

# Oven Controlled Crystal Oscillators

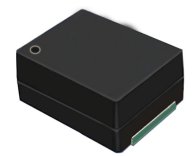
AOCJYR-10.000MHz-M5625LF



ESD Sensitive



RoHS / RoHS II Compliant



9.7 x 7.5 x 4.3 mm SMD

## Moisture Sensitivity Level (MSL) – 1

### OVERVIEW:

Abracon's AOCJYR series of World's Smallest Profile, Surface Mount- Ovenized Quartz Crystal Oscillators are based on Proprietary Mercury™ ASIC technology, patented by Rakon. This Advanced Technology coupled with Rakon's proprietary manufacturing techniques enable  $\pm 10$  ppb stability over  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ , with typical short-term aging of better than  $\pm 2$  ppb per day.

Sophisticated Integrated Oven Control architecture ensures fast warm-up time, while minimizes initial power consumption to 350mW typical at  $25^{\circ}\text{C}$ . Further, the integration of critical functionality improves overall product reliability by reducing FIT rates 10x relative to traditional discrete OCXOs.

The AOCJYR series is offered in Industry leading  $9.7 \times 7.5 \times 4.3$  mm SMT package, while AOCJYR-DIL is available in  $21.7 \times 13.08 \times 8.6$  mm leaded hermetic package.

### FEATURES:

- Compact package size:  $9.7 \times 7.5 \times 4.3$ mm
- Frequency stability over temperature as low as  $\pm 25$ ppb over  $-40$  to  $+85^{\circ}\text{C}$
- Low power consumption
- High reliability

### APPLICATIONS:

- Stratum 3
- Small Cells
- Switches and Routers
- Time & Frequency References
- SyncE and IEEE 1588

### STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Nominal Frequency	10.000			MHz	
Supply Voltage (Vdd)	3.135	3.3	3.465	V	
Input Power (warm-up)		1000		mW	
Input Power (steady-state)			400	mW	@ $25^{\circ}\text{C}$ still air
Operable Temperature Range	-40		85	$^{\circ}\text{C}$	
Storage Temperature Range	-55		+125	$^{\circ}\text{C}$	
Initial Frequency Tolerance @ $25^{\circ}\text{C}$ At time of shipment			$\pm 0.5$	ppm	See Note 1
Reflow Shift			$\pm 1$	ppm	After 1hr recovery
Frequency Stability over Operating Temperature Range in Still Air			$\pm 25$	ppb	Ref. to $(F_{\text{MAX}}+F_{\text{MIN}})/2$
Slope in Still Air			$\pm 2$	ppb/ $^{\circ}\text{C}$	Temperature ramp $1^{\circ}\text{C}/\text{minute max.}$
Holdover Stability		$<\pm 4$		ppb	24hrs, temperature variation $\leq \pm 1^{\circ}\text{C}$ . See Note 2
Free-run Accuracy			$\pm 4.6$	ppm	All causes, 20 years life, ref. to nominal frequency. Stratum III compliant
Stability vs. Supply Voltage Change		$\pm 10$		ppb	$\pm 5\%$ variation in Vdd, ref. to freq. @Vdd=3.3V
Load Coefficient		$\pm 10$		ppb	$\pm 5$ pF variation in load, ref. to freq. @ 15pF load
Frequency Aging (per day)		$<\pm 2$		ppb	See Note 2

# Oven Controlled Crystal Oscillators

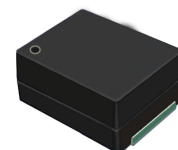
AOCJYR-10.000MHz-M5625LF



ESD Sensitive



RoHS / RoHS II Compliant



9.7 x 7.5 x 4.3 mm SMD

## STANDARD SPECIFICATIONS CONTINUED:

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Aging (long-term stability)	First Year			±1	ppm	
	20 Years			±3	ppm	
Warm-up Time			<3		minute	See Note 3
Root Allan Variance			$<1 \times 10^{-10}$			@25°C, $\tau=1.0s$
Acceleration Sensitivity			<2		ppb/g	Gamma vector of all 3 axes from 30Hz to 1500Hz
Output Type		LVCMOS				
High-level Output Voltage (V <sub>OH</sub> )		90%*V <sub>dd</sub>			V	
Low-level Output Voltage (V <sub>OL</sub> )				10%*V <sub>dd</sub>	V	
Output Load		10	15	20	pF	
Rise and Fall Time (t <sub>r</sub> , t <sub>f</sub> )				4	ns	
Duty Cycle		45		55	%	
Phase Noise @ 10MHz Carrier						
@ 1	Hz offse		-72		dBc / Hz	
@ 10	Hz offset		-98		dBc / Hz	
@ 100	Hz offset		-123		dBc / Hz	
@ 1,000	Hz offset		-142		dBc / Hz	
@ 10,000	Hz offset		-149		dBc / Hz	
@ 100,000	Hz offset		-150		dBc / Hz	
@ 1,000,000	Hz offset		-150		dBc / Hz	

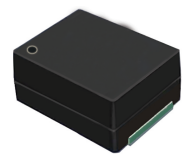
### Note:

1. The characteristics of the component may be temporarily affected by the processes of assembly and soldering. The frequency specifications apply 48 hours after assembly. Nominal conditions apply unless otherwise stated.
2. After 30 days of continuous operation.
3. Time needed for frequency to be within ±20ppb reference to frequency after 1hour, at 25°C. Parameter is assembly and operating history dependent

## CROSS REFERENCE INFORMATION:

AOCJYR-10.000MHZ-M5625LF is equivalent to Rakon P/N M5625LF.

# Oven Controlled Crystal Oscillators



9.7 x 7.5 x 4.3 mm SMD



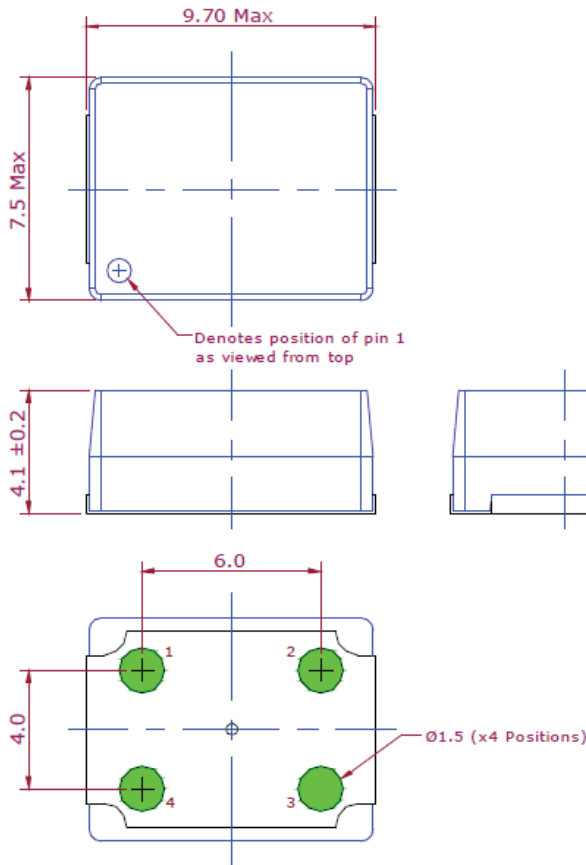
RoHS / RoHS II Compliant

## PART IDENTIFICATION:

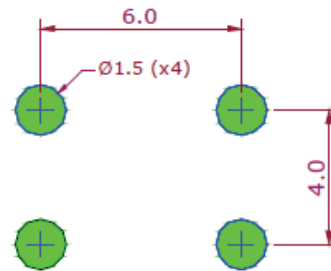
AOCJYR- 10.000MHz -M5625LF -

Packing
Blank: Bulk
T: Tape & Reel (1k/reel)

## OUTLINE DIMENSION:



### Recommended Land Pattern

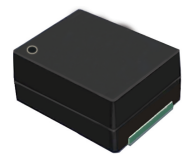


Pin	Function
1	NC
2	Ground
3	RF-output
4	Supply Voltage

Note: For correct operation, decouple the supply voltage with a 10µF capacitor close to the oscillator.

Dimension: mm

# Oven Controlled Crystal Oscillators



9.7 x 7.5 x 4.3 mm SMD

AOCJYR-10.000MHz-M5625LF

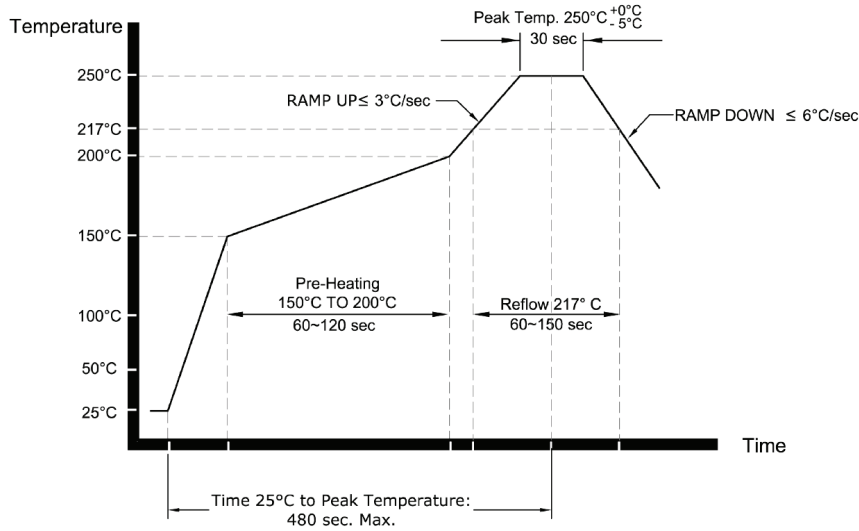


ESD Sensitive



RoHS / RoHS II Compliant

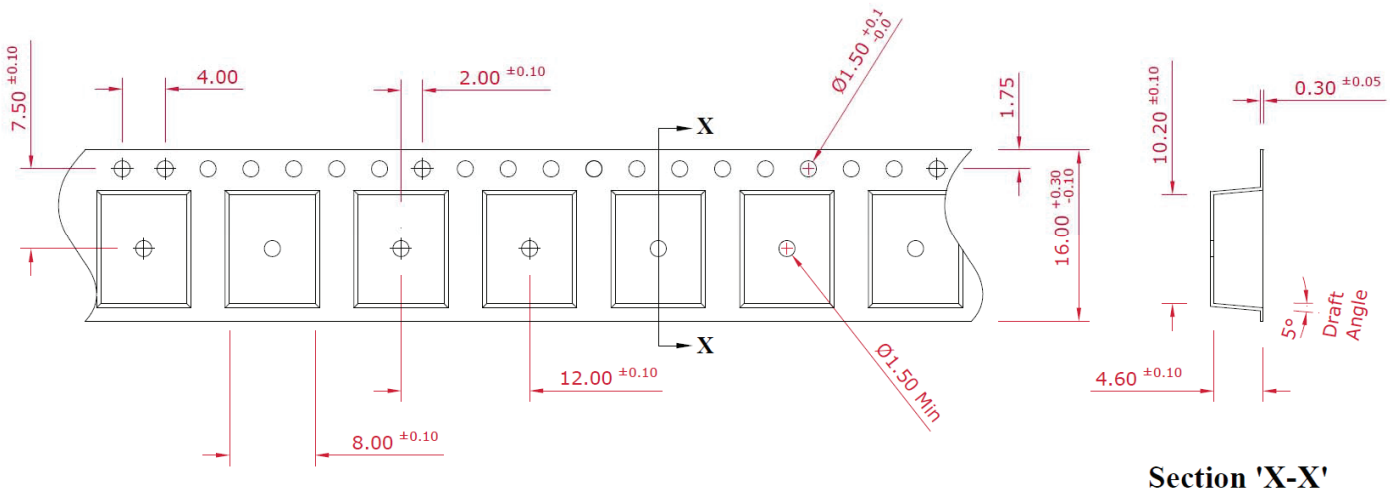
## REFLOW PROFILE:



## TAPE & REEL:

Packaging: 1000pcs/reel

Reel Size: Ø13"



Dimension: mm

**ATTENTION:** Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS  
ISO9001:2008  
CERTIFIED



**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale

30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

Revised: 08.18.14



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331