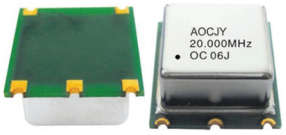
# SMD OVEN CONTROLLED CRYSTAL OSCILLATOR

## AOCJY Series




25.4 x 22.1 x 12.7 mm

Pb RoHS Compliant

### 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°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 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 | ° C | ***See Stability Options*** |
| **Frequency Stability Options** | | | | | |
| 0º C to +50ºC | | | ±5.00 | ppb | Default Spec. |
| -20º C to +70ºC | | | ±10.00 | ppb | Option "E" |
| -40º C to +75ºC | | | ±30.00 | ppb | Option "F" |
| | | | | | |
| **Frequency Stability vs. Supply Voltage (Vdd ± 5%)** | | | ±20.00 | ppb | |
| **Warm-Up @ 25 ºC** | | | ±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 | ***See Options*** |
| Reference Voltage (Vref) (available as an output to facilitate oscillator tuning) | 2.60 | 2.80 | 3.00 | Volts | ***For Vdd=+3.3V version*** |
| | 4.30 | 4.50 | 4.70 | Volts | ***For Vdd=+5.0V version*** |
| **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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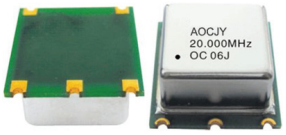


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## STANDARD SPECIFICATIONS contd.

| 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 | | | kΩ | |
| Center Control Voltage | (Vdd/2) -0.5 | Vdd/2 | (Vdd/2) +0.5 | Volts | |

## OPTIONS AND PART IDENTIFICATION (Left blank if standard)

AOCJY - ☐ - ☐ MHz - ☐ - ☐☐

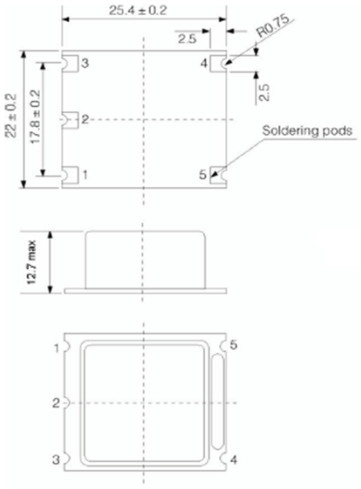
**Supply Voltage Option**
- Blank: 3.30V±5%
- A: 5.00V±5%

**Frequency in MHz**
- Such as; 10.000 MHz
- 26.000 MHz
- 100.000 MHz

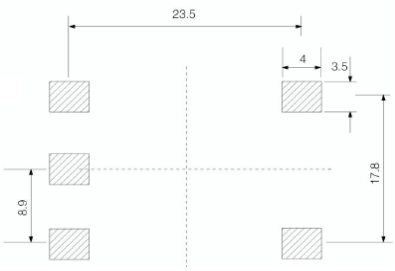
**Temperature Options**
- Blank: ±5.0ppb/0°C to+50°C
- E: ±10.0ppb/-20°C to +70°C
- F: ±30.0ppb/-40°C to +75°C

**RF Output Options**
- Blank: CMOS
- SW: Sinewave

## OUTLINE DIMENSIONS




**Recommended Soldering Pattern**




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

**Dimensions: Inches (mm)**



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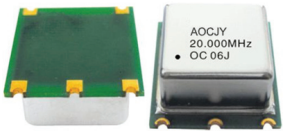


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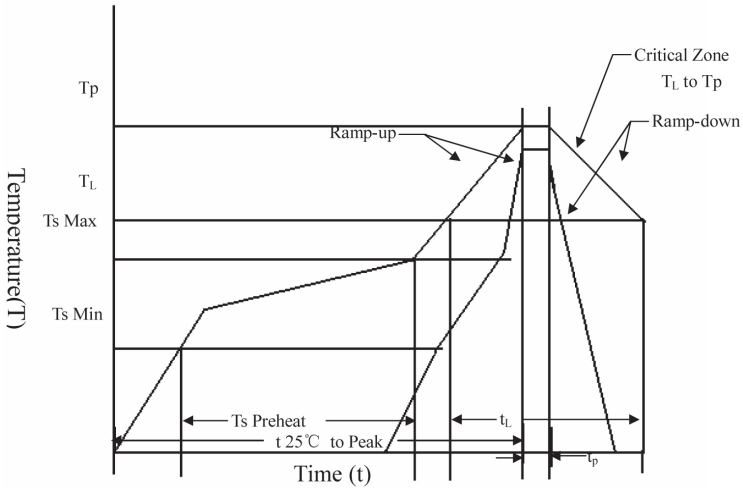
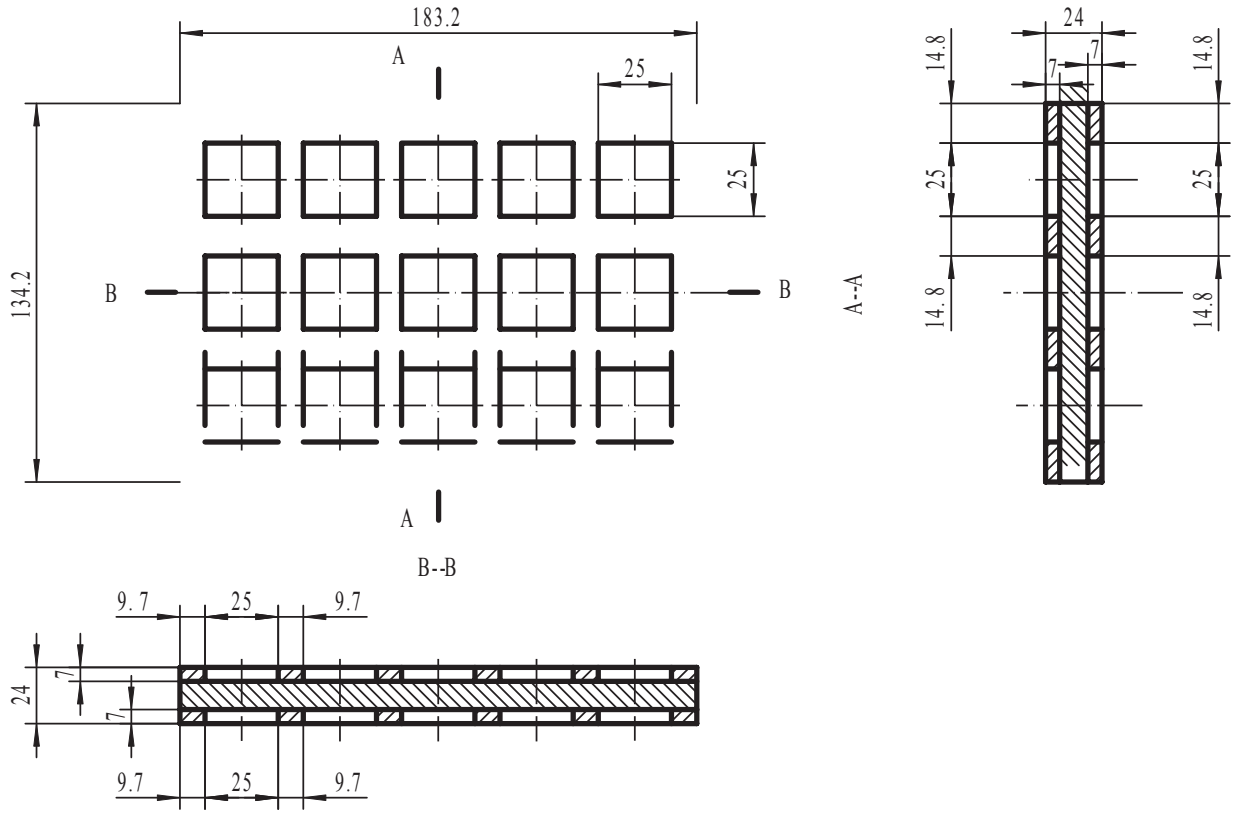
## REFLOW PROFILE:




| | |
|---|---|
| $T_S$ max to $T_L$ (Ramp-up Rate) | 3°C/second max. |
| Preheat<br>Temperature Min. ($T_S$ Min.)<br>Temperature Typical ($T_S$ Typ.)<br>Temperature Max. ($T_S$ Max.)<br>Time ($t_S$) | <br>150°C<br>175°C<br>200°C<br>60 ~ 180 seconds |
| Ramp-up rate ($T_L$ to $T_p$) | 3°C/second max. |
| Time Maintained Above:<br>--Temperature ($T_L$)/Time ($T_L$) | <br>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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- Подбор аналогов;
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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

**Как с нами связаться**

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