OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY4 Series

36.1x 27.2 x 13mm

Pb RoHS Compliant

FEATURES:

- 36.1x 27.2 x 13mm Leaded- RoHS Compliant Reflow-able Package
- SC-Cut, High "Q" resonator based design
- Either Sinewave or CMOS RF output
- Available with ±10 ppb over -40°C to +75°C operating temperature Range
- Tighter Stabilities to ±2.0 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 Typical @100 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		40.00	MHz	Overall Frequency range
Standard Available Frequencies	10.00, 12.80, 13.00, 26.00, 38.88, 40.00 MHz				
Waveform	**CMOS**				
Level "1" (Logic High)	4.50			Volts	
Level "0" (Logic Low)			0.50	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		**$1x10^{-10}$**		**/second**	**Alan Variance**
Operable Temperature Range	-40		75	° C	***See Stability Options***
Frequency Stability Options					
0° C to +50°C ***(Note #1)***			±2.00	ppb	Default Spec.
-20° C to +70°C			±10.00	ppb	Option "E"
-40° C to +75°C			±10.00	ppb	Option "F"
Frequency Stability vs. Supply Voltage (Vdd ± 5%)			±1.00	ppb	
Frequency Stability vs. Load Variation (± 10%)			±1.00	ppb	
Warm-Up @ 25 °C			±100.00	ppb	In ≤ 3-minutes
Power Consumption @ turn on			4.00	Watts	
Power Consumption Steady State			1.50	Watts	
Supply Voltage (Vdd)	4.75	5.00	5.25	Volts	***See Options***

Note #1: ±2.00 ppb stability is only available for F0 ≤ 13MHz. For frequencies above 13MHz, 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		5.00	Volts	
Frequency Pull Range	±0.700			ppm	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			kΩ	
Center Control Voltage	2.00	2.50	3.00	Volts	
Control Port Linearity		±10		%	
Reference Voltage (Vdd=5.0V)	4.40	4.50	4.60	Volts	Output @ Pin#2
Reference Voltage (Vdd=12.0V)	4.90	5.00	5.10	Volts	Output @ Pin#2
Storage Temperature	-40		+100	° C	

OPTIONS AND PART IDENTIFICATION (Left blank if standard)

AOCJY4 - ☐ - ☐☐☐☐☐ MHz - ☐ - ☐☐

Supply Voltage Option
A: 5.00V
B: 12.00V

Frequency in MHz
Such as; 10.000 MHz
26.000 MHz
40.000 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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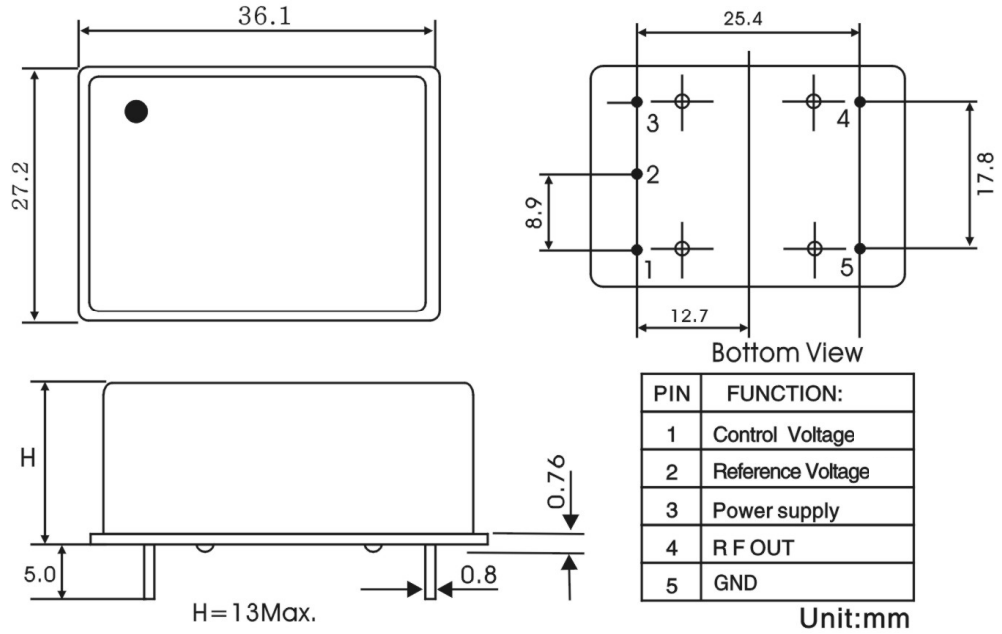
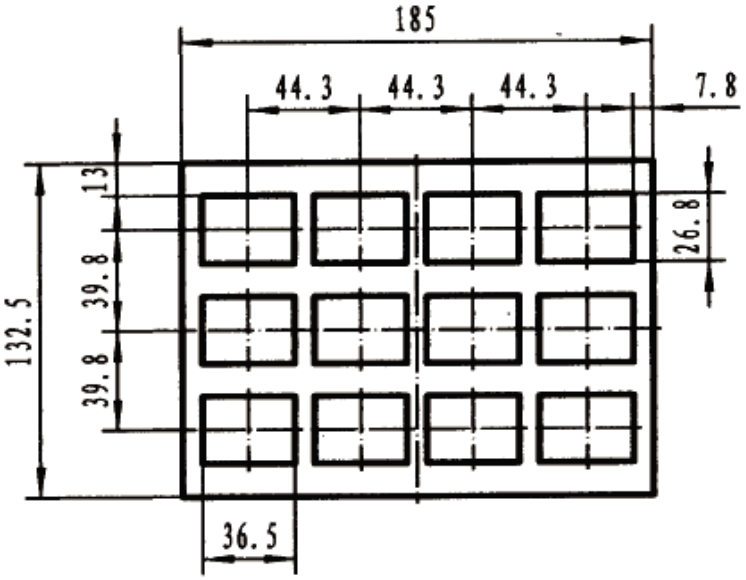
OUTLINE DIMENSIONS



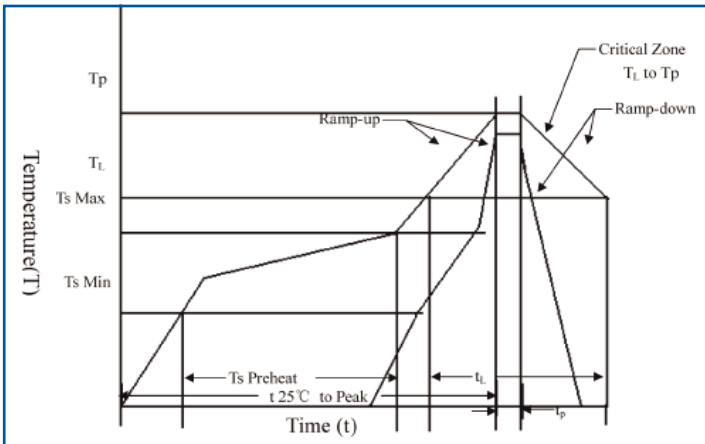
PIN	FUNCTION:
1	Control Voltage
2	Reference Voltage
3	Power supply
4	R F OUT
5	GND

Unit:mm

PACKAGING: 12 pcs/tray



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.

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.

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