

# OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY1 Series



20.8 x 13.2 x 8.2 mm

## FEATURES:

- 20.8 x 13.2 x 8.2 mm Leaded- RoHS Compliant Reflow-able Package
- AT-Cut, High “Q” resonator based design
- Either Sinewave or CMOS RF output
- Available with  $\pm 500$  ppb over  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  operating temperature Range
- Tighter Stabilities to  $\pm 50.0$  ppb over  $0^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  also available
- Exceptional long-term Aging of  $\pm 3$  ppm max. over 10-Year Product Life
- Excellent close-in phase noise ( $-145$  dBc/Hz Typical @1k Hz offset; 10MHz carrier)

## APPLICATIONS:

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

## STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
<b>RF Output</b>					
Frequency	10.00		100.00	MHz	Overall Frequency range
Standard Available Frequencies	10.00, 12.80, 13.00, 26.00, 38.88, 40.00, 100.00 MHz				
<b>Waveform</b>					
<b>CMOS</b>					
Level "1" (Logic High)	0.9*Vdd			Volts	
Level "0" (Logic Low)			0.1*Vdd	Volts	
Load		15		pf	
Rise & Fall Time			6.0	ns	
Duty Cycle	45		55	%	
<b>Sinewave</b>					
Peak Power	2.00			dBm	
Output Load		50		$\Omega$	
Short Term Stability		$1 \times 10^{-9}$		/second	Alan Variance
Operable Temperature Range	-40		75	$^{\circ}\text{C}$	See Stability Options
<b>Frequency Stability Options</b>					
0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$			$\pm 50.00$	ppb	Default Spec.
-20 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$			$\pm 200.00$	ppb	Option "E"
-40 $^{\circ}\text{C}$ to +75 $^{\circ}\text{C}$			$\pm 500.00$	ppb	Option "F"
<b>Frequency Stability vs. Supply Voltage (Vdd <math>\pm 5\%</math>)</b>					
Warm-Up @ 25 $^{\circ}\text{C}$			$\pm 500.00$	ppb	In $\leq 3$ -minutes
Power Consumption @ turn on			2.00	Watts	
Power Consumption Steady State			1.00	Watt	
Supply Voltage (Vdd)	3.13	3.30	3.46	Volts	See Options
<b>Aging</b>					
Yearly			$\pm 500$	ppb	
10-Years			$\pm 3.00$	ppm	
Supply Voltage Variation			$\pm 50$	ppb	VDD $\pm 5\%$ change
<b>Spectral Content</b>					
Spurious Response			-35	dBc	
<b>Phase Noise (10MHz Carrier) @ 5V</b>					
@ 10 Hz offset			-90	dBc / Hz	
@ 100 Hz offset			-120	dBc / Hz	
@ 1,000 Hz offset			-145	dBc / Hz	
@ 10,000 Hz offset			-150	dBc / Hz	
<b>Electrical Frequency Adjustment</b>					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	$\pm 5.00$			ppm	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			k $\Omega$	
Center Control Voltage	(Vdd/2) -0.5	Vdd/2	(Vdd/2) +0.5	Volts	
Control Port Linearity		$\pm 10$		%	
Storage Temperature	-40		+100	$^{\circ}\text{C}$	

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RoHS / RoHS II Compliant



20.8 x 13.2 x 8.2 mm

## OPTIONS AND PART IDENTIFICATION (Left blank if standard)

AOCJY1 -  -  MHz -  -

### Supply Voltage Option

Blank: 3.30V
A: 5.00V

### Frequency in MHz

Such as; 10.000 MHz
26.000 MHz
100.000 MHz

### Temperature Options

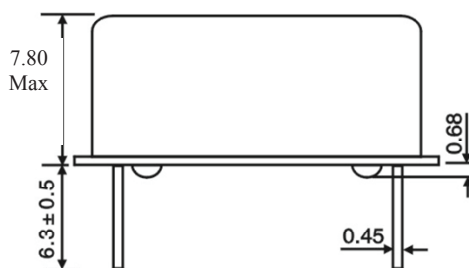
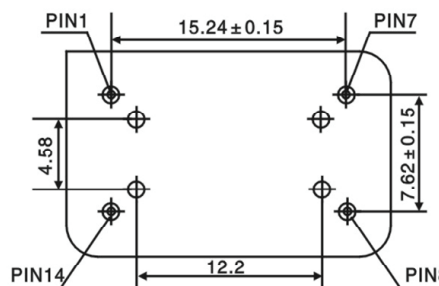
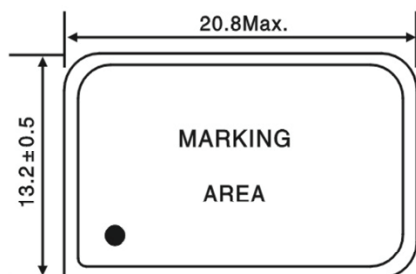
E: -20°C to +70°C
F *: -40°C to +75°C

\* For temp. option "F", 100MHz is only available with CMOS output

### RF Output Options

Blank: CMOS
SW: Sinewave

## OUTLINE DIMENSIONS



Pin	Function
1	Control Voltage
7	GND
8	Output
14	Power Supply

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ESD Sensitive

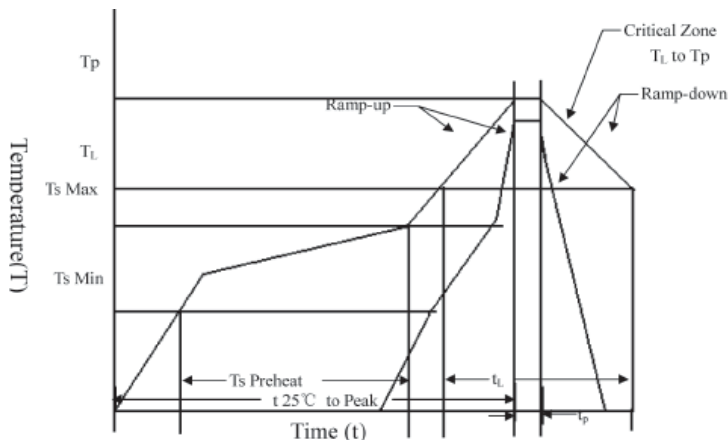


RoHS / RoHS II Compliant



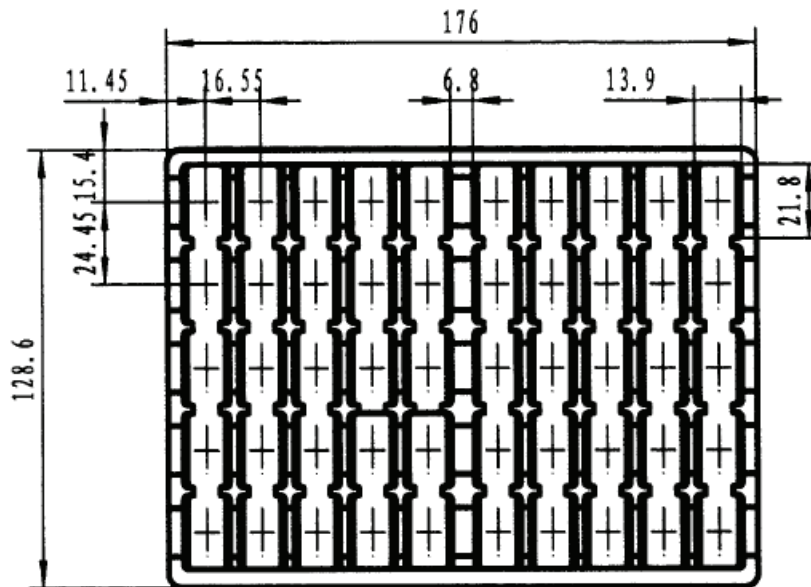
20.8 x 13.2 x 8.2 mm

## REFLOW PROFILE:



$T_S$ max to $T_L$ (Ramp-up Rate)	3°C/second max.
Preheat	
Temperature Min. ( $T_S$ Min.)	150°C
Temperature Typical ( $T_S$ Typ.)	175°C
Temperature Max. ( $T_S$ Max.)	200°C
Time ( $t_s$ )	60 ~ 180 seconds
Ramp-up rate ( $T_L$ to $T_p$ )	3°C/second max.
Time Maintained Above:	
--Temperature ( $T_L$ )/Time ( $T_L$ )	217°C/60 ~ 150 seconds
Peak Temperature ( $T_p$ )	250°C max. for 10 seconds
Target Peak Temperature ( $T_p$ Target)	250°C +0/-5°C
Time within 5°C of actual peak ( $t_p$ )	20 ~ 40 seconds
Ramp-down Rate	6°C/second max.
Tune 25°C to Peak Temperature (t)	8 minutes max.

## PACKAGING: (50) units per tray



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