

OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY3 Series



RoHS
Compliant



25.4x 25.4 x 13.0 mm

FEATURES:

- 25.4x 25.4 x 13.0 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 $+75^{\circ}\text{C}$ 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 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		100.00	MHz	Overall Frequency Range (Note #1)
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	(Note #2)
Level "0" (Logic Low)			0.1*Vdd	Volts	(Note #2)
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		1×10^{-10}		/second	Alan Variance
Operable Temperature Range	-40		75	$^{\circ}\text{C}$	See Stability Options
Frequency Stability Options					
0 $^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ (Note #3)			± 5.00	ppb	Default Spec.
-20 $^{\circ}\text{C}$ to $+70^{\circ}\text{C}$			± 10.00	ppb	Option "E"
-40 $^{\circ}\text{C}$ to $+75^{\circ}\text{C}$			± 30.00	ppb	Option "F"
Frequency Stability vs. Supply Voltage (Vdd $\pm 5\%$)			± 2.00	ppb	
Frequency Stability vs. Load Variation ($\pm 10\%$)			± 2.00	ppb	
Warm-Up @ 25 $^{\circ}\text{C}$			± 30.00	ppb	In ≤ 3 -minutes
Power Consumption @ turn on			3.60	Watts	
Power Consumption Steady State			1.20	Watts	
Supply Voltage (Vdd)	3.13	3.30	3.46	Volts	See Options

Note #1: Carrier frequency 100.000MHz is not offered @ Vdd=12.0V

Note #2: When Vdd=12.0V; Level "1" = 4.50 V minimum; Level "0" = 0.50V maximum

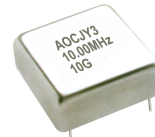
Note #3: ± 5.00 ppb stability is only available for $F_0 \leq 40\text{MHz}$. For frequencies above 40MHz, the best available frequency stability is ± 10.00 ppb over -20°C to $+70^{\circ}\text{C}$

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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			-155	dBc	
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	±0.700			ppm	
Frequency Pull Slope		Positive			
Control Voltage Port Impedance	10			kΩ	
Center Control Voltage (Note #4)	(Vdd/2) -0.5	Vdd/2	(Vdd/2) +0.5	Volts	Center Control Voltage
Control Port Linearity		±10		%	
Reference Voltage (Vdd=3.3V)	2.70	2.80	2.90	Volts	Output @ Pin#4
Reference Voltage (Vdd=5.0V)	4.40	4.50	4.60	Volts	Output @ Pin#4
Reference Voltage (Vdd=12.0V)	4.90	5.00	5.10	Volts	Output @ Pin#4
Storage Temperature	-40		+100	°C	

Note #4: When Vdd=12.0V, Control Voltage Range is 0.0V to 5.0V and therefore, the Center Control Voltage is (2.50V±0.50V)

OPTIONS AND PART IDENTIFICATION (Left blank if standard)

AOCJY3 - - MHz - -

Supply Voltage Option

Blank: 3.30V

A: 5.00V

B: 12.00V(*)

(*) Frequency Range limited to 10 – 40MHz

RF Output Options

Blank: CMOS

SW: Sinewave

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



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REVISED: 07/05/2018

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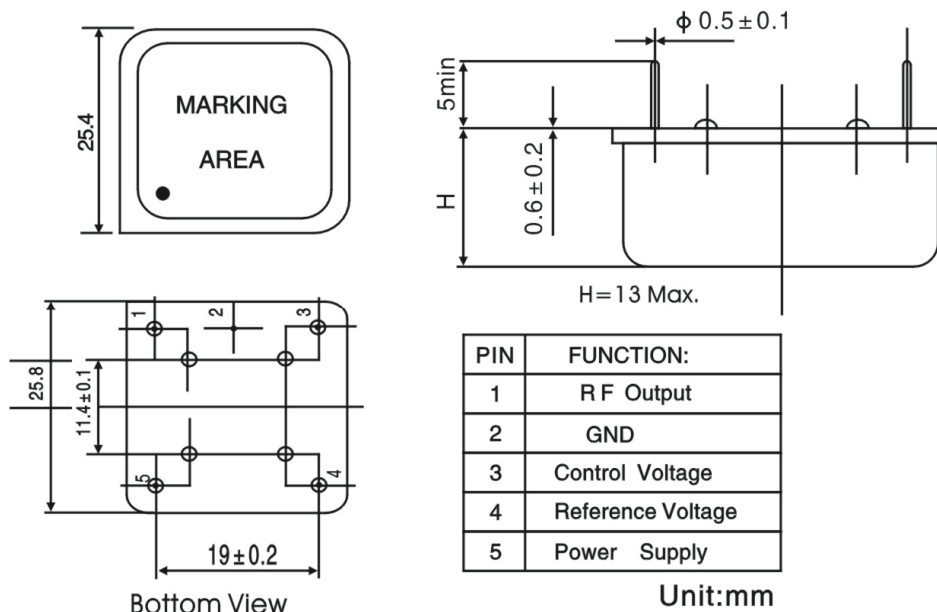


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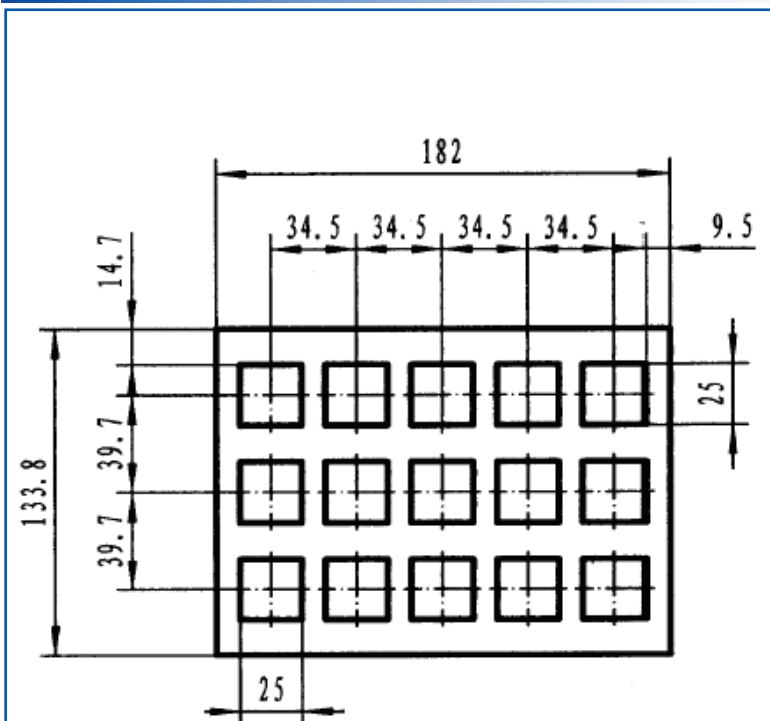


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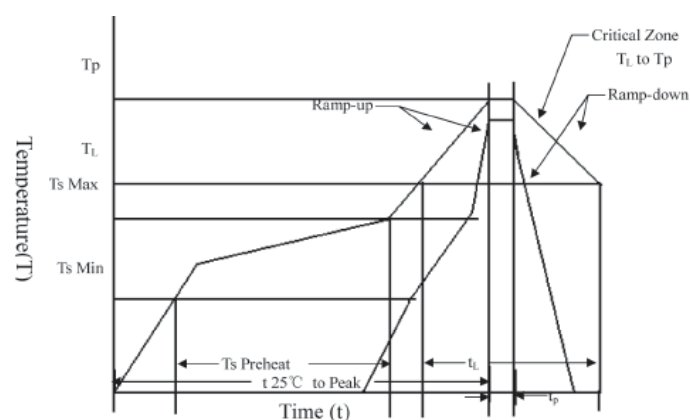
OUTLINE DIMENSIONS



PACKAGING: 15 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 $\pm$ 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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