

# Discontinued

RFM products are now  
Murata products.

- Ideal for 345 MHz Remote Control and Security Transmitters
- Very Low Series Resistance
- Quartz Stability
- Complies with Directive 2002/95/EC (RoHS)



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	$f_C$	2, 3, 4, 5	344.900		345.100	MHz
	$\Delta f_C$				±100	kHz
Insertion Loss	IL	2, 5, 6		1.4	2.2	dB
Quality Factor	Q <sub>U</sub>			27000		
	Q <sub>L</sub>			4200		
Temperature Stability	$T_O$	6, 7, 8	10	25	35	°C
	$f_O$			$f_C$		
	FTC			0.032		ppm/°C <sup>2</sup>
Frequency Aging	$ f_A $	1, 6		10		ppm/yr
DC Insulation Resistance between Any Two Terminals		5	1.0			MΩ
RF Equivalent RLC Model	$R_M$	5, 7, 9		18		Ω
	$L_M$			240		μH
	$C_M$			0.9		fF
	$C_O$	5, 6, 9		4.3		pF
Test Fixture Shunt Inductance	$L_{TEST}$	2, 7		50		nH
Lid Symbolization				694 // YWWS		
Standard Reel Quantity	Reel Size 7 Inch	10		500 Pieces / Reel		
	Reel Size 13 Inch			3000 Pieces / Reel		

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

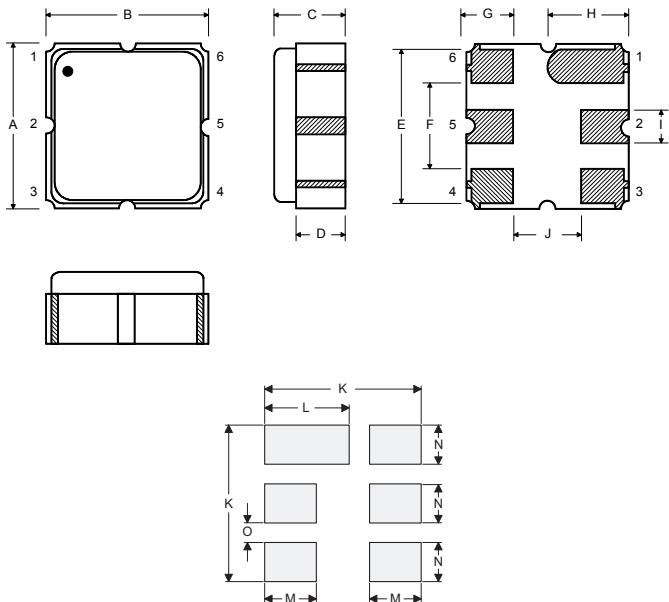
## NOTES:

- Frequency aging is the change in  $f_C$  with time and is specified at +65 °C or less. Aging may exceed the specification for prolonged temperatures above +65 °C. Typically, aging is greatest the first year after manufacture, decreasing in subsequent years.
- The center frequency,  $f_C$ , is measured at the minimum insertion loss point, IL<sub>MIN</sub>, with the resonator in the 50 Ω test system (VSWR ≤ 1.2:1). The shunt inductance, L<sub>TEST</sub>, is tuned for parallel resonance with C<sub>O</sub> at f<sub>C</sub>. Typically, f<sub>OSCILLATOR</sub> or f<sub>TRANSMITTER</sub> is approximately equal to the resonator f<sub>C</sub>.
- One or more of the following United States patents apply: 4,454,488 and 4,616,197.
- Typically, equipment utilizing this device requires emissions testing and government approval, which is the responsibility of the equipment manufacturer.
- Unless noted otherwise, case temperature T<sub>C</sub> = +25 ± 2 °C.
- The design, manufacturing process, and specifications of this device are subject to change without notice.
- Derived mathematically from one or more of the following directly measured parameters: f<sub>C</sub>, IL, 3 dB bandwidth, f<sub>C</sub> versus T<sub>C</sub>, and C<sub>O</sub>.
- Turnover temperature, T<sub>O</sub>, is the temperature of maximum (or turnover) frequency, f<sub>O</sub>. The nominal frequency at any case temperature, T<sub>C</sub>, may be calculated from:  $f = f_O [1 - FTC (T_O - T_C)^2]$ . Typically oscillator T<sub>O</sub> is approximately equal to the specified resonator T<sub>O</sub>.
- This equivalent RLC model approximates resonator performance near the resonant frequency and is provided for reference only. The capacitance C<sub>O</sub> is the static (nonmotional) capacitance between the two terminals measured at low frequency (10 MHz) with a capacitance meter. The measurement includes parasitic capacitance with "NC" pads unconnected. Case parasitic capacitance is approximately 0.05 pF. Transducer parallel capacitance can be calculated as: C<sub>P</sub> ≈ C<sub>O</sub> - 0.05 pF.
- Tape and Reel Standard Per ANSI / EIA 481.

## 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.

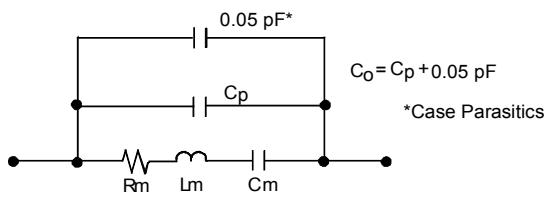
Pin	Connection
1	NC
2	Terminal
3	NC
4	NC
5	Terminal
6	NC



## Case and Typical PCB Land Dimensions

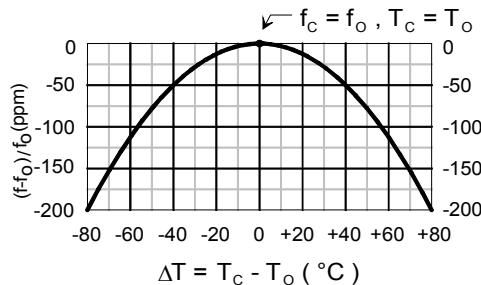
Ref	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	1.50	1.63	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



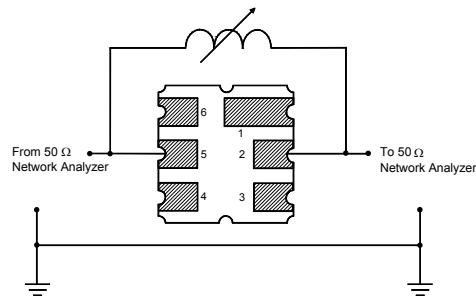
## Temperature Characteristics

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

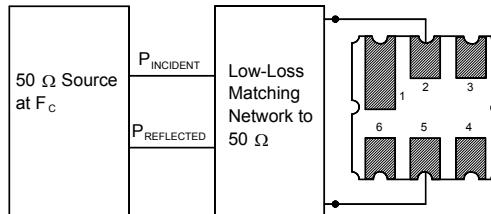


## Characterization Test Circuit

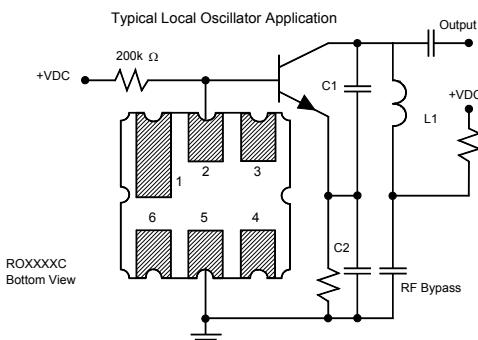
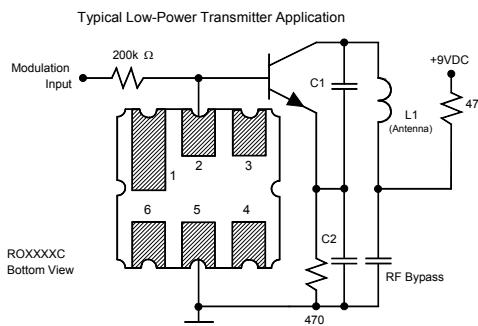
Inductor  $L_{TEST}$  is tuned to resonate with the static capacitance,  $C_O$ , at  $F_C$ .



## Power Dissipation Test



## Example Application Circuits



ООО "ЛайфЭлектроникс"

"LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибуторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибуторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помочь разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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