

RVX2213S

The RVX2213S is a radiation tolerant VCXO housed in a 22 x 13 mm low profile, hermetically sealed package. This high reliability VCXO offers wide frequency pulling of ± 375 ppm and precise frequency stability of ± 25 ppm. Engineered for space missions requiring exceptional resistance to demanding environments, the RVX2213S ensure robust performance under challenging conditions. The oscillator is available with a short lead-time, providing a reliable solution for time-sensitive applications.

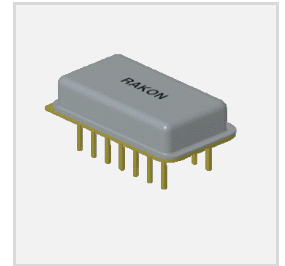
Features

- TID limit of 100 krad and SEL free up to LET 62 MeV.cm²/mg
- Hermetically sealed package
- Frequency range: 0.032 Hz to 72 MHz
- Output: CMOS
- High pulling: ± 375 ppm
- Supply voltage: 5.0 V
- Excellent frequency stability: ± 50 ppm over -30 to 60°C
- Manufactured in accordance with: MIL-PRF-55310 Class 2, level S

Applications

- Space Synthesizers and Transponders
- GPS receivers
- Down and up converters and on-board calculators

22 x 13 mm



Environmental Conditions

Parameter	Test Conditions/Description	Min.	Typ.	Max.	Unit
Operating temperature (To)		-30		60	°C
Switch-on temperature (Tso)		-40		125	°C
Storage temperature (Ts)		-55		125	°C

Frequency Characteristics

Parameter	Test Conditions/Description	Min.	Typ.	Max.	Unit
Initial frequency accuracy	@ 25°C			± 25	ppm
Frequency stability over temperature (FvT)	-30 to 60°C			± 50	ppm
Supply voltage stability (FvT) ¹¹				± 0.2	ppm
Ageing	for the first year per year after the first year			± 5 ± 2	ppm
Start-up time				10	ms

Electrical Interface

Parameter	Test Conditions/Description	Min.	Typ.	Max.	Unit
Power supply (Vcc)	$\pm 5\%$ tolerance		5.0		V
Input current ²	No load		30		mA

¹ Over operating temperature.

² Over temperature range.

Control Voltage (Vc)

Parameter	Test Conditions/Description	Min.	Typ.	Max.	Unit
Pulling range			±375		ppm
Control voltage (Vc)		0	2.5	5.0	V
Linearity ¹				10	%
Slope	Positive				
Modulation impedance		50			kΩ

Output Characteristics – HCMOS³

Parameter	Test Conditions/Description	Min.	Typ.	Max.	Unit
Nominal frequency (Fn)	HCMOS output	0.032		72	MHz
Output voltage (V _{OL}) ¹	15 pF load			10% Vcc	V
Output voltage (V _{OH}) ¹	15 pF load	90% Vcc			V
Duty cycle ¹	@50% Vcc	45		55	%
Rise time / Fall time ¹	10 % to 90% Vcc			15	ns

Environmental Specifications

Screening Operation	Requirements and Condition			
Non-destructive bond pull	MIL-STD-883, method 2023			
Internal visual	MIL-STD-883, method 2017 and method 2032			
Stabilisation bake (prior to seal)	MIL-STD-883, method 1008, condition C (+150°C), 48 hours minimum			
Thermal shock	MIL-STD-883, method 1011, condition A			
Temperature cycling	MIL-STD-883, method 1010, condition C			
Constant acceleration	MIL-STD-883, method 2001, condition A, Y1 only (5000 g's)			
Seal (fine and gross leak)	MIL-STD-883, method 1014:	<i>Fine leak</i> Test condition A1, A2, or B	<i>Fine leak</i> Test condition B2 or B3	<i>Fine leak</i> <i>Test condi</i>
Particle impact noise detection (PIND)	MIL-STD-883, method 2020, condition A			
Electrical test	Nominal and extreme supply voltages, specified load, 23°C and temperature extremes, record all test parameters by serial number			
Burn-in (load)	115°C, nominal supply voltage and burn-in load, 440 hours minimum			
Radiographic	MIL-STD-883, method 2012			
External Visual	MIL-STD-883, method 2009			

³ Transistor Transistor Logic (TTL) output option available on request.

Model Outline and Pin Connections

Parameter	Requirements / Condition
Package size	L x W: 22 x 12.65 mm nom. H = 4.8 mm max.
Net weight	15 g typ.

