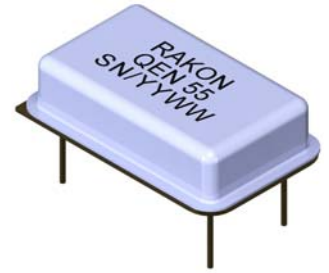


Specific request can be addressed to RAKON [hirel@rakon.com](mailto:hirel@rakon.com)

#### Product Description

This Crystal Oscillator is based on Hybrid Technology in DIL package.  
 This XO performs +/-50 to +/-100pm of overall frequency stability (vs. temperature range and calibration at 25°C, load and power supply changes) and ageing of +/- 5ppm per year. This reference is suitable for rugged radio systems used for instance in high speed trains or avionics.



#### Features

- Hybrid product with die and wire bonding to a ceramic substrate with 3 points crystal resonator.
- Case type (s) : DIL package 14 pin 20.7 x 13.1 x 5.1mm typical
- Frequency Range : 1.5MHz to 100MHz
- Temperature Range : from -40°C to +85°C up to -55°C to +125°C
- Overall Frequency Stability vs. Temperature Range and calibration at 25°C and load and power supply changes : +/-50 to +/-100pm overall
- Ageing per year: +/-5ppm at 45°C first year
- Output Wave Form : square ; Tristate output
- Supply Voltage : +3.3V or +5V
- Options available : R: duty cycle 50/50; T: tinned pins; Screening B



#### Applications

- Recommended for embedded applications, extended temperature range, and rugged environment.

#### Specifications

##### 1. Environmental conditions

Parameter	Conditions/remarks	Min	Nom	Max	Unit
Operating Temperature	Temperature option DT	-40	25	85	°C
	Temperature option AY	-55	25	125	°C
Switch-on Temperature	TSo	-55		125	°C
Non-Operating Temperature	TNOp	-55		125	°C
Random Vibration	Level as per MIL-STD-202, Method 214, Condition I-F (20 Grms)				
Sine Vibration	Level as per MIL-STD-202, Method 204, Condition E (50G)				
Shocks	Mechanical shock as per MIL-STD-202, Method 213, cond A (half sine with a peak acceleration of 300g for duration of 3 msec)				
Acceleration	Acceleration as per MIL-STD-883, Method 2001, condition A (5000g, during 60s in Y1)				

**2. Electrical interface**

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Power supply	Option BH	3.13	3.3	3.465	V
	Option AH	4.5	5	5.5	V
Load Impedance		13	15	18	pF

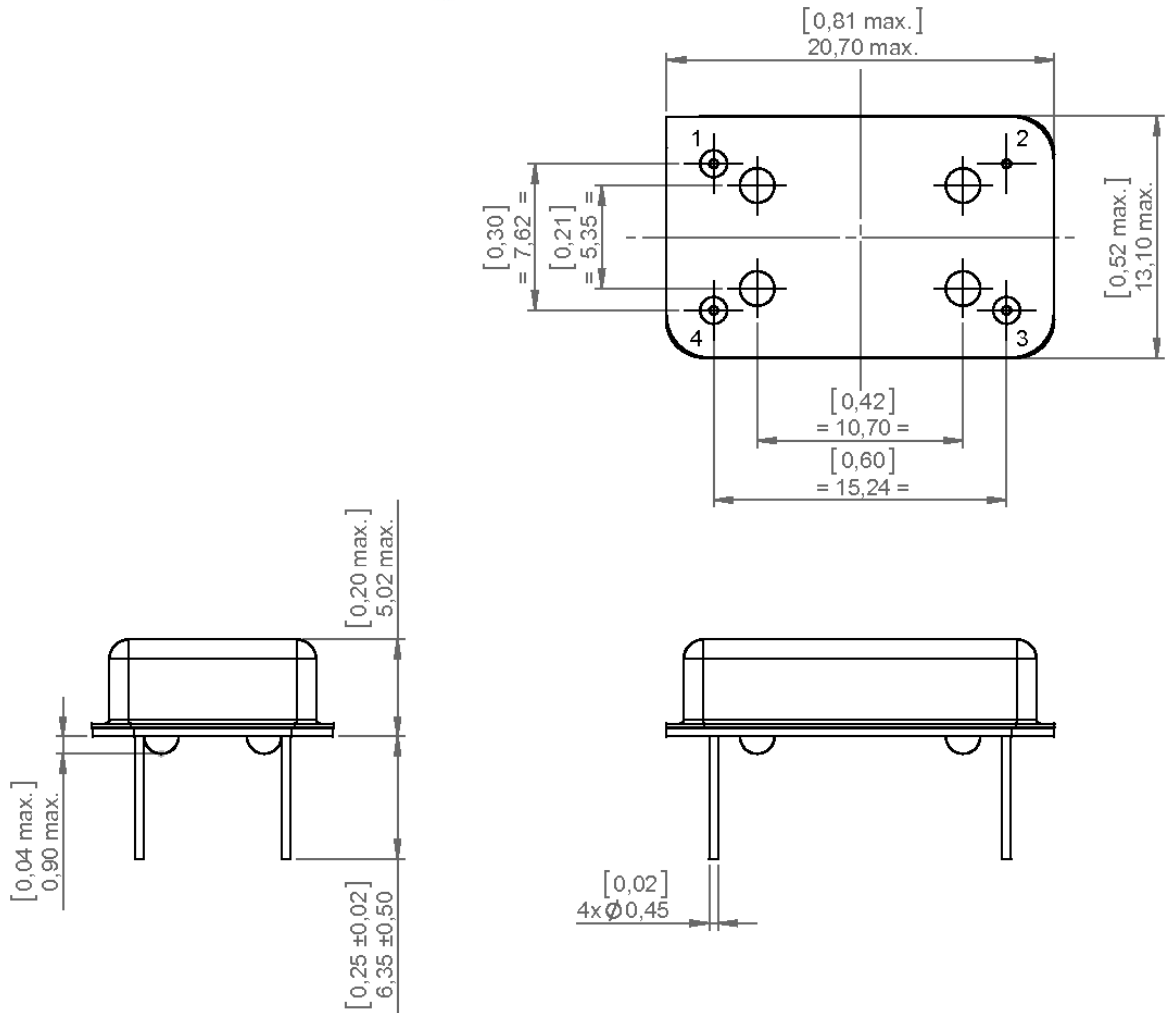
**3. Performances**

Parameters	Conditions/Remarks	Min	Typ	Max	Unit
Nominal Frequency		1.5		100	MHz
Steady state input current power			20		mA
Global Frequency stability (1)	Absolute frequency drift option 50			± 50	ppm
	Absolute frequency drift option 100			± 100	ppm
Initial frequency accuracy			± 15		ppm
Frequency-temperature stability	Temperature option DT		± 20		ppm
	Temperature option AY		± 25		ppm
Frequency variation vs. supply voltage	Over Operating Temperature		± 3		ppm
Frequency variation vs. load	Over Operating Temperature		± 5		ppm
Frequency ageing	Over 15 years		± 12		ppm
Start up time				10	ms
Output waveform	AHCMOS compatible	Square			
Output level VOL	Supply option BH			0.4	V
	Supply option AH			0.5	V
Output level VOH	Supply option BH	2.4			V
	Supply option AH	4.5			V
Duty cycle		40		60	%
	Option R	45		55	%
Rise time	10%-90% of Vcc, frequency < 10 MHz		10		ns
	10%-90% of Vcc, frequency ≥ 10 MHz		5		ns
Fall time	90%-10% of Vcc, frequency < 10 MHz		10		ns
	90%-10% of Vcc, frequency ≥ 10 MHz		5		ns

Note 1 : Including initial accuracy+freq temp stability+power supply stab+ageing over 15 years

#### 4. Mechanical features

**Weight 10 grams**



DOCUMENT :	150.Plan d'encombrement 150-Oscillator outline		GEN. TOL. +/- 0.1	UNITS: mm [inch]	SCALE 3:1
------------	---	--	----------------------	---------------------	--------------

#### 5. Pin description

Line	Pin number	Name	Description
5.1	1		NC or Enable/disable or tristate
5.2	7	GND	Electrical & mechanical ground
5.3	8	Output	Output Frequency
5.4	14	Vcc	Power supply

## 6. Ordering part number definition

The part number breakdown is defined as follows:

