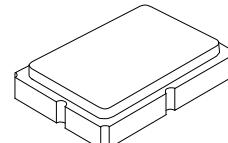


- **Designed for 315.0 MHz Transmitters**
- **Very Low Series Resistance**
- **Quartz Stability**
- **Surface-mount Ceramic Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

RoHS  
Compliant

**RO3073A-6**

**315.0 MHz  
SAW  
Resonator**



**SM5035-4**

The RO3073A-6 is a one-port surface-acoustic-wave (SAW) resonator packaged in a surface-mount ceramic case. It provides reliable, fundamental-mode quartz frequency stabilization of fixed-frequency transmitters operating at 315.0 MHz. The RO3073A-6 is designed specifically for remote-control and wireless security transmitters.

**Absolute Maximum Ratings**

Rating	Value	Units
CW RF Power Dissipation (See: Typical Test Circuit)	+0	dBm
DC Voltage Between Terminals (Observe ESD Precautions)	±30	VDC
Case Temperature	-40 to +85	°C
Soldering Temperature (10 seconds / 5 cycles maximum)	260	°C

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency, +25 °C	$f_C$	$\Delta f_C$	314.950		315.050	MHz
	Tolerance from 315.0 MHz				±50	kHz
Insertion Loss	IL			1.5	2.2	dB
Quality Factor	$Q_U$	$Q_L$	8000			
	50 Ω Loaded Q		1300			
Temperature Stability	$T_O$	$f_C$	10	25	40	°C
	Turnover Frequency					
	Frequency Temperature Coefficient		0.032			ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	$ f_A $		≤10		ppm/yr
DC Insulation Resistance between Any Two Terminals			1.0			MΩ
RF Equivalent RLC Model	$R_M$	$L_M$	19.4			Ω
	Motional Inductance		78.4			µH
	Motional Capacitance		3.3			fF
	Shunt Static Capacitance	$C_O$	4.1			pF
Test Fixture Shunt Inductance	$L_{TEST}$		64.2			nH
Lid Symbolization (in addition to Lot and/or Date Codes)			789, YYWWS			

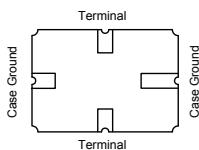
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

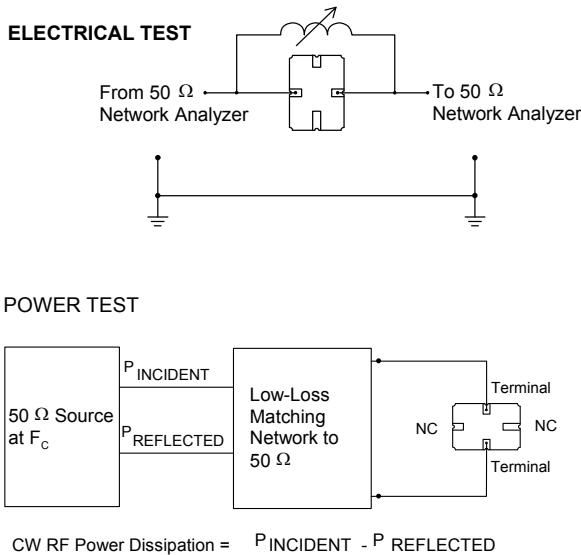
## Electrical Connections

The SAW resonator is bidirectional and may be installed with either orientation. The two terminals are interchangeable and unnumbered. The callout NC indicates no internal connection. The NC pads assist with mechanical positioning and stability. External grounding of the NC pads is recommended to help reduce parasitic capacitance in the circuit.



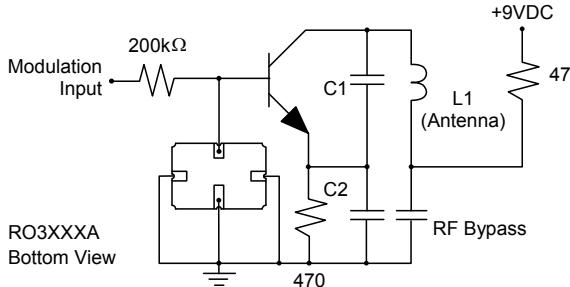
## Typical Test Circuit

The test circuit inductor,  $L_{TEST}$ , is tuned to resonate with the static capacitance,  $C_0$ , at  $f_C$ .

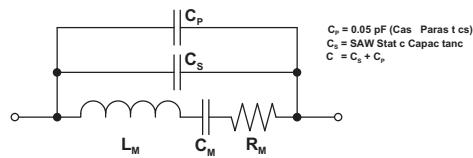


## Typical Application Circuits

### Typical Low-Power Transmitter Application



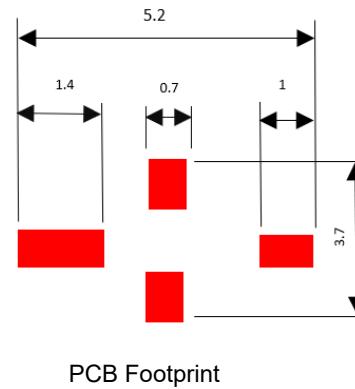
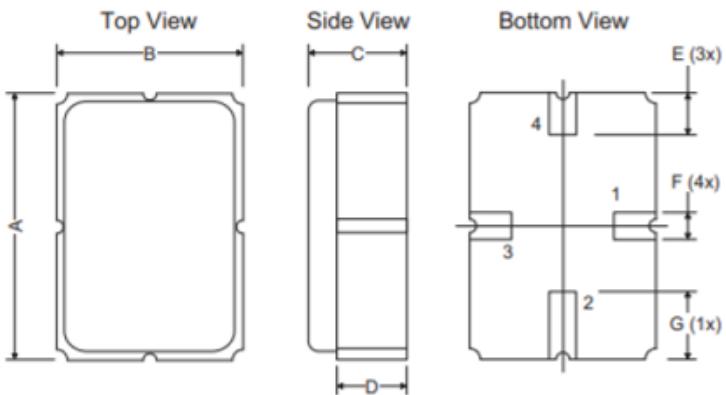
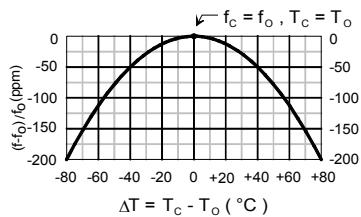
### Equivalent RLC Model



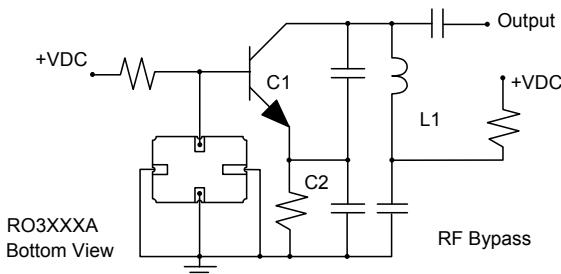
### Temperature Characteristics

The curve shown on the right accounts for resonator contribution only and does not include LC component temperature contributions.

### Case



### Typical Local Oscillator Applications



Dimensions	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.87	5.00	5.13	0.191	0.196	0.201
B	3.37	3.50	3.63	0.132	0.137	0.142
C	1.45	1.53	1.60	0.057	0.060	0.062
D	1.35	1.43	1.50	0.040	0.057	0.059
E	0.67	0.80	0.93	0.026	0.031	0.036
F	0.37	0.50	0.63	0.014	0.019	0.024
G	1.07	1.20	1.33	0.042	0.047	0.052

## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

