IQMS-940, -942 SERIES MEMS OSCILLATORS

ISSUE 2; 1 NOVEMBER 2010 - RoHS 2002/95/EC

Description

- MEMS alternative to the IQXO-710
- LVDS output MEMS oscillator in a plastic package
- Factory programmable for a fast lead time

Frequency Ranges

- 1 to 220MHz
- 220 to 800MHz (contact IQD sales offices)

Output Compatibility & Load

- LVDS
- Differential Output Voltage (V_{OD}) 0.25V min, 0.35V typical
- Offset Voltage (Vos) 1.2V typical
- Output Load 100Ω

Supply Voltages

- 3.3V IQMS-940
- 2.5V IQMS-942

Frequency Stabilities

- ±10ppm, ±15ppm ±20ppm, ±25ppm, ±50ppm over the operating temperature range (inclusive of tolerance, supply voltage variation, load variation)
  Note: ±10ppm only available over 0 to 70°C

Operating Temperature Ranges

- 0 to 70°C
- –20 to 70°C
- –40 to 85°C

Storage Temperature Range

- –65 to 150°C

Tri-State Operation (TS option)

- Logic '1' to pad 1 (≥70%V_S) enables oscillator output
- Logic '0' to pad 1 (≤30%V_S) 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 (≥70%V_S) enables oscillator output
- Logic '0' to pad 1 (≤30%V_S) disables oscillator output; when disabled the oscillator output goes to the high impedance state, oscillation stops
- No connection to pad 1 enables oscillator output
- Standby Current: 25µA typcial @3.3V
  15µA typcial @2.5V

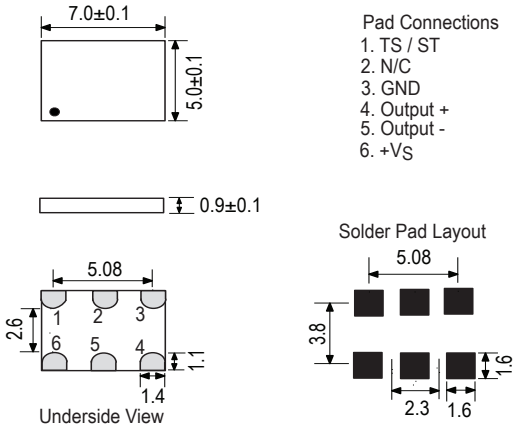
RMS Period Jitter @ 200MHz

- 1.8ps typical at 3.3V
- 2.4ps typical at 2.5V

RMS Phase Jitter @ 200MHz, BW 1MHz to 20MHz

- 0.7ps typical

Outline (mm)



Ageing

- ±1ppm typ in 1st year at 25°C

Environmental

- Shock: MIL-STD-883F, Method 2002
- Vibration: MIL-STD-883F, Method 2007
- Temperature Cycle: MIL-STD-883F, Method 1010
- Solderability: MIL-STD-883F, Method 2003
- MSL level 1

Packaging

- Loose in bulk pack, 100pcs per bag
- Tape and reel in accordance with EIA-481-D, 1kpcs per reel (please see pages 372 & 373)

Ordering Information (*minimum required)

- Frequency*
- Model*
- Output
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Supply Voltage
- TS/ST Option*

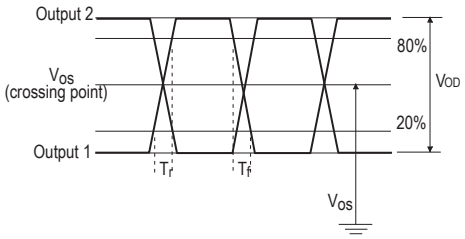
Example

- 40.00MHz IQMS-940
  LVDS ±25ppm –40 to 85C 3.3V ST

Electrical Specifications - maximum limiting values

Frequency Range	Frequency Stability	Supply Voltage	Supply Current (no load)	Rise Time (t_r) (20-80%)	Fall Time (t_f) (80-20%)	Duty Cycle	Model Number
1.0 to 220.0MHz	±10ppm ±15ppm ±20ppm ±25ppm ±50ppm	3.3V±10%	79mA	325ps	325ps	45/55%	IQMS-940
		2.5V±10%	76mA				IQMS-942
Note: For other frequency/specification combinations, please contact our sales offices							

Output Waveform



Test Circuit