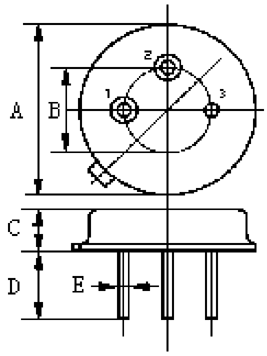
The NDR433.42 is a true one-port, surface-acoustic-wave (**SAW**) resonator in a low-profile **TO-39** case**.** It provides reliable, fundamental-model, quartz frequency stabilization of fixed-frequency transmitters operating at **433.42 MHz.**

1.Package Dimension (TO-39)



Pin	Connection
1	Terminal1
2	Terminal2
3	Case Ground

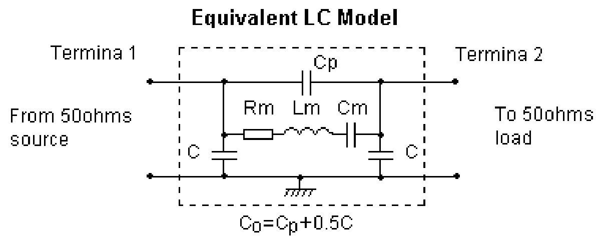
	Data (unit: mm)
A	9.1±0.10
B	5.08±0.10
C	1.25±0.10
D	3±0.20 / 5±0.20
E	0.45±0.20

2.Marking

NDR433.42

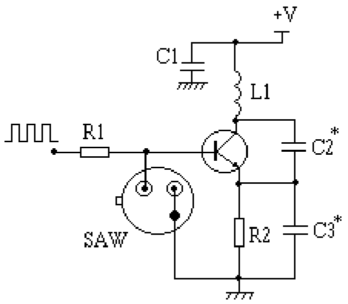
Color: Black or Blue

3.Equivalent LC Model and Test Circuit

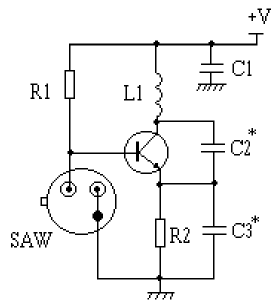


4.Typical Application Circuit

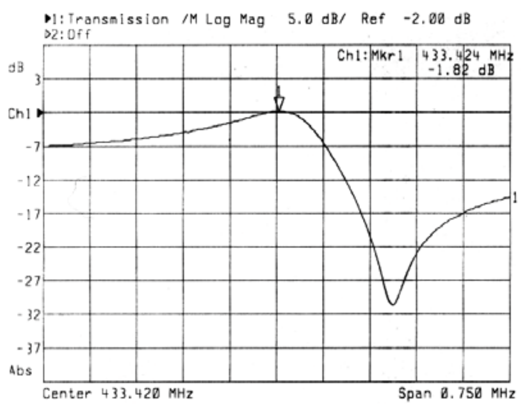
1) Telecontrol Circuitry



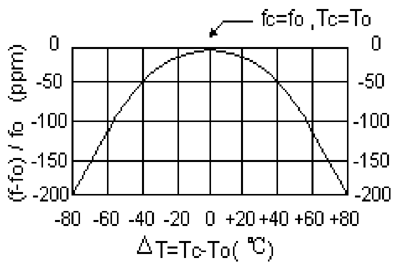
2) Local Oscillator Application



5.Typical Frequency Response



6.Temperature Characteristics



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

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7.Performance

7-1.Maximum Rating

Rating	Value	Units
CW RF Power Dissipation	+0	dBm
DC Voltage Between Any Two Pins	±30V	VDC
Case Temperature	-40 to +85	℃

7-2.Electronic Characteristics

Characteristic		Sym	Minimum	Typical	Maximum	Units
Center Frequency (+25℃)	Absolute Frequency	f_C	433.345		433.495	MHz
	Tolerance from 433.42 MHz	Δf_C		±75		kHz
Insertion Loss		IL		2.0	2.5	dB
Quality Factor	Unloaded Q	Q_U		10,600		
	50 Ω Loaded Q	Q_L		2,200		
Temperature Stability	Turnover Temperature	T_O	25	40	55	℃
	Turnover Frequency	f_O		fc		kHz
	Frequency Temperature Coefficient	FTC		0.037		ppm/℃^{2}
Frequency Aging	Absolute Value during the First Year	$\lvert f_A \rvert$		≤10		ppm/yr
DC Insulation Resistance Between Any Two Pins			1.0			MΩ
RF Equivalent RLC Model	Motional Resistance	R_M		26	33	Ω
	Motional Inductance	L_M		101.841		μH
	Motional Capacitance	C_M		1.3254		fF
	Pin 1 to Pin 2 Static Capacitance	C_O		2.1		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℃ 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, f_C ,is the frequency of minimum IL measured with the resonator in the specified test fixture in a 50 Ω test system with VSWR ≤ 1.2 : 1. Typically, $f_{oscillator}$ or $f_{transmitter}$ is less than the resonator 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℃±2℃.

5.The design, manufacturing process, and specifications of this device are subject to change without notice.

6.Derived mathematically from one or more of the following directly measured parameters: f_C, IL, 3 dB bandwidth, f_C versus T_C , and C_O.

7.Turnover temperature, T_O, is the temperature of maximum (or turnover) frequency, f_O, The nominal center 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℃ less than the specified resonator T_O.

8.This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only . The capacitance C_O is the measured static (nonmotional) capacitance between either pin 1 and ground or pin 2 and ground .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 0.25 pF to C_O.

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