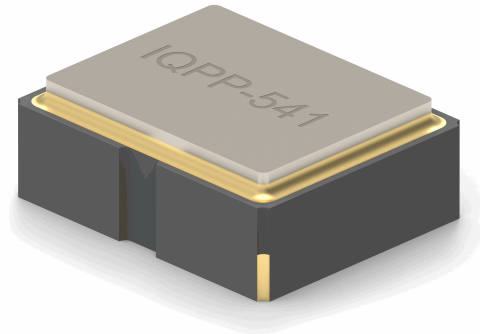


ISSUE 1; December 2022

### Description

- The IQPP-541 is a PLL based, one time only factory programmable (for a fast lead time) crystal oscillator in a hermetically sealed ceramic package with a metal lid. This model is not approved for on-board avionics, automotive & safety critical applications so see model IQXO-541 AUTO
- -A Tristate
- -B Standby



### Frequency Parameters

- Frequency 1.0MHz to 200.0MHz
- Frequency Stability  $\pm 20.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing  $\pm 3\text{ppm}$  max in 1st year @ 25°C

### Electrical Parameters

- Supply Voltage 2.5V  $\pm 5\%$
- Standby Current (Tristate): 20mA max
- Standby Current (Standby): 400 $\mu$ A max

### Operating Temperature Ranges

- -20 to 70°C
- -40 to 85°C
- -40 to 105°C

### Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- Start Up Time: 8ms max.  
In Standby mode, the internal oscillator shuts down and the start-up time will be longer compared to Tristate mode.
- Note: To ensure optimal oscillator performance, place a by-pass capacitor of 0.1 $\mu$ F as close to the part as possible between Vs and GND pad.

### Output Control

- Tristate or Standby:  
Logic '1' (>70% Vs) to pad 1 enables oscillator output.  
Logic '0' (<30% Vs) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state.  
No connection to pad 1 enables oscillator output.

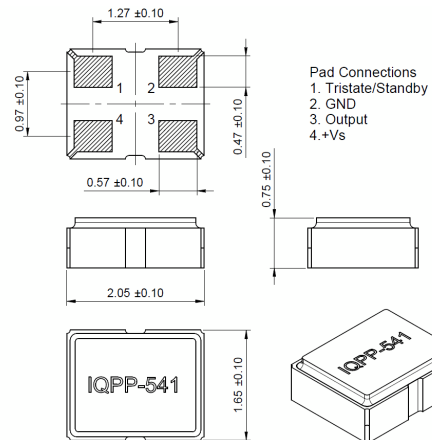
### Noise Parameters

- RMS Phase Jitter @ 50MHz (12kHz to 20MHz): 2ps max

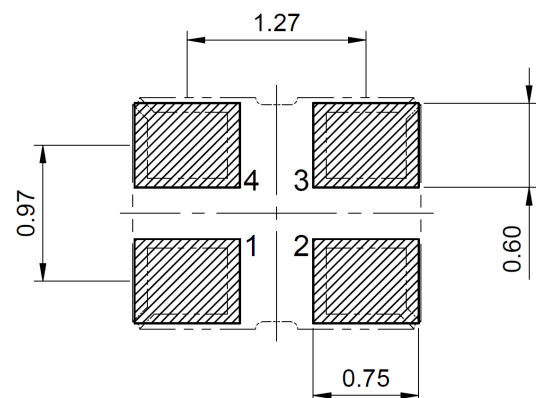
### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock (MIL-STD-883 2002 Condition B, JESD22-B104 Condition B): 1500g, 1/2 sine, 0.5ms, 3 times in each axis.
- Vibration (MIL-STD-883 2007 Condition A, JESD22-B103 Condition 1): 10-2000Hz, 1.52mm, 20g, 4 hours in each axis.
- Thermal Shock (MIL-STD-883 1010 Condition B, JESD22-A104 Condition B): -55°C, 125°C, soak time 10mins, total of 200 cycles.

### Outline (mm) -A = Tristate



### Recommended Solder Pad Layout



### Sales Office Contact Details:

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### Manufacturing Details

- RoHS Terminations                      NiAu
- RoHS Reflow                                260°C max, 255°C for 30s max

### Ordering Information

- Frequency\*  
Model\*  
-A = Tristate or -B = Standby  
Output Compatibility  
Frequency Stability (over operating temperature range)\*  
Operating Temperature Range\*  
Supply Voltage
- Example  
20.0MHz IQPP-541-A  
CMOS ±50ppm -40 to 85C 2.5V

### Compliance

- RoHS Status (2015/863/EU)            Compliant
- REACH Status                              Compliant
- MSL Rating (JDEC-STD-033):        1

### Packaging Details

- Pack Style: Reel            Tape & reel in accordance with EIA-481-D  
Pack Size: 3,000

### Electrical Specification - maximum limiting values 2.5V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	10.0MHz	-20 to 70	±20.0	27	4	45/55%
		-40 to 85	±25.0	27	4	45/55%
		-40 to 105	±25.0	27	4	45/55%
10.000001MHz	75.0MHz	-20 to 70	±20.0	27	3	45/55%
		-40 to 85	±25.0	27	3	45/55%
		-40 to 105	±25.0	27	3	45/55%
75.000001MHz	125.0MHz	-20 to 70	±20.0	30	3	45/55%
		-40 to 85	±25.0	30	3	45/55%
		-40 to 105	±25.0	30	3	45/55%
125.000001MHz	200.0MHz	-20 to 70	±20.0	35	2	45/55%
		-40 to 85	±25.0	35	2	45/55%
		-40 to 105	±25.0	35	2	45/55%

*This document was correct at the time of printing; please contact your local sales office for the latest version.*  
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