IQMS-200, -210, -220, -230 Series MEMS OSCILLATORS

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Description

- A series of factory programmable SMD plastic packaged oscillators based on the latest MEMS technology with high performance and low jitter

Package Outlines

- 7 x 5mm (IQMS-200, 201, 202, 203)
- 5 x 3.2mm (IQMS-210, 211, 212, 213)
- 3.2 x 2.5mm (IQMS-220, 221, 222, 223)
- 2.5 x 2mm (IQMS-230, 231, 232, 233)

Frequency Range

- 1 to 200MHz

Output Compatibility & Load

- Tri-state / Standby CMOS
- Drive Capability 15pF max

Frequency Stabilities

- ±25ppm, ±50ppm, ±100ppm over the operating temperature range (inclusive of supply voltage variation, load variation, ageing, shock and vibration)

Operating Temperature Ranges

- –20 to 70°C (IQMS-200, 210, 220, 230 series)
- –40 to 85°C (IQMS-200I, 210I, 220I, 230I series)

Storage Temperature Range

- –65 to 150°C

Tri-state Operation (TS option)

- Logic '1' to pad 1 enables oscillator output
- Logic '0' 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

Standby (ST option)

- Logic '1' to pad 1 enables oscillator output
- Logic '0' to pad 1 oscillator output is low level; oscillation stops
- No connection to pad '1' enables oscilaltor output
- Standby Current: 50µA max

Supply Voltage

- 1.8V IQMS-203, 213, 223, 233
- 2.5V IQMS-202, 212, 222, 232
- 2.8V IQMS-201, 211, 221, 231
- 3.3V IQMS-200, 210, 220, 230

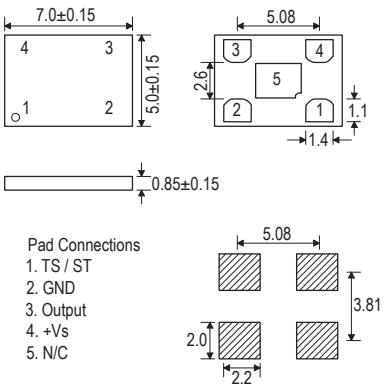
RMS Period Jitter @ 125MHz

- ±3.6ps max (IQMS-200, 210, 220, 230)
- ±5ps max (IQMS-201, 202, 211, 212, 221, 222, 231, 232)
- ±14ps max (IQMS-203, 213, 223, 233)

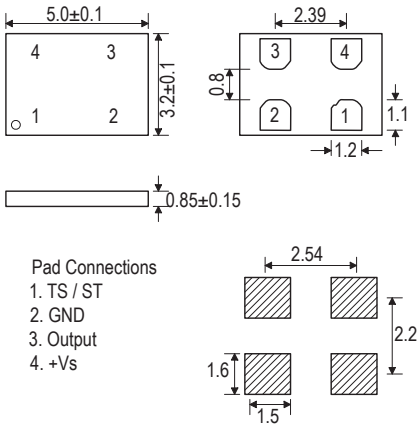
Start-Up Time

- 10ms max

Outline (mm) - IQMS-200, -201, -202, -203



Outline (mm) - IQMS-210, -211, -212, -213



Ageing

- ±1ppm max in 1st year

Environmental

- Shock: MIL-STD-883F, Method 2002
- Vibration: MIL-STD-883F, Method 2007
- Temperature Cycle: JESD22, Method A104
- Solderability: MIL-STD-883F, Method 2003
- MSL level 1

Marking Includes

- Frequency (may be truncated)

Packaging

- Bulk or Tape & Reel

Minimum Order Information Required

- Frequency + Model Number + Tri-state/Standby Code + Operating Temperature Code (if applicable) + Frequency Stability

IQD Frequency Products Ltd, Station Road, Crewkerne, Somerset TA18 8AR, United Kingdom
Tel: +44 (1460) 270200; Fax: +44 (1460) 72578;
Email: info@iqdfrequencyproducts.com Web: www.iqdfrequencyproducts.com

Electrical Specifications - maximum limiting values

Frequency Range	Frequency Stabilites	Supply Voltage	Supply Current (@ 125MHz)	Rise Time (20-80%)	Fall Time (80-20%)	Duty Cycle	Model Number
1.0 to 125.0MHz	±25ppm*, ±50ppm, ±100ppm	3.3V ±10%	34mA	1.5ns	1.5ns	45/55%	IQMS-200, 200I IQMS-210, 210I
> 125 to 200MHz						40/60%	IQMS-220, 220I IQMS-230, 230I
1.0 to 125.0MHz		2.8V ±10%	31mA			45/55%	IQMS-201, 201I IQMS-211, 211I
> 125 to 200MHz						40/60%	IQMS-221, 221I IQMS-231, 231I
1.0 to 125.0MHz		2.5V ±10%				45/55%	IQMS-202, 202I IQMS-212, 212I
> 125 to 200MHz						40/60%	IQMS-222, 222I IQMS-232, 232I
1.0 to 75.0MHz		1.8V ±5%	31mA			45/55%	IQMS-203, 203I IQMS-213, 213I
> 75 to 200.0MHz						40/60%	IQMS-223, 223I IQMS-233, 233I

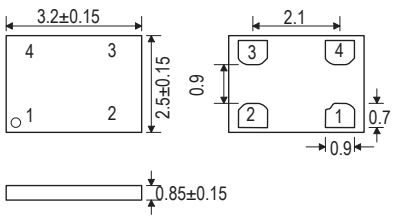
Ordering Example: 10.0MHz IQMS-200 TS I B

- Frequency:
- Model No:
- Tri-State / Standby Code: TS = Tri-State; ST = Standby
- Operating Temperature Code: I = –40 to 85°C; Not applicable for –20 to 70°C
- Frequency Stability Code: A = ±25ppm; B = ±50ppm; C = ±100ppm

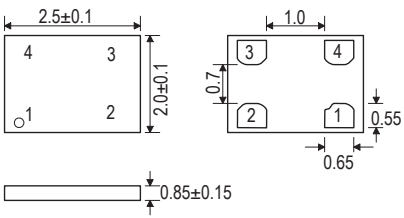
*Note - Code IA, ±25ppm over –40 to 85°C is not available

MEMS OSCILLATORS

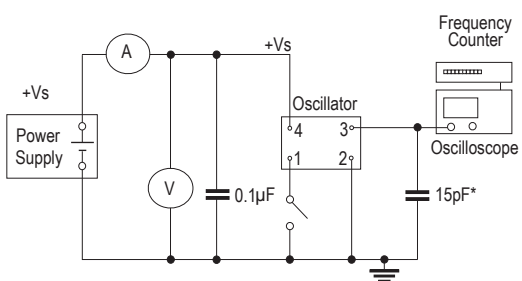
Outline (mm) - IQMS-220, 221, 222, 223



Outline (mm) - IQMS-230, 231, 232, 233

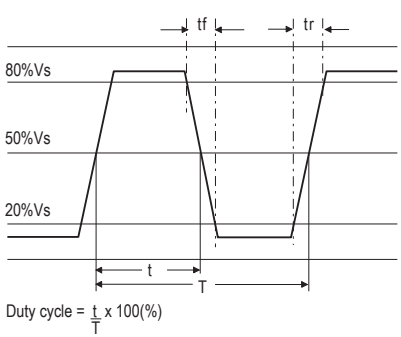


Test Circuit



*Inclusive of jigging and equipment capacitance

Output Waveform



Registration No. FS540259
INVESTOR IN PEOPLE
IQD Frequency Products Ltd, Station Road, Crewkerne, Somerset TA18 8AR, United Kingdom
Tel: +44 (1460) 270200; Fax: +44 (1460) 72578;
Email: info@iqdfrequencyproducts.com Web: www.iqdfrequencyproducts.com