

OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY1 Series



ESD Sensitive



RoHS / RoHS II Compliant



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 ± 500 ppb over -40°C to $+75^{\circ}\text{C}$ operating temperature Range
- Tighter Stabilities to ± 50.0 ppb over 0°C to $+50^{\circ}\text{C}$ also available
- Exceptional long-term Aging of ± 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
RF Output					
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				
Waveform					
CMOS					
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	%	
Sinewave					
Peak Power	2.00			dBm	
Output Load		50		Ω	
Short Term Stability		1×10^{-9}		/second	Alan Variance
Operable Temperature Range	-40		75	$^{\circ}\text{C}$	See Stability Options
Frequency Stability Options					
0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$			± 50.00	ppb	Default Spec.
-20 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$			± 200.00	ppb	Option "E"
-40 $^{\circ}\text{C}$ to +75 $^{\circ}\text{C}$			± 500.00	ppb	Option "F"
Frequency Stability vs. Supply Voltage (Vdd $\pm 5\%$)					
Warm-Up @ 25 $^{\circ}\text{C}$			± 500.00	ppb	In ≤ 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
Aging					
Yearly			± 500	ppb	
10-Years			± 3.00	ppm	
Supply Voltage Variation			± 50	ppb	VDD $\pm 5\%$ change
Spectral Content					
Spurious Response			-35	dBc	
Phase Noise (10MHz Carrier) @ 5V					
@ 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	
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	± 5.00			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	
Control Port Linearity		± 10		%	
Storage Temperature	-40		+100	$^{\circ}\text{C}$	

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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

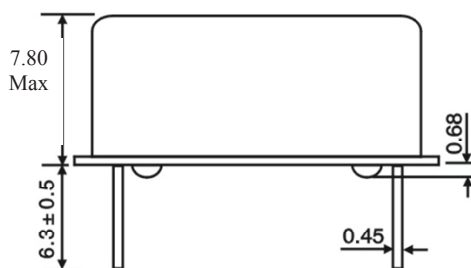
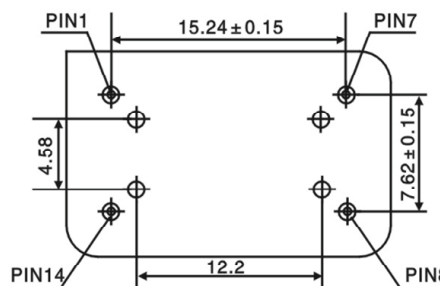
E: -20°C to +70°C
F *: -40°C to +75°C

* 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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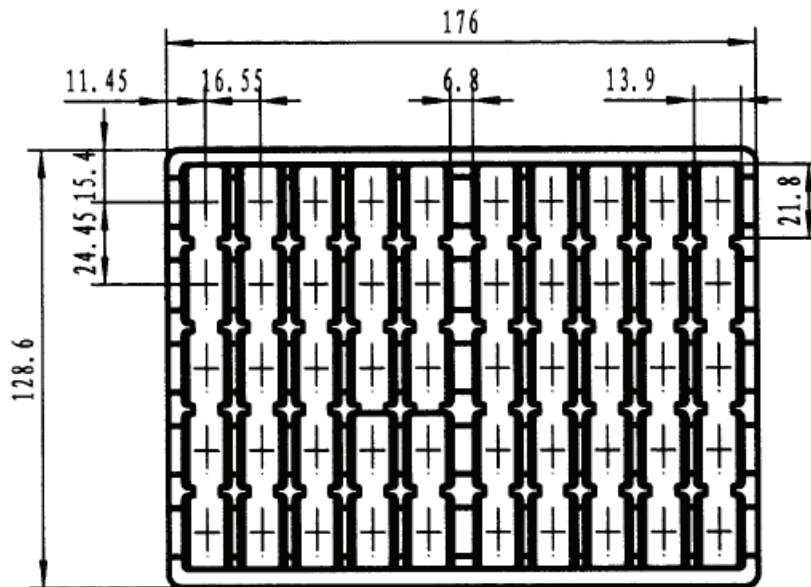
20.8 x 13.2 x 8.2 mm

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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