OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY2 Series

ESD Sensitive

RoHS / RoHS II Compliant

21.0 x 21.0 x 11.0 mm

FEATURES:

- 21.0 x 21.0 x 11.0 mm Leaded- RoHS Compliant Reflow-able Package
- SC-Cut, High "Q" resonator based design
- Either Sinewave or CMOS RF output
- Available with ±30 ppb over -40°C to +75°C operating temperature range
- Tighter Stabilities to ±5.0 ppb over 0°C to +50°C also available
- Exceptional long-term Aging of ±500 ppb max. over 10-Year Product Life
- Excellent close-in phase noise (-140 dBc/Hz Max. @100Hz 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	%	
Waveform	**Sinewave**				
Peak Power	2.00			dBm	
Output Load		50		Ω	
Short Term Stability		**$2x10^{-10}$**		**/second**	**Alan Variance**
Operable Temperature Range	-40		75	° C	***See Stability Options***
Frequency Stability Options					
0° C to +50°C ***(Note #1)***			±5.00	ppb	Default Spec.
-20° C to +70°C			±10.00	ppb	Option "E"
-40° C to +75°C			±30.00	ppb	Option "F"
Frequency Stability vs. Supply Voltage (Vdd ± 5%)			±5.00	ppb	
Frequency Stability vs. Load Variation (± 10%)			±5.00	ppb	
Warm-Up @ 25 °C			±100.00	ppb	In ≤ 3-minutes
Power Consumption @ turn on			3.00	Watts	
Power Consumption Steady State			1.00	Watts	
Supply Voltage (Vdd)	3.13	3.30	3.46	Volts	***See Options***

Note #1: ±5.00 ppb stability is only available for F0 ≤ 40MHz. For frequencies above 40MHz, the best available frequency stability is ±10.00 ppb over -20°C to +70°C

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STANDARD SPECIFICATIONS - continued.

Parameters	Minimum	Typical	Maximum	Units	Notes
Aging					
Daily			±1.0	ppb	
First Year			±100	ppb	
10-Years			±500	ppb	
Spectral Content					
Spurious Response			-35	dBc	
Phase Noise (10MHz Carrier) @ 5V					
@ 1 Hz offset			-90	dBc	
@ 10 Hz offset			-120	dBc	
@ 100 Hz offset			-140	dBc	
@ 1,000 Hz offset			-145	dBc	
@ 10,000 Hz offset			-150	dBc	
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	±0.70			ppm	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			kΩ	Control Voltage Port Impedance
Center Control Voltage	(Vdd/2) -0.5	Vdd/2	(Vdd/2) +0.5	Volts	Center Control Voltage
Reference Voltage (Vdd=3.3V)	2.70	2.80	2.90	Volts	Output @ Pin#5
Reference Voltage (Vdd=5.0V)	4.40	4.50	4.60	Volts	Output @ Pin#5
Storage Temperature	-40		+100	° C	

OPTIONS AND PART IDENTIFICATION (Left blank if standard)

AOCJY2 - ☐ - ☐ 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

RF Output Options
Blank : CMOS
SW : Sinewave

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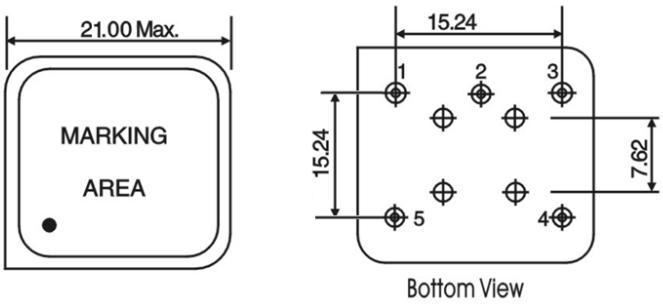
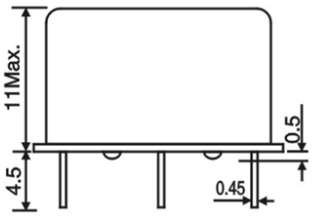
OUTLINE DIMENSIONS

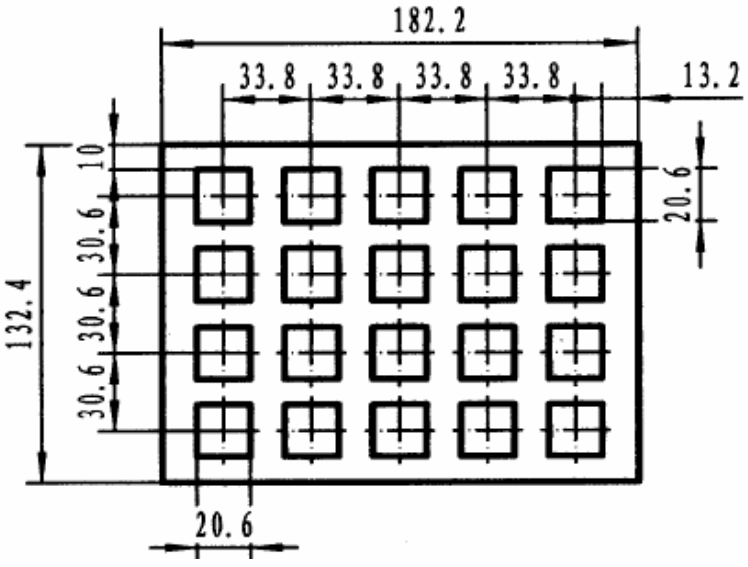




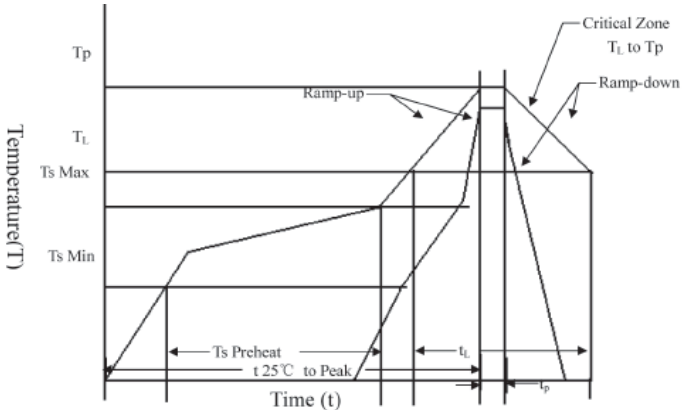
PIN	FUNCTION:
1	Power Supply
2	Output
3	GND
4	Control Voltage
5	Reference Voltage/NC

Unit:mm

PACKAGING: (20) units per tray



REFLOW PROFILE:



T_S max to T_L (Ramp-up Rate)	3°C/second max.
Preheat Temperature Min. (T_S Min.) Temperature Typical (T_S Typ.) Temperature Max. (T_S Max.) Time (t_S)	 150°C 175°C 200°C 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.

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