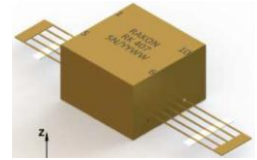


For this product, full and detailed specifications can be delivered on request.
Specific request can be addressed to RAKON info@rakon.fr

Product Description

The RK407 is a Space OCXO dedicated to Telecom payloads as it is in the 10⁻⁷ stability class over the temperature range with an overall frequency drift less than 2ppm over 18 years and available with a short lead time.



It is designed for clocks, signal generation applications, transponders, GPS receivers, digital cards, board calculators, down and up converters, and synthesizers.

This frequency source is a good trade-off between overall frequency stability and power consumption. It is manufactured in accordance with MIL-PRF-55310 (Class 1, type 4, level S) and is available in a flat pack package (25x25x17mm).

Features

- Wide frequency range: 10MHz-130MHz
- Standard Frequencies: 10, 38-45, 90-110, 120-130MHz
- Low consumption: 0.65 W
- Supply Voltage : +5V or +12V
- Warm up Consumption : 2 Watt
- Overall Frequency Stability vs. Operating Temperature Range ± 0.5ppm under vacuum
- Ageing :± 1 ppm over 18 years typical
- Output Wave Form : sine 50 Ohms
- Compatible with Flat pack TCXO pin-out
- Component selected as per ECSS-Q-ST-60C
- Materials selected as per ECSS-Q-ST-70
- Manufacturing in accordance with:
 - MIL-PRF-55310 (Class 1, type 4, level S)
 - ECSS-Q-ST-70-08C and ECSS-Q-ST-70-38C

Applications

- Transponders
- GPS receivers
- Navigation
- Converters
- Onboard calculators
- Synthesizers
- FGU

Specifications

Environmental conditions

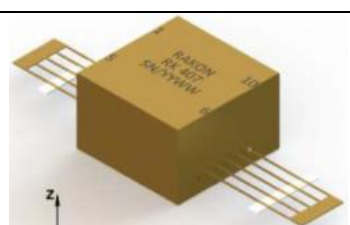
Parameters	Conditions/remarks	Min	Nom	Max	Unit
Operating Temperature	T _{Op}	-40	25	70	°C
Switch-on Temperature	T _{So}	-40		85	°C
Non-Operating Temperature	T _{NOp}	-55		125	°C
Random Vibration	Level as per MIL-STD-202 Method 214 20 to 100 Hz : +6dB/oct 100 to 1000 Hz : 2.6 g ² /Hz 1000 to 2000 Hz : -6dB/oct Overall : 61grms				
Sine Vibration	Level as per MIL-STD-202 Method 204, Condition D (20G)				
Shocks	Mechanical shock as per MIL-STD-202, Method 213 : half sine with a peak acceleration of 3000g for duration of 0.3msec				
Radiation	Total Ionizing Dose of 100 kRad, low dose rate (36 to 360 rad/h)				

Electrical interface

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Power supply	Option 1 (12V)	11.40	12	12.60	V
	Option 2 (5V)	4.75	5	5.25	V
Load Impedance		45	50	55	Ω
Reference voltage	Supply voltage option 1	5.4	6	6.6	V
	Supply voltage option 2	2.85	3	3.15	V
Control voltage	Only with Freq adj option 2	0		Vrefnom	V

Performance for standard frequencies

Parameters	Conditions/Remarks	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Unit
Nominal Frequency		MHz	10		45	90		110	120		130	MHz
Steady state supply power	Vacuum, EOL	W			0.7			0.7			0.7	W
Warm up supply power	Vacuum, EOL	W			2			2			2	W
Initial frequency accuracy	Vacuum	ppm			± 0.4			± 0.4			± 0.4	ppm
Frequency adjustment	Freq adj. Option 2 (voltage controlled)	ppm			± 1.2			± 1.2			± 1.2	ppm
Frequency stability vs temperature	-20°C...+70°C	ppm			± 0.1			± 0.1			± 0.1	ppm
	TOp (-40°C...+70°C)	ppm			± 0.25			± 0.25			± 0.25	ppm
Frequency variation vs. supply voltage	Over Operating Temperature	ppm			± 0.05			± 0.05			± 0.05	ppm
Frequency variation vs. load	Over Operating Temperature	ppm			± 0.05			± 0.05			± 0.05	ppm
Frequency ageing	Atm to vacuum	ppm			± 0.2			± 0.2			± 0.2	ppm
	Over 1 day	ppb			± 5			± 10			± 10	ppb
	Over 1 year	ppm			± 0.3			± 0.3			± 0.3	ppm
Allan variance	Over 18 years	ppm			± 1			± 1			± 1	ppm
	10ms				1.E-11			1.E-11			1.E-11	
	100ms				1.E-11			1.E-11			1.E-11	
	1s				5.E-11			5.E-11			5.E-11	
Phase noise	10s				5.E-11			5.E-11			5.E-11	
	Time needed to reach the initial frequency accuracy (1h ref.)	mn			6			6			6	mn
Output waveform			Sine									
Output level	EOL, Supply voltage option 1 (12V)	dBm	4		7.5	4		7.5	4		7.5	dBm
	EOL, Supply voltage option 2 (5V)	dBm	2.5		6	2.5		6				dBm
Harmonics level		dBc			-25			-25			-25	dBc
Spurious level	100Hz to 100kHz	dBc			-100			-100			-100	dBc
	100kHz to 5GHz	dBc			-85			-85			-85	dBc
Phase noise	1 Hz	dBc/Hz			-65			-60			-60	dBc/Hz
	10 Hz	dBc/Hz			-95			-90			-90	dBc/Hz
	100 Hz	dBc/Hz			-125			-120			-120	dBc/Hz
	1kHz	dBc/Hz			-145			-140			-140	dBc/Hz
	10 kHz	dBc/Hz			-152			-150			-150	dBc/Hz

Description	Dimensions	
Flat pack 10 leads	25.50x25.50x17 mm	

Ordering part number definition

