

SMD OVEN CONTROLLED CRYSTAL OSCILLATOR

AOCJY Series



25.4 x 22.1 x 12.7 mm

FEATURES:

- 25.4 x 22.1 x 12.7 mm True SMT- 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 over 10-Year Product Life
- Excellent close-in phase noise (-135 dBc/Hz Typical @100 Hz offset from 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	1.00		160.00	MHz	CMOS output
	1.00		100.00	MHz	Sinewave output*
Standard Available Frequencies	10.00, 12.80, 13.00, 16.384, 20.00, 26.00, 38.40, 38.88, 40.00, 100.00 MHz				
Operable Temperature Range	0		50	$^{\circ}\text{C}$	<i>See Stability Options</i>
Frequency Stability Options					
0 $^{\circ}\text{C}$ to +50 $^{\circ}\text{C}$			± 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 $\pm 5\%$)					
Warm-Up @ 25 $^{\circ}\text{C}$			± 100.00	ppb	In ≤ 3 -minutes
Power Consumption @ turn on			3.60	Watts	
Power Consumption Steady State			1.40	Watt	
Supply Voltage (Vdd)	3.135	3.30	3.465	Volts	<i>See Options</i>
Reference Voltage (Vref) (available as an output to facilitate oscillator tuning)	2.60	2.80	3.00	Volts	<i>For Vdd=+3.3V version</i>
	4.30	4.50	4.70	Volts	<i>For Vdd=+5.0V version</i>
Aging					
Daily aging (after 30 days)			± 1.0	ppb	
Yearly			± 100	ppb	
10-Years			± 500	ppb	
Waveform					
LVCMOS					
Level "1" (Logic High)	0.9*Vdd			Volts	
Level "0" (Logic Low)			0.1*Vdd	Volts	
Load		15		pf	
Rise & Fall Time			5.0	ns	
Duty Cycle	45		55	%	

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STANDARD SPECIFICATIONS contd.

Parameters	Minimum	Typical	Maximum	Units	Notes
Waveform	Sinewave				
Peak Power	2.00			dBm	
Output Load		50		Ω	
Spectral Content					
Spurious Response			-70	dBc	
Phase Noise @ 10MHz carrier (Vdd = 3.3V)					
1Hz			-90	dBc / Hz	
10Hz			-120	dBc / Hz	
100Hz			-135	dBc / Hz	
1,000Hz			-145	dBc / Hz	
10,000 Hz			-150	dBc / Hz	
100,000Hz			-150	dBc / Hz	
1,000,000Hz			-150	dBc / Hz	
Electrical Frequency Adjustment					
Control Voltage Range (Vc)	0.0		Vdd	Volts	
Frequency Pull Range	± 0.7			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	

OPTIONS AND PART IDENTIFICATION (Left blank if standard)



OUTLINE DIMENSIONS

Top view dimensions: 25.4 \pm 0.2 mm (total width), 22 \pm 0.2 mm (total height), 17.8 \pm 0.2 mm (pin pitch), 2.5 mm (pin width), 8.9 mm (pin offset), 3.5 mm (pin length), 12.7 mm (max height), 17.8 mm (pin length), 2.5 mm (pin width), 8.9 mm (pin offset).

Bottom view shows pins 1, 2, 3, 4, 5.

Recommended Soldering Pattern

Dimensions: 23.5 mm (total width), 17.8 mm (pin length), 4 mm (pad width), 3.5 mm (pad length), 8.9 mm (pin offset).

Pin	Function
1	Control Voltage
2	VREF
3	Supply Voltage
4	RF-output
5	Ground. Case

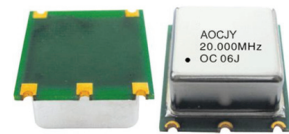
Dimensions: Inches (mm)

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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: 15 pcs/tray



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