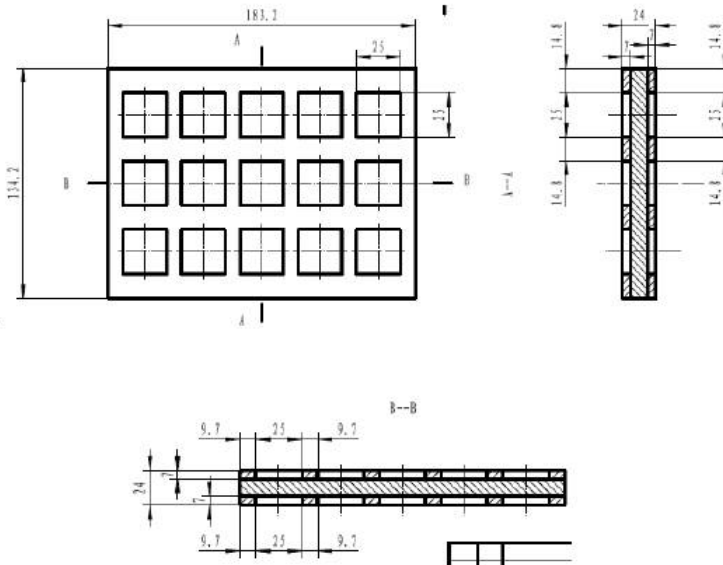


ECN/PCN No.: 4099

For Manufacturer			
Product Description: Oven Controlled Crystal Oscillator	Abrakon Part Number / Part Series: AOCJY	☐ Documentation only	☒ Series
		☒ ECN	☐ Part Number
Affected Revision: F	New Revision: G	☐ EOL	
		Application:	☐ Safety ☒ Non-Safety

Prior to Change:

Packaging: (15) units per tray

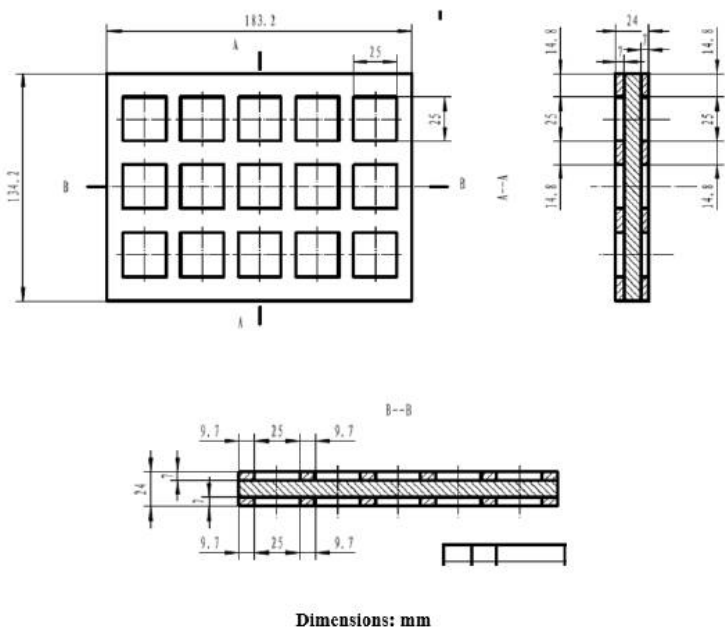
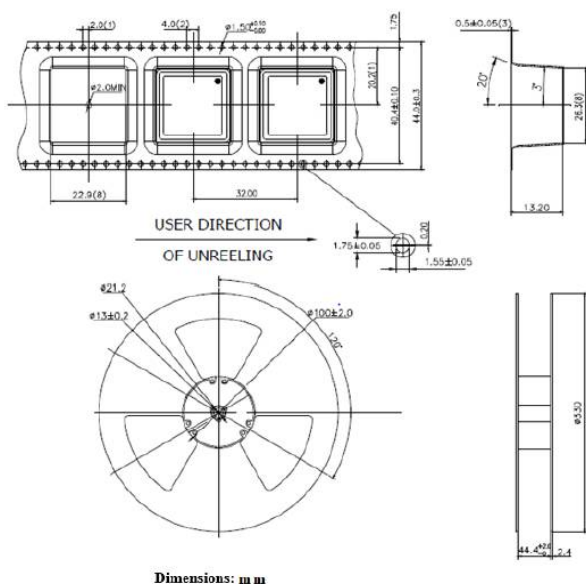


After Change:

Packaging

Tape & Reel=50 units
Tape & Reel packaging applies to MOQ>30 units

(15) units per tray
Tray packaging applies to MOQ less than or equal to 30 units



Cause/Reason for Change:

Standard product series review and upgrade. Updated packing method for higher volume quantities.

Change Plan

Effective Date:

04/25/2022

Additional Remarks:

N/A

Change Declaration:

This change does not affect the electrical nor mechanical performance of this product.

Issued Date:

04/25/2022

Issued By:

Brooke Cushman
Product Engineer

Issued Department:

Engineering

Approval:

Thomas Culhane
Engineering Director

Approval:

Reuben Quintanilla
Quality Director

Approval:

Ying Huang
Purchasing Director

For Abracon EOL only

Last Time Buy (if applicable):

N/A

Alternate Part Number / Part Series:

N/A

Additional Approval:

N/A

Additional Approval:

N/A

Additional Approval:

N/A

Customer Approval (If Applicable)

Qualification Status:

☐ Approved ☐ Not accepted

Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.

Customer Part Number:
Customer Project:
Company Name:
Company Representative:
Representative Signature:
Customer Remarks:

Oven Controlled Crystal Oscillator

AOCJY

Request Samples



Check Inventory



ESD Sensitive



25.4 x 22.1 x 12.7 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- 25.4 x 22.1 x 12.7 mm True SMT- RoHS Compliant Reflowable Package
- SC-Cut, High “Q” resonator-based design
- Either Sinewave or CMOS RF output
- Available with ± 30 ppb over -40°C to $+75^{\circ}\text{C}$ operating temperature Range
- Tighter Stabilities to ± 5.0 ppb over 0°C to $+50^{\circ}\text{C}$ also available
- Exceptional long-term Aging of ± 500 ppb over 10-Year Product Life
- Excellent close-in phase noise (-135 dBc/Hz Typical @100 Hz offset from 10MHz carrier)

Applications

- Cellular Infrastructure
- Radar Systems
- Test & Measurement Equipment
- GPS Tracking with precision hold-over accuracy
- WiMax / WLAN

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
RF Output					
Frequency	10.00		100.00	MHz	CMOS output
	10.00		100.00	MHz	Sinewave output
Standard Available Frequencies	10.00, 12.80, 13.00, 16.384, 20.00, 26.00, 38.40, 38.88, 40.00, 100.00 MHz				
Operable Temperature Range	0		50	$^{\circ}\text{C}$	See Stability Options
Frequency Stability Options					
0°C to $+50^{\circ}\text{C}$			± 5.00	ppb	Default Spec.
-20°C to $+70^{\circ}\text{C}$			± 10.00	ppb	Option “E”
-40°C to $+75^{\circ}\text{C}$			± 30.00	ppb	Option “F”
Frequency Stability vs. Supply Voltage ($V_{\text{dd}} \pm 5\%$)			± 20.00	ppb	
Warm-Up @ 25°C			± 100.00	ppb	In < 3-minutes
Power Consumption @ turn on			3.60	Watts	
Power Consumption Steady State			1.40	Watt	
Supply Voltage (V_{dd})	3.135	3.30	3.465	Volts	See Options
Reference Voltage (V_{ref}) (available as an output to facilitate oscillator tuning)	2.60	2.80	3.00	Volts	For $V_{\text{dd}} = +3.3\text{V}$ version
	4.30	4.50	4.70	Volts	For $V_{\text{dd}} = +5.0\text{V}$ version
Aging					
Daily aging (after 30 days)			± 1.0	ppb	
Yearly			± 100	ppb	
10-Years			± 500	ppb	

Oven Controlled Crystal Oscillator

AOCJY

Request Samples



Check Inventory



ESD Sensitive



25.4 x 22.1 x 12.7 mm

RoHS/RoHS II Compliant

MSL Level = 1

Parameters	Minimum	Typical	Maximum	Units	Notes
Waveform	LVC MOS				
Level "1" (Logic High)	0.9*Vdd			Volts	
Level "0" (Logic Low)			0.1*Vdd	Volts	
Load		15		pf	
Rise & Fall Time			5.0	ns	
Duty Cycle	45		55	%	
Waveform	Sinewave				
Peak Power	2.00			dBm	
Output Load		50		Ω	
Spectral Content					
Spurious Response			-70	dBc	
Phase Noise @ 10MHz Carrier (Vdd=3.3V)					
@ 1 Hz offset			-90	dBc / Hz	
@ 10 Hz offset			-120	dBc / Hz	
@ 100 Hz offset			-135	dBc / Hz	
@ 1,000 Hz offset			-145	dBc / Hz	
@ 10,000 Hz offset			-150	dBc / Hz	
@ 100,000 Hz offset			-150	dBc / Hz	
@ 1,000,000 Hz offset			-150	dBc / Hz	
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	± 0.7			ppm	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			k Ω	
Center Control Voltage	(Vdd/2) -0.5	Vdd/2	(Vdd/2) +0.5	Volts	

Oven Controlled Crystal Oscillator

AOCJY

Request Samples



Check Inventory



ESD Sensitive



25.4 x 22.1 x 12.7 mm

RoHS/RoHS II Compliant

MSL Level = 1

Options and Part Identification (left blank if standard):

AOCJY - - MHz - -

Supply Voltage Option

Blank: 3.30V±5%

A: 5.00V±5%

Frequency in MHz

Such as; 10.000 MHz

26.000 MHz

100.000 MHz

Temperature Options

Blank: ±5.0ppb/0°C to +50°C

E: ±10.0ppb/-20°C to +70°C

F: ±30.0ppb/-40°C to +75°C

RF Output Options

Blank: CMOS

SW: Sinewave

Oven Controlled Crystal Oscillator

AOCJY

Request Samples



Check Inventory

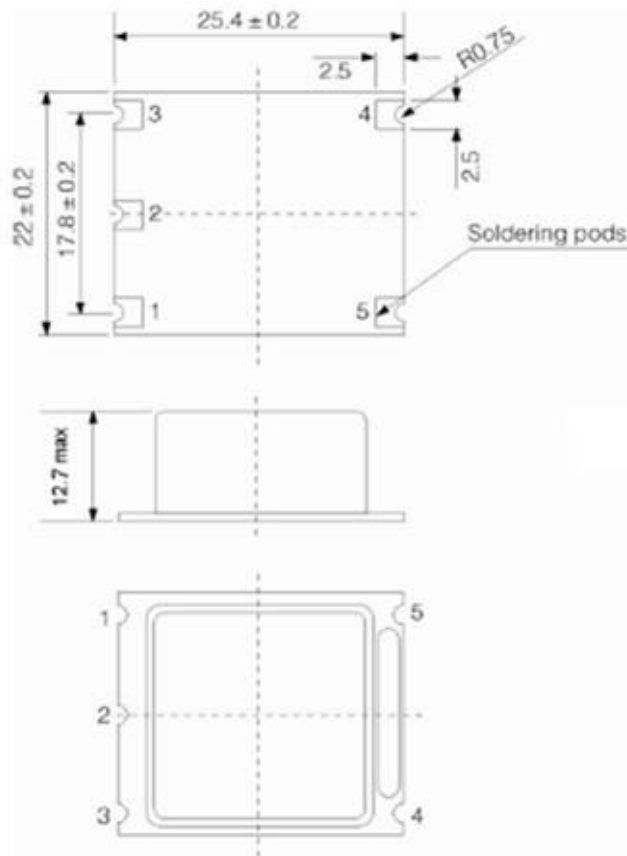


ESD Sensitive



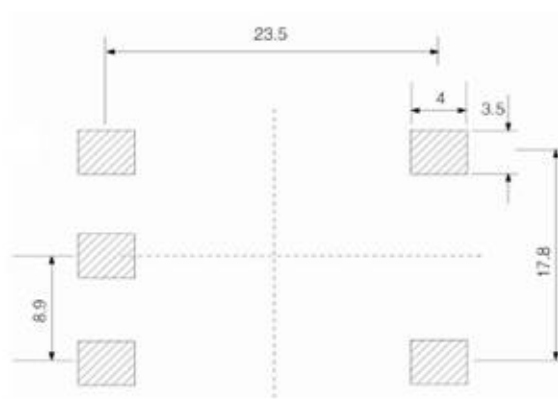
25.4 x 22.1 x 12.7 mm
RoHS/RoHS II Compliant
MSL Level = 1

Mechanical Dimensions



PIN	Function
1	Control Voltage
2	VREF
3	Supply Voltage
4	RF-output
5	Ground, Case

Recommended Land Pattern



Dimensions: mm



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Oven Controlled Crystal Oscillator

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25.4 x 22.1 x 12.7 mm

RoHS/RoHS II Compliant

MSL Level = 1

Reflow Profile [JEDEC J-STD-020]

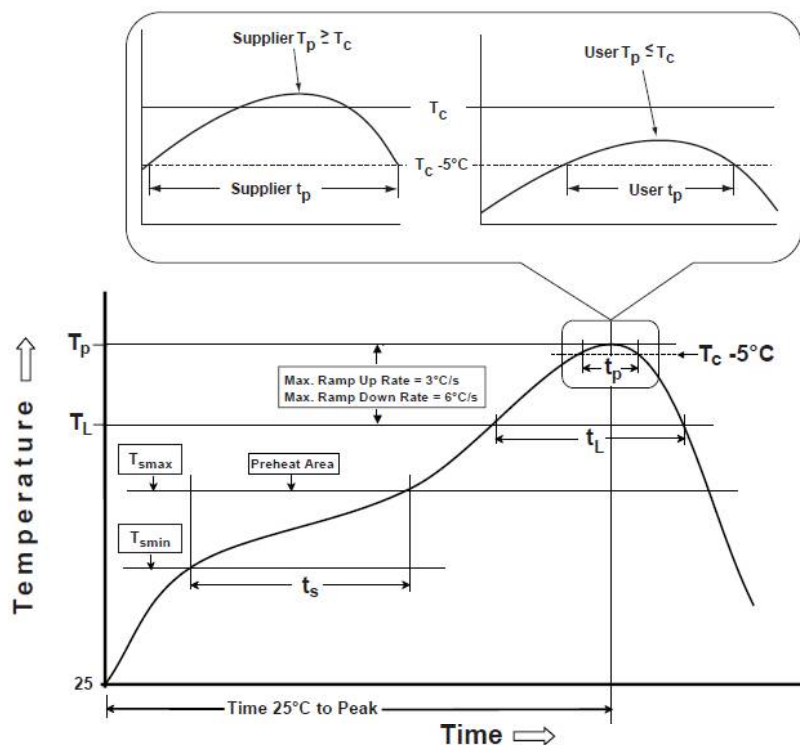


Table 1

SnPb Eutectic Process
Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process
Classification Temperatures (T_c)

Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_p)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_p)*	see Table 1	see Table 2
Time (t_p)** within 5°C of the specified classification temperature (T_c)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

Oven Controlled Crystal Oscillator

AOCJY

Request Samples



Check Inventory



25.4 x 22.1 x 12.7 mm

RoHS/RoHS II Compliant

MSL Level = 1



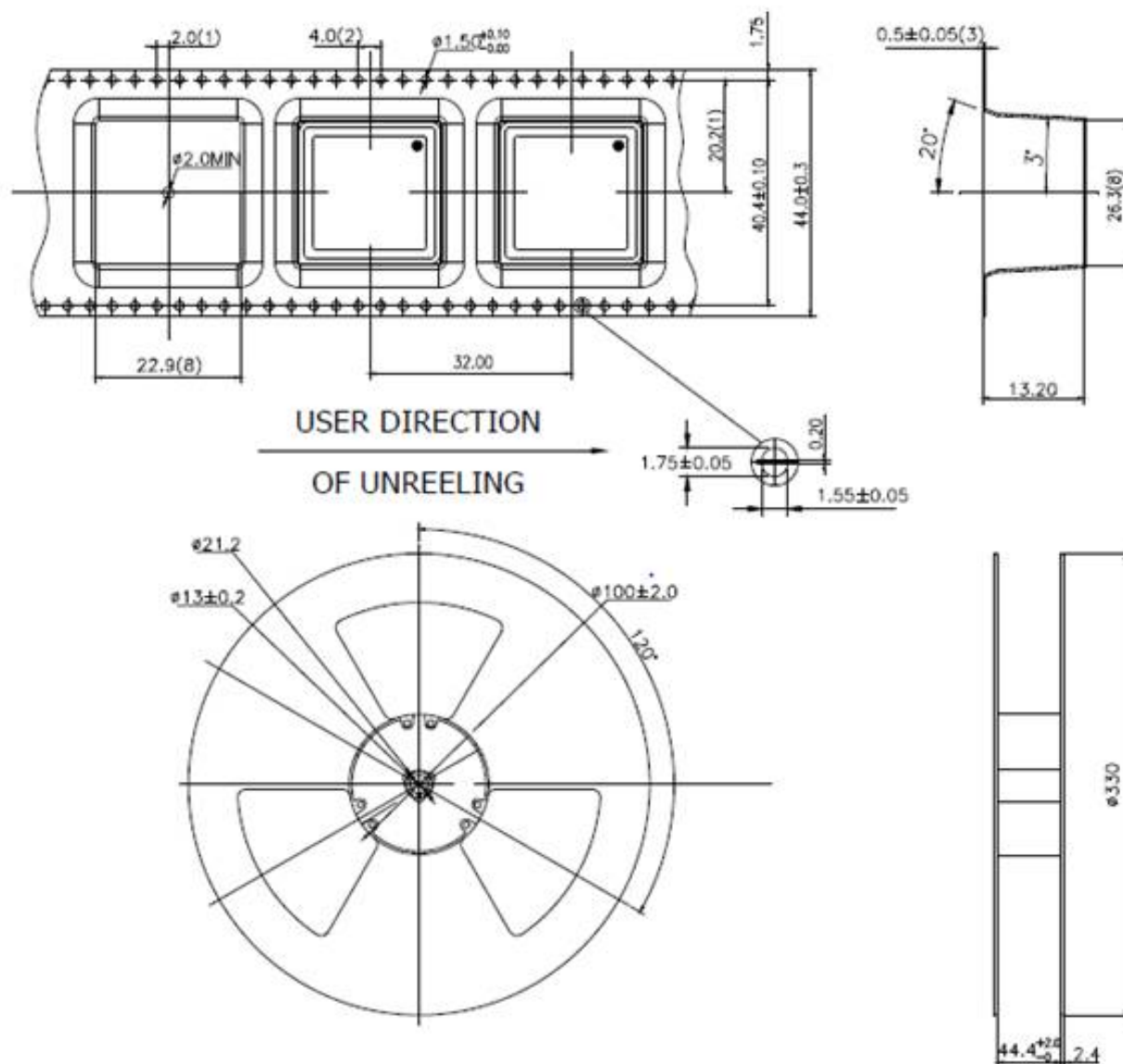
ESD Sensitive



Packaging

Tape & Reel=50 units

Tape & Reel packaging applies to MOQ>30 units



Dimensions: mm

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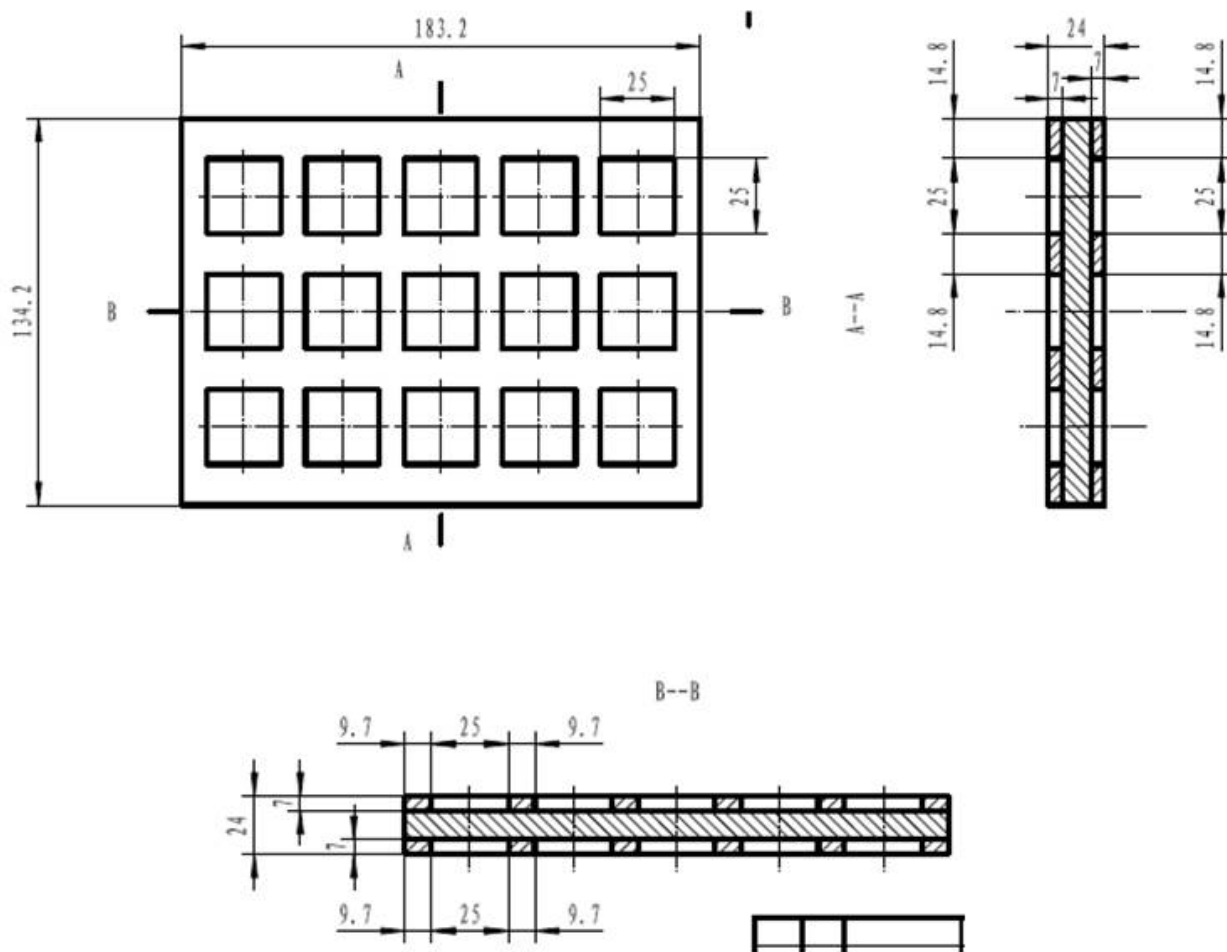
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Oven Controlled Crystal Oscillator

AOCJY

(15) units per tray

Tray packaging applies to MOQ less than or equal to 30 units



Dimensions: mm

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brand	affected part numbers	series	eco#	datasheet link
abracon	AOCJY-10.000MHZ	AOCJY	4099	https://abracon.com/Precisiontiming/AOCJY.pdf
abracon	AOCJY-10.000MHZ-E	AOCJY	4099	https://abracon.com/Precisiontiming/AOCJY.pdf
abracon	AOCJY-10.000MHZ-E-SW	AOCJY	4099	https://abracon.com/Precisiontiming/AOCJY.pdf
abracon	AOCJY-10.000MHZ-F	AOCJY	4099	https://abracon.com/Precisiontiming/AOCJY.pdf
abracon	AOCJY-10.000MHZ-F-SW	AOCJY	4099	https://abracon.com/Precisiontiming/AOCJY.pdf
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