

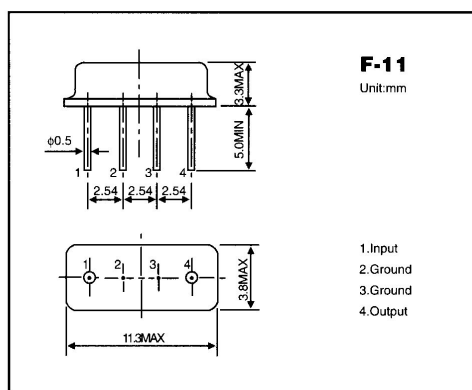
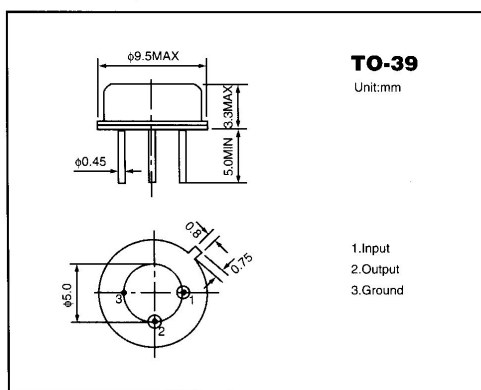
R315

315MHZ One-port SAW Resonator For Wireless Remote Controller

- Ideal for 315MHZ Remote-control and Wireless Security Transmitters
- Very Low Series Resistance
- Quartz Stability
- Rugged, Hermetic, Low-Profile TO-39 Or F-11 Case

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

Marking: R315



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	°C

2. Electrical Characteristics

Characteristic		Sym.	Min.	Typ.	Max.	Unit
Center Frequency (25°C)	Absolute Frequency	f_c	314.025	315	315.075	MHz
	Tolerance from 433.92MHz	Δf_c		±75		KHz
Insertion Loss		IL		1.2	2.5	dB
Quality Factor	Unloaded Q	Q_U		11000		
	50 Ω loaded Q	Q_L		2000		
Temperature Stability	Turnover Temperature	T_O	-	39	-	°C
	Turnover Frequency	f_O		$f_c+8.4$		KHz
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C ²
Frequency Aging (Value during the First Year)		f_A			10	ppm/yr
RF Equivalent RLC Model	Motional Resistance	R_M		18	26	Ω
	Motional Inductance	L_M		86		μH
	Motional Capacitance	C_M		1.56		pF
	Pin1 to Pin2 Static Capacitance	C_O	1.7	2.0	2.3	pF
	Transducer Static Capacitance	C_P		1.8		pF
DC Insulation Resistance between Any Two Pins			1.0			MΩ

NOTES:

- 1) Unless noted otherwise, case temperature $T_c = +25 \pm 2^\circ\text{C}$.
- 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 . Typically, $f_{\text{OSCILLATOR}}$ or $f_{\text{TRANSMITTER}}$ is approximately equal to the resonator f_c .
- 3) Turnover temperature, T_0 , is the temperature of maximum (or turnover) frequency, f_0 . The nominal frequency at any case temperature, T_c , may be calculated from: $f = f_0(1 - FTC(T_0 - T_c)^2)$. Typically oscillator T_0 is 20°C less than the specified resonator T_0 .
- 4) 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.
- 5) 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 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 C_0 .
- 6) Derived mathematically from one or more of the following directly measured parameters: f_c , IL , 3dB bandwidth, f_c versus T

3. Others

- 1) 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 handling.
- 3) According to the different request of customer, we can supply the different Frequency precision, for example, $\pm 75\text{KHZ}$, $\pm 150\text{KHZ}$, $\pm 250\text{KHZ}$, etc.