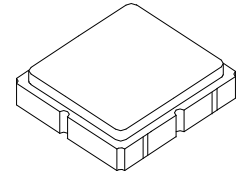


RO3075E

345.0 MHz SAW Resonator



SM3030-6 Case
3.0 X 3.0

- Ideal for 345 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

The RO3075E 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 fixed-frequency transmitters operating at 345 MHz. The RO3075E is designed for wireless remote control and security transmitters operating in the USA under FCC Part 15.

Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	0	dBm
DC Voltage	12	VDC
Storage Temperature Range	-40 to +125	°C
Operating Temperature Range	-40 to +105	°C
Soldering Temperature (10 seconds / 5 cycles maximum)	260	°C

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Frequency, +25 °C	Absolute Frequency	f_C	344.900		345.100	MHz
	Tolerance from 345.000 MHz	Δf_C			± 100	kHz
Insertion Loss	IL			1.4	2.2	dB
Quality Factor	Unloaded Q	Q_U		27000		
	50 Ω Loaded Q	Q_L		4200		
Temperature Stability	Turnover Temperature	T_O	10	25	35	°C
	Turnover Frequency	f_O		f_C		
	Frequency Temperature Coefficient	FTC		0.032		ppm/°C ²
Frequency Aging	Absolute Value during the First Year	$ f_A $		10		ppm/yr
DC Insulation Resistance between Any Two Terminals			1.0			M Ω
RF Equivalent RLC Model	Motional Resistance	R_M		18		Ω
	Motional Inductance	L_M		240		μ H
	Motional Capacitance	C_M		0.9		fF
	Shunt Static Capacitance	C_O		4.3		pF
Test Fixture Shunt Inductance	L_{TEST}			50		nH
Lid Symbolization: Y = Year, WW = Week, S = Shift				694, YWWS		
Standard Reel Quantity	Reel Size 7 Inch					500 Pieces / Reel
	Reel Size 13 Inch					3000 Pieces / Reel

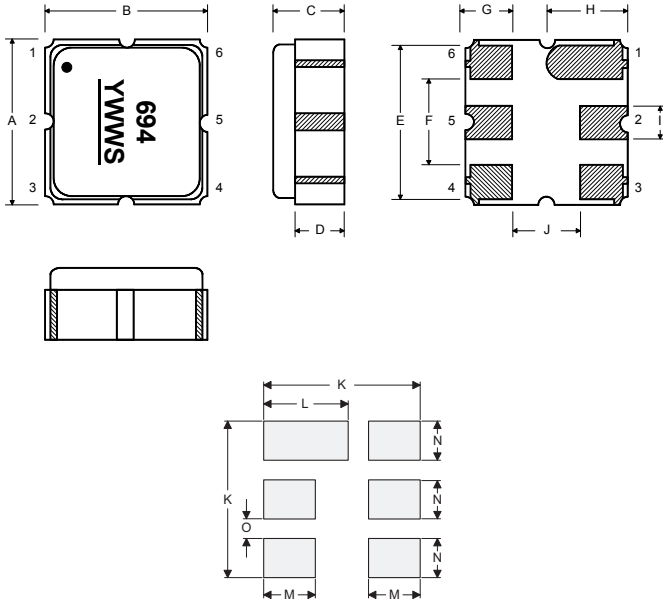
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.
NOTES:

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.

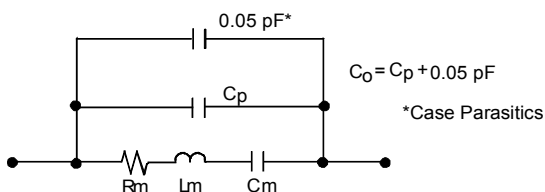
Pin	Connection
1	NC
2	Terminal
3	NC
4	NC
5	Terminal
6	NC



Case and Typical PCB Land Dimensions

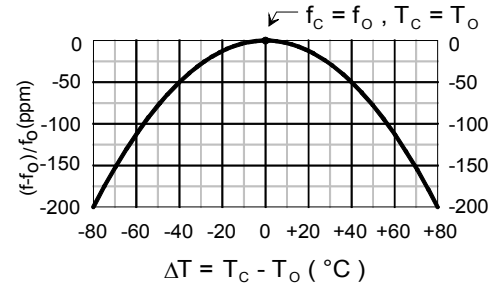
Ref	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	1.50	1.63	0.054	0.059	0.064
I	0.47	0.60	0.73	0.019	0.024	0.029
J	1.17	1.30	1.43	0.046	0.051	0.056
K		3.20			0.126	
L		1.70			0.067	
M		1.05			0.041	
N		0.81			0.032	
O		0.38			0.015	

Equivalent RLC Model



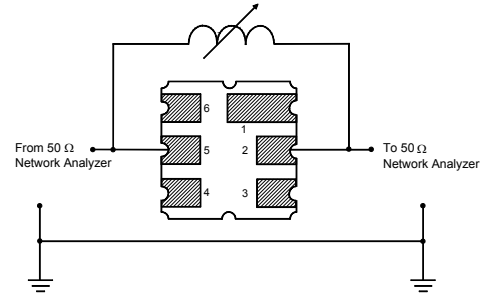
Temperature Characteristics

The curve shown accounts for resonator contribution only and does not include external LC component temperature effects.

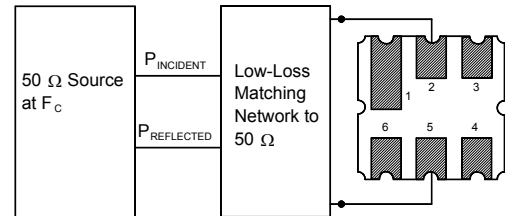


Characterization Test Circuit

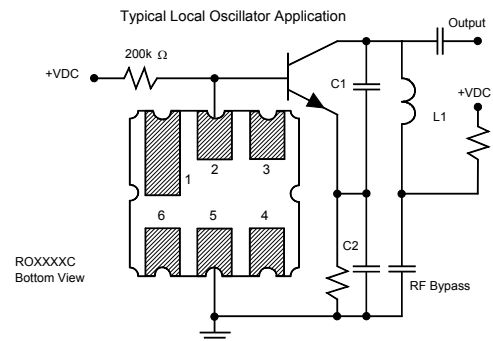
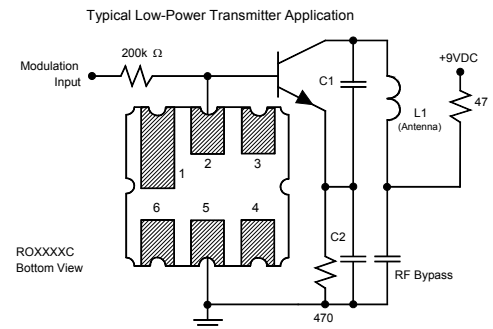
Inductor L_{TEST} is tuned to resonate with the static capacitance, C_0 , at F_c .



Power Dissipation Test



Example Application Circuits



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.

