



RFM Integrated Device, Inc.

PRODUCT SPECIFICATION

Part Number: RO3134E

RES, 1-PORT, 372.5 MHz +/-75
KHz. IL 2.0 dB

Preliminary

- **Designed for Low Power 372.5 MHz Transmitters**
- **Very Low Series Resistance**
- **Quartz Frequency Stability**
- **Miniature 3.0 x 3.0 mm Surface-mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

Automotive grade product



The RO3134E 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 304 MHz. This SAW is designed specifically for transmitters used in wireless security and remote control applications.

Absolute Maximum Ratings

Rating	Value	Units
CW RF Power Dissipation (See Typical Test Circuit)	0	dBm
DC Voltage Between Terminals (Observe ESD Precautions)	12	VDC
Case Temperature	-40 to +85	°C
Maximum Soldering Profile Temperature (10 s, 5 cycles maximum)	+260	°C

Electrical Characteristics

Characteristics	Units	Minimum	Typical	Maximum
Center frequency F_c	MHz	372.425	372.5	372.575
Insertion Loss IL	dB	-	1.1	2.0
Unload quality factor Q_u		-	8800	-
Ageing of f _c	ppm/yr	-	-	±10
Motional capacitance C1	fF	-	3.98	-
Motional inductance L1	µH	-	45.86	-
Motional resistance R1	Ohm	-	12.8	-
Parallel capacitance C_o	pF	-	5.55	-
Frequency Temperature coefficient (TC _f)	ppm/c*2	-	0.032	-
Turnover T _o	deg.C	-	25	-
Package size		SMD 3x3x1.1 mm		

Temperature dependence of f_c: $f_c(T_A) = f_c(T_O)(1 + TC_f(T_A - T_O)^2)$



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

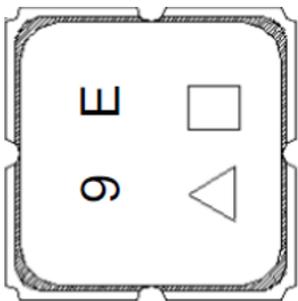
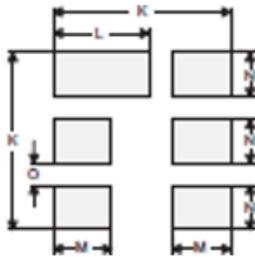
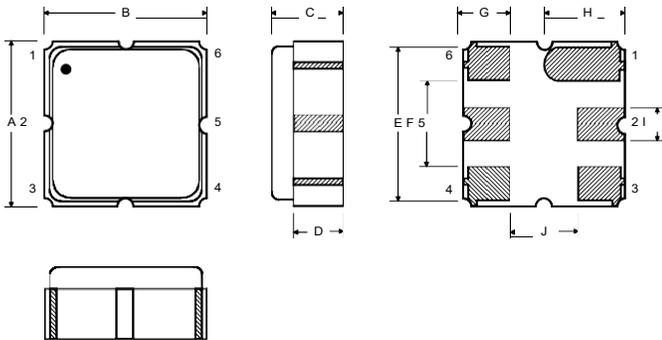
NOTES:

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



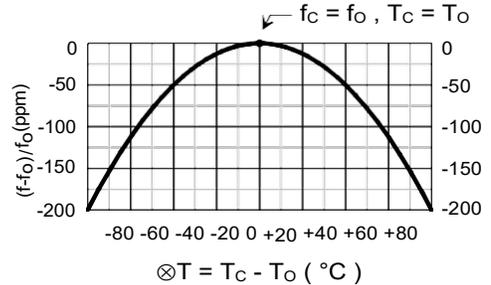
△ : Year Code
 □ : Date Code

Date code: provided by planner each year

Year code: 6 for 2006, 7 for 2007, ...

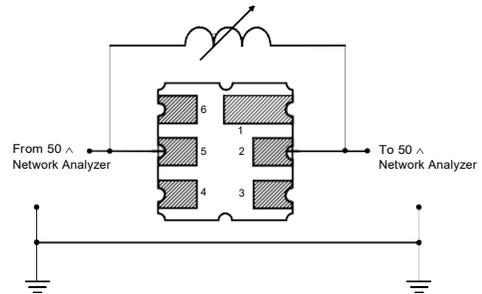
Temperature Characteristics

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

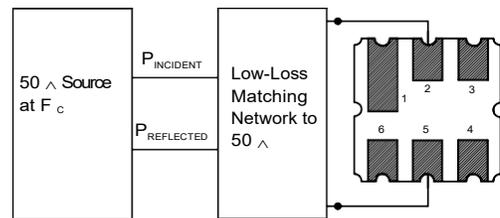


Characterization Test Circuit

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



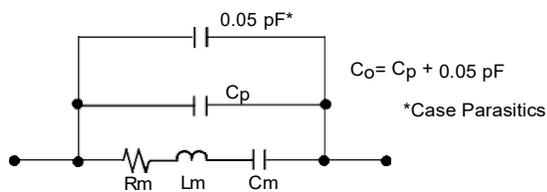
Power Dissipation Test



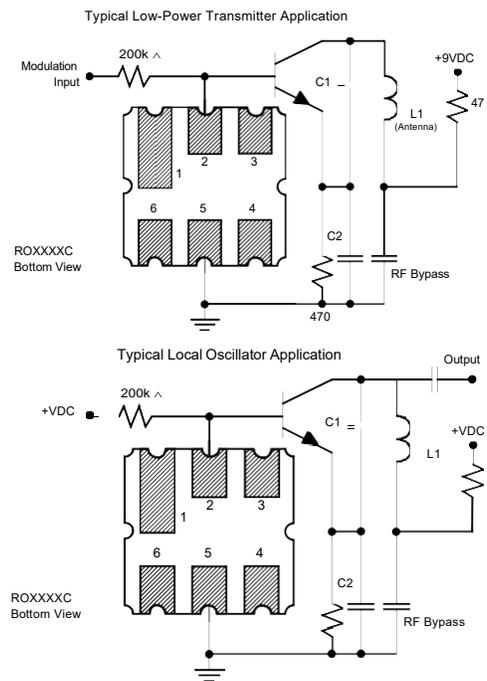
Case and Typical PCB Land Dimensions

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



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.

