

## RK115

This high reliability XO RK115 is designed for space applications and is based on hybrid technology, where it is resistant to extreme environments (Radiation, shock and vibration). The key advantages of this oscillator are low power consumption and short lead times. The RK115 is available with the second generation of enhanced J-lead technology which make its report easy and is also available in Flatpack and DIL packages, pin-to-pin compatible with most of the Space XOs in the market.

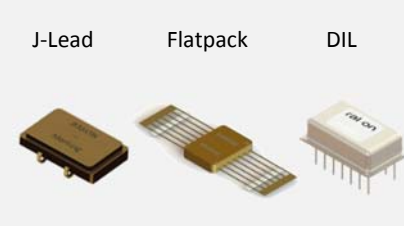
### Features

- ITAR-free
- Frequency Range: 2 MHz to 100 MHz
- AHCMOS or AC MOS output
- Low consumption: 25 mA
- Supply Voltage: +3.3 V or +5 V
- Global frequency stability:  $\pm 68$  ppm over 18 years

### Applications

- Space
  - Digital cards
  - FPGA clock

### Packages



### Environmental Conditions

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Operating temperature	Option C: -40°C to 110°C	-40	25	110	°C
Switch-on temperature	TS <sub>0</sub>	-40		110	°C
Non-operating temperature	TNO <sub>p</sub>	-40		110	°C
Random vibration	Level as per MIL-STD-202, Method 214, Condition I-K (46, 3 Grms)				
Shocks	Mechanical shock as per MIL-STD-202, Method 213 (half sine with a peak acceleration of 2000 g for a duration of 0.3 ms)				
Acceleration	Acceleration as per MIL-STD-883, Method 2001, Condition A (5000 g)				
Radiation	Total ionizing Dose of 100 kRad, low dose rate as per ESICC22900 Latchup free up to LET = 62.5 MeV/mg/cm <sup>2</sup>				

### Frequency Characteristics

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Nominal frequency		2		100	MHz
Steady state input current power	AHCMOS		25		mA
Global frequency stability <sup>1</sup>	Option C: -40°C to 110°C			$\pm 68$	ppm
Initial frequency accuracy			$\pm 10$	$\pm 25$	ppm
Frequency stability over temperature	Option C: -40°C to 110°C			$\pm 30$	ppm
Supply voltage stability	Over operating temperature			$\pm 3$	ppm
Load sensitivity	Over operating temperature			$\pm 5$	ppm
Ageing	Over 18 years			$\pm 15$	ppm
Start-up time				10	ms
Output level	AHCMOS	2.4		0.4	V
Duty cycle		45	50	55	%
Rise time	10% to 90% V <sub>cc</sub>			5	ns
Fall time	90% to 10% V <sub>cc</sub>			5	ns

<sup>1</sup> Including initial accuracy + frequency temperature stability + power supply stability + ageing over 18 years.

## Electrical Interface

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Power supply option 1	3.3 V	3.13	3.3	3.465	V
Power supply option 2	5 V	4.5	5	5.5	V
Load impedance (AHCMOS 3.3 V)	2 MHz ≤ Frequency < 80 MHz	13	15	18	pF
Load impedance (AHCMOS 3.3 V)	80 MHz ≤ Frequency ≤ 100 MHz	9.1	10	11	pF
Load impedance (AHCMOS 5 V)		13	15	18	pF
Load impedance (ACMOS 3.3 V / 5 V)	2 MHz ≤ Frequency 100 MHz	13	15	18	pF

## Package Options

J-Lead	Flatpack				DIL
JL2 14x9x3.8 mm, 4 leads	FP1 15x20x3.6 mm, 14 leads	FP2 16x16x3.8 mm, 20 leads	FP3 16x16x3.6 mm, 12 leads	FP4 13x10x3 mm, 16 leads	DIL1 20x13x5 mm, 14 leads

## Model Grade

Parameter	EM	EQM	FM
components	Passive commercial parts, active parts from the same manufacturer of the hi-rel parts	MIL grade parts procured from the same manufacturer of hi-rel parts	Hi-rel parts
Crystal materials	Swept quartz	Swept quartz	ESCC3501 Swept quartz
Mechanical interface	Flight representative in form-fit-function	Flight representative in form-fit-function	Flight design
Electrical interface	Flight design	Flight design	Flight design
Tests	Acceptance testing	Qualification test	Acceptance testing (including screening group A & B)

## Ordering Part Example

