

ROX5555S

The ROX5555S platform is a Space OCXO offering low power consumption and low noise solutions. This frequency source is available with a short lead time and is designed for scenarios where low power consumption is critical.

The OCXO ROX5555S is in a small format with a Mountable L-filter for DC input and an SMA Female connector for RF output. It is manufactured following the guidelines of MIL-PRF-55310 (Class 1, type level S). This high reliability OCXO is the ideal solution for telecommunications payload applications such as clocks, signal generation, transponders, GNSS receivers, digital cards, down and up converters and synthesizers.

Features

- Wide frequency ranges from 70 to 130 MHz
- Low power consumption: 3 W
- Overall frequency stability vs. temperature: ± 24 ppb
- 15 years mission life plus 2 years ground storage ± 1 ppm
- Radiation 100 krad
- Sinewave output
- Manufactured in accordance with MIL-PRF-55310

Applications

- Atomic clocks
- Transponders
- GNSS receivers
- Converters
- Synthesizers
- Frequency generator unit (FGU)

55 x 55 x 35 mm



Environmental Conditions

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Operating temperature (To)		-10		60	°C
Switch-on temperature (Tso)		-40		70	°C
Storage temperature (Ts)		-55		125	°C

Frequency Characteristics

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Nominal frequency (Fn)			70 to 130		MHz
Initial frequency accuracy	@25°C			± 100	ppb
Frequency stability over temperature (FvT)	-10 to 60°C			± 24	ppb
Supply voltage stability (FvT) ¹				± 1	ppb
Ageing	Per day			± 1	ppb
	Per year			± 30	
	Over life			± 100	

Electrical Interface

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Power supply (Vcc)	$\pm 5\%$ tolerance		15		V
Power consumption	During warm-up			8	W
	Nominal power consumption			3	W
	Power consumption in operation			4.5	W

¹ Over temperature range.

Output Characteristics – Sinewave

Parameter	Condition / Remarks	Min.	Typ.	Max.	Unit
Output level ¹	50 Ω nominal load	7			dBm
Harmonics ¹			-45		dBc
Spurious ¹			-100		dBc
Phase noise	10 Hz offset		-90		dBc/Hz
	100 Hz offset		-120		
	1 kHz offset		-130		
	10 kHz offset		-145		

Environmental Specifications

Screening Operation	Requirements and Condition
Random vibration	MIL-STD-202-214, condition I-B, duration 5 minutes per axis
Thermal shock	MIL-STD-202-107, condition B-1
Particle impact noise detection (PIND)	Not applicable for non-hermetic package
Electrical test	Nominal and extreme supply voltages, specified load, 23°C and temperature extremes, record all test parameters by serial number
Burn-in (load)	Maximum specified operating temperature, nominal supply voltage and burn-in load, 240 hours minimum
Electrical test	Nominal and extreme supply voltages, specified load, 23°C and temperature extremes, record all test parameters by serial number
Seal test	Not applicable for non-hermetic package
Radiographic	MIL-STD-202-209
Visual and mechanical inspection	MIL-STD-883 method 2009

Manufacturer Information

Parameter	Condition / Remarks
Package size	55 x 55 x 35 mm. nom. Non-hermetic (i.e. Metal package) PCB mountable. Outer finish electroless nickel plating
Net weight	150 g max.
Mounting configuration and interface requirements	Flat Base Plate with 4 mounting lugs suitable to fix the OXCXO on a plate with the help of screws
Connections	For DC power: Mountable L-Filter with Nut & Washer For RF Output: SMA-Female

Model Outline and Pin Connections

