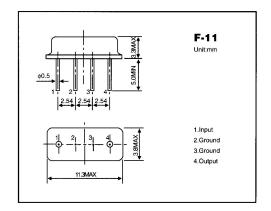
Marking: R433.92M

- Ideal for 433.92MHZ Remote-control and WirelessSecurity Transmitters
- Very Low Series Resistance
- Quartz Stability
- Rugged, Hermetic, Low-Profile TO-39 0r F-11 Case

Pin No.	Function			
1	Input or Output			
2	Output or Input			
3	Ground			







1. Absolute Maximum Rating

Rating	Value	Units
CW RF Power Dissipation	+0	dbm
DC Voltage between Any Two Pins	±10	V
Case Temperature	-40 to +85	$^{\circ}$ C

### 2. Electrical Characteristics

Characteristic		Sym.	Min.	Typ.	Max.	Unit
Center Frequency (25°C)Absolute Frequency Tolerance from 433.92MHZ		fc	433.845	433.92	433.995	MHz
		∆ fc		±75		KHz
Insertion Loss		IL		1.2	2.5	dB
Quality Factor	Unloaded Q	$Q_U$		11000		
	50 Ω loaded Q	$Q_{\rm L}$		2000		
_	Turnover Temperature	To	-	39	-	$^{\circ}$
	Turnover Frequency	fo		fc+8.4		KHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C²
Frequency Aging (Value during the First Year)		$f_A$			10	ppm/yr
1 1	Motional Resistance	$R_{M}$		18	26	Ω
	Motional Inductance	$L_{M}$		86		μH
	Motional Capacitance	C <sub>M</sub>		1.56		pF
	Pin1 to Pin2 Static Capacitance	Co	1.7	2.0	2.3	pF
	Transducer Static Capacitance	$C_{P}$		1.8		pF
DC Insulation Resistance between Any Two Pins			1.0			ΜΩ



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#### NOTES:

- 1) Unless noted otherwise, case temperature  $Tc=+25\pm2^{\circ}C$ .
- 2) The center frequency fc 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 Co at fc. Typically,  $f_{OSCII,LATOR}$  or  $f_{TRANSMITTER}$  is approximately equal to the resonator fc.
- 3) 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  $20^{\circ}C$  less than the specified resonator To.
- 4) Frequency aging is the change in fc 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.
- 5) 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 pin1 and pin2 measured at low frequency (10MHZ) with a capacitance meter. The measurement includes case parasitic capacitance with a 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.
- 6) Derived mathematically from one or more of the following directly measured parameters: fc, IL, 3dB bandwidth, fc versus T

#### 3. Others

- Typically, equipment utilizing this device requires emissions testing and government approval, which
  is the responsibility of the equipment manufacturer.
- 2) Electrostatic Sensitive Device, observe precautions for handing.
- 3) According to the different request of customer, we can supply the different Frequency precision, for example,  $\pm 75$ KHZ,  $\pm 150$ KHZ,  $\pm 250$ KHZ, etc.

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