

Oven Controlled Crystal Oscillators

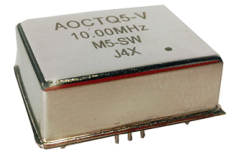
AOCTQ5



ESD Sensitive



RoHS/RoHS II compliant



36.1 x 27.1 x 12.1 mm Leaded

FEATURES:

- 36.1x 27.1 x 12.1mm Leaded- RoHS Compliant Package
- SC-Cut, High “Q” resonator based design
- Either CMOS or Sinewave output
- Tight frequency stability:
 - ± 3 ppb accuracy over -40°C to +85°C temperature range
 - ± 5 ppb accuracy over -55°C to +85°C temperature range
- Excellent close-in phase noise (-145 dBc/Hz max. @1kHz offset; 10MHz carrier)
- Ideal for Low-g-Sensitivity Designs (0.3 ppb/g maximum)

APPLICATIONS:

- COTS Military & Industrial Radios & Timing Circuits
- Cellular Infrastructure
- Radar Systems
- Test & Measurement Equipment
- GPS Tracking with precision hold-over accuracy
- WiMax / WLAN

STANDARD SPECIFICATIONS:

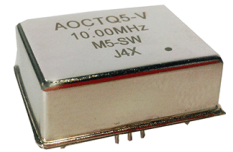
| Parameters | Min. | Typ. | Max. | Units | Notes |
|---|----------|-------|-----------------------|---------|--|
| RF Output | | | | | |
| Frequency | | 10.00 | | MHz | |
| Supply Voltage (Vdd) | | 5 | | Vdc | |
| Power Consumption | | | 5 | W | During Warming-up |
| | | | 1.6 | W | Steady-State @ +25°C & under still air |
| Waveform | Sinewave | | | | |
| Output Level | +7 | | +14 | dBm | |
| Harmonics | | | -35 | dBc | |
| Spurious | | | -70 | dBc | |
| Output Load | | 50 | | Ω | |
| Waveform | HCMOS | | | | |
| V _{OH} | 2.4 | | | V | With Load =15pF |
| V _{OL} | | | 0.4 | V | |
| Duty Cycle | 45 | | 55 | % | @ (V _{OH} - V _{OL})/2 |
| Rise/Fall Time | | | 6 | ns | With Load =15pF |
| Output Load | | | 15 | pF | |
| Storage Temperature Range | -55 | | +125 | °C | |
| Initial Frequency Tolerance | | | ±10 | ppb | At shipment, nominal EFC |
| Short-term Stability (1 sec) | | | 5 x 10 ⁻¹¹ | | Test after 15 minutes |
| Warm-up Time | | | 10 | Minutes | @+25°C, with-in ±5ppb of final frequency |
| G-Sensitivity | | | 0.3 | ppb/g | |
| Frequency Stability vs. Temp. | | | | | Available Options |
| -40° C to +85°C | | | ±3 | ppb | Option “I3” |
| | | | ±5 | ppb | Option “I5” |
| -55° C to +85°C | | | ±5 | ppb | Option “M5” |
| | | | ±10 | ppb | Option “M10” |
| Frequency Stability vs. Supply Voltage (Vdd ± 5%) | | | ±3 | ppb | |
| Frequency Stability vs. Load Variation (Load ± 5%) | | | ±3 | ppb | |
| Aging | | | | | |
| Per Day | | | ±0.5 | ppb | After 30 days in operation |
| Per Year | | | ±50 | ppb | |

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STANDARD SPECIFICATIONS:

| Parameters | Min. | Typ. | Max. | Units | Notes |
|--|----------|------|------|--------|--|
| Phase Noise (10MHz Carrier) @ +25°C | | | | | |
| @ 10 Hz offset | | -120 | | dBc/Hz | |
| @ 100 Hz offset | | -140 | | dBc/Hz | |
| @ 1,000 Hz offset | | -145 | | dBc/Hz | |
| @ 10,000 Hz offset | | -155 | | dBc/Hz | |
| @ 100,000 Hz offset | | -160 | | dBc/Hz | |
| Electrical Frequency Adjustment | | | | | For Voltage Control Option only |
| Control Voltage Range (Vc) | 0 | | 5 | Vdc | |
| Center Control Voltage (Vc) | 2.30 | 2.50 | 2.70 | Vdc | To be with-in ±10 ppb from 10.000MHz (as received) |
| Frequency Pull Range | ±500 | | | ppb | |
| Frequency Pull Slope | Positive | | | | |

Maximum Ratings

| Parameters | Min. | Typ. | Max. | Units | Notes |
|----------------------|--------------|------|------|-------|-------|
| Supply Voltage (Vdd) | -0.3 | | 15 | V | |
| Control Voltage (Vc) | 0 | | 5 | V | |
| ESD, HBM/CDM/MM | 3kV/1kV/200V | | | | |

PART IDENTIFICATION:

AOCTQ5 - -10.000 MHz - -

| Fixed or Voltage Controlled |
|-----------------------------|
| X = Fixed |
| V = Voltage Controlled |

| Operating Temp. Range | Frequency Stability (ppb) | | |
|-----------------------|---------------------------|----|-----|
| | ±3 | ±5 | ±10 |
| -40°C to +85°C | I3 | I5 | |
| -55°C to +85°C | | M5 | M10 |

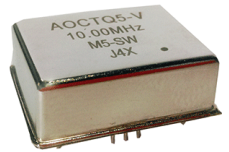
| Output Type |
|--------------|
| Blank: CMOS |
| SW: Sinewave |

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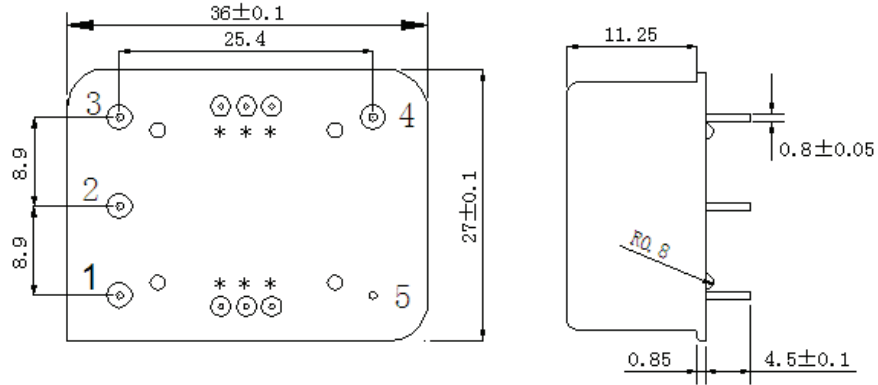


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OUTLINE DIMENSION:

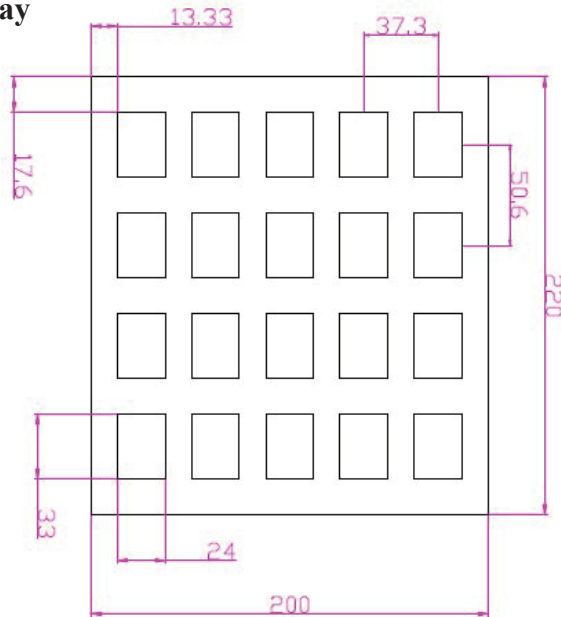


| Pin No. | Function | |
|---------|-----------------------|----------------------|
| | Fixed | Voltage Controlled |
| 1 | NC | Control Voltage (Vc) |
| 2 | NC | |
| 3 | Power Supply (Vdd) | |
| 4 | Output (Fout) | |
| 5 | Ground, Case (GND) | |
| * | For factory test only | |

Dimensions: mm

TAPE & REEL:

Packaging: 20pcs/tray



Dimensions: mm

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2 Faraday, Suite# B | Irvine | CA 92618 Revised: 07.21.15
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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

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