

Customer Part:

Description

- The ICPT-1 is an atomic clock designed using the Coherent Population Trap method housed in a 9 Pin through-hole metal case. ICPT-1 offers low phase noise, excellent short term stability and tight tolerance.
- Model ICPT-1
- Model Issue number 2

Frequency Parameters

- Frequency 10.0MHz
- Frequency Tolerance $\pm 0.05\text{ppb}$
- Tolerance Condition @ 25°C
- Frequency Stability $\pm 0.50\text{ppb}$
- Operating Temperature Range -40.00 to 70.00°C
- Ageing $\pm 0.03\text{ppb}$ max per day @ 25°C
- Frequency Stability (Temperature varied across the operating temperature range, measurement referenced to frequency observed with $\text{fref}=(\Delta\text{fmax},\text{fmin})/2$): $\pm 0.5\text{ppb}$ typical
- Retrace: $\pm 0.5\text{ppb}$ max

Electrical Parameters

- Supply Voltage 3.3V $\pm 0.15\text{V}$
- 1PPS Input (Pin 7): Synchronisation: $\pm 50\text{ns}$ max
- Power Consumption (@ 25°C): Warm-Up: 8.25W typ, 9W max
Steady State: 1.65W typ, 2W max
- Warm-Up Time: 5 mins typ to $\pm 0.5\text{ppb}$ @ 25 °C
- Lock Indicator: Pin 2 is high (3.3V) when out of lock and low (0V) when locked

Frequency Adjustment

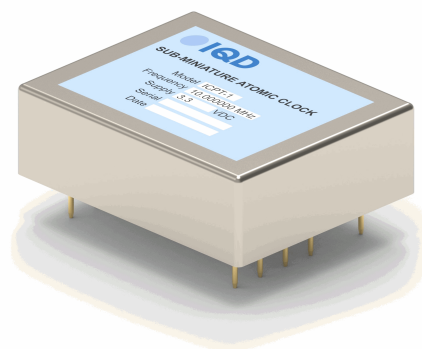
- Digital Frequency Adjustment: $\pm 100\text{ppb}$ max scale
1ppt resolution

Output Details

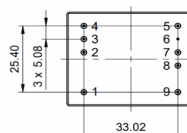
- Output Compatibility CMOS
- Drive Capability 15pF
- The above applies to 10MHz output (Pin 9) and 1PPS output (Pin 8)

Noise Parameters

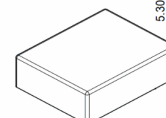
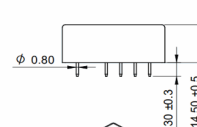
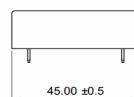
- Short Term Stability (ADEV) typ:
 - 1s 0.9E-10
 - 10s 5.0E-11
 - 100s 2.0E-11
- Phase Noise 10MHz Output (typ)
 - 70dBc/Hz @ 1Hz
 - 95dBc/Hz @ 10Hz
 - 120dBc/Hz @ 100Hz
 - 140dBc/Hz @ 1kHz
 - 145dBc/Hz @ 10kHz
 - 150dBc/Hz @ 100kHz
 - 155dBc/Hz @ 1MHz



Outline (mm)



Pin Connections	
1. Do Not Connect	6. GND
2. Lock Indication	7. 1PPS Input
3. TXD	8. 1PPS Output
4. RXD	9. 10MHz Output
5. +Vs	



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Customer Part:**Environmental Parameters**

- Storage Temperature Range: -55 to 85°C
- Humidity: 75% (Non Condensing)

Manufacturing Details

- Please ensure that a sufficient air gap is maintained between the ICPT- 1 and the PCB at all times
- No copper should be place directly under the ICPT-1
- 1PPS input line cannot be left floating, please add a pull down resistor to GND e.g.100kΩ

Compliance

- | | |
|------------------------------|----------------|
| ■ RoHS Status (2015/863/EU) | Compliant |
| ■ REACH Status | Non-Compliant |
| ■ MSL Rating (JDEC-STD-033): | Not Applicable |

Packaging Details

- Bulk pack

Standard Pack Quantity: 1

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