

- **Ideal for 303.825 MHz Remote Control and Security Transmitters**
- **Very Low Series Resistance**
- **Quartz Stability**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

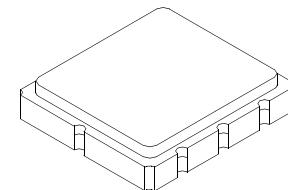
The RO3104C is a true one-port, surface-acoustic-wave (SAW) resonator in a surface-mount ceramic case. It provides reliable, fundamental-mode, quartz frequency stabilization of low power transmitters operating at 303.825 MHz. This SAW resonator is designed for transmitters used in remote control and wireless security applications operating in the USA under FCC Part 15 and in Canada under DoC RSS-210.

Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	0	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +85	°C
Soldering Temperature (10 seconds / 5 cycles maximum)	260	°C

RO3104C

**303.825 MHz
SAW
Resonator**



**SM5050-8 Case
5 X 5**

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Frequency, +25 °C	f_C		303.750		303.900	MHz
	Δf_C				± 75	kHz
Insertion Loss	IL			1.3	2.0	dB
Quality Factor	Q_U			9800		
	Q_L			1300		
Temperature Stability	T_O		10	25	40	°C
	f_O			f_C		
	FTC			0.032		ppm/°C ²
Frequency Aging	$ f_A $			10		ppm/yr
DC Insulation Resistance between Any Two Terminals			1.0			MΩ
RF Equivalent RLC Model	R_M			15.6		Ω
	L_M			79.7		μH
	C_M			3.4		fF
	C_O			3.3		pF
Test Fixture Shunt Inductance	L_{TEST}			83.9		nH
Lid Symbolization: Y = Year, WW = Week, S = Shift)				688, YWWS		
Standard Reel Quantity	Reel Size 7 Inch			500 Pieces / Reel		
	Reel Size 13 Inch			3000 Pieces / Reel		

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

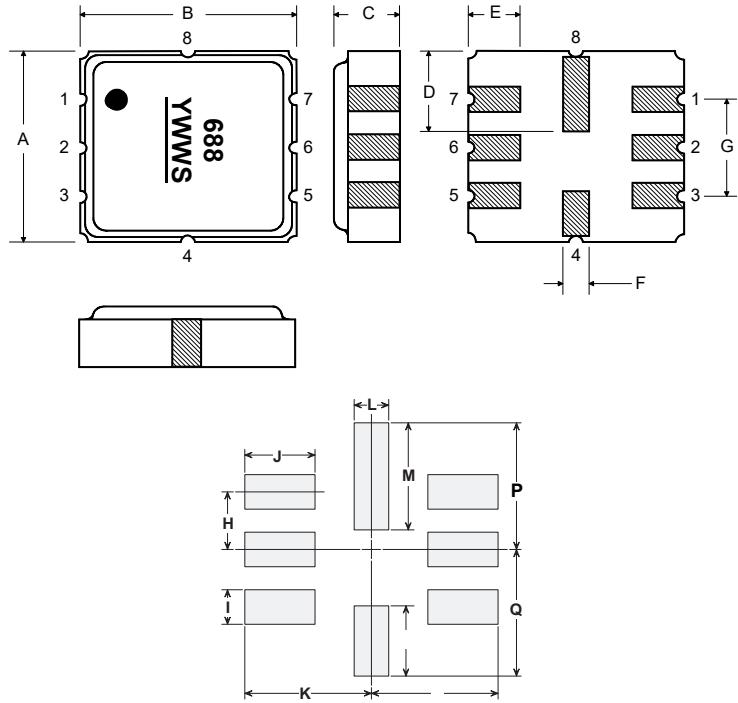
NOTES:

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

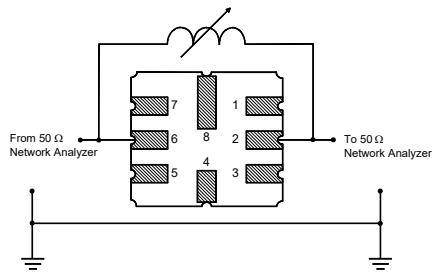
The SAW resonator is bidirectional and may be installed with either orientation. The two terminals are interchangeable and unnumbered. The callout NC indicates no internal connection. The NC pads assist with mechanical positioning and stability. External grounding of the NC pads is recommended to help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

Pin	Connection
1	NC
2	Terminal
3	NC
4	NC
5	NC
6	Terminal
7	NC
8	NC

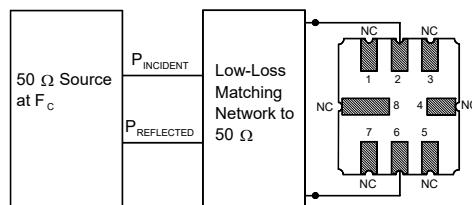


Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			0.050	
I		0.76			0.030	
J		1.55			0.061	
K		2.79			0.110	
L		0.76			0.030	
M		2.36			0.093	
N		1.55			0.061	
O		2.79			0.110	
P		2.79			0.110	
Q		2.79			0.110	

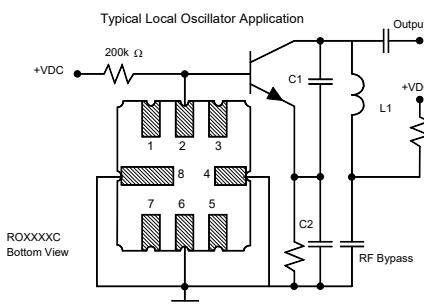
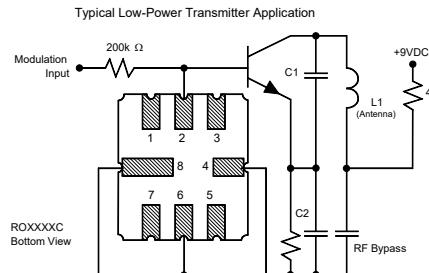
Parameter Test Circuit



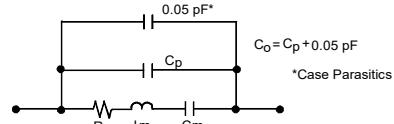
Power Test Circuit



Example Application Circuits

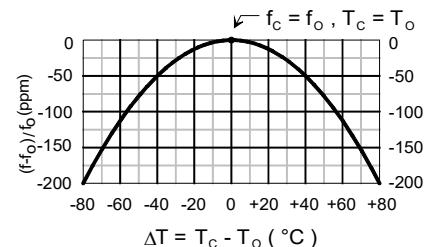


Equivalent RLC Model



Temperature Characteristics

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



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.

