

OX770 Series



Vibration-isolated package, Sine wave, 50.0 x 50.0 x 30.0mm

- Ultra - low noise OCXO in vibration isolated package
- Excellent frequency vs stability
- Unit weight: 200gm max
- RoHS compliant

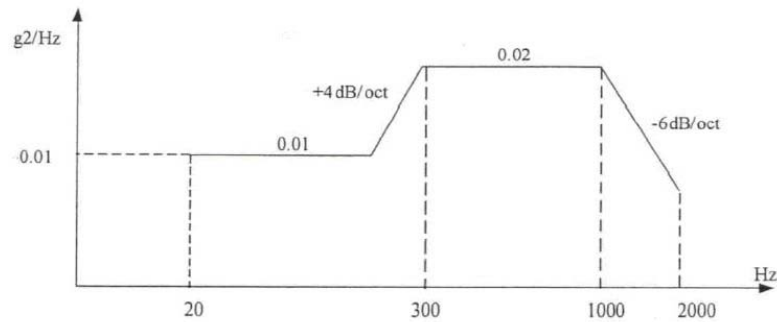
Output characteristics			
Parameter	Specification		Remarks/Test condition
Frequency range	50.0MHz ~ 130.0MHz		Standard: 100MHz, 120MHz
Supply voltage (Vs)	12.0V (typical)		Min: 11.4V, Max: 12.6V
Warm-up current consumption	500.0mA max		
Steady state current consumption	300.0mA max		At +25°C
Operating temperature range	-40 ~ +85°C		
RF output			
Output waveform	Sine wave		
Output load	50.0Ω		±5%
Output level	+7dBm min		
Harmonics	-30.0dBc max		
Spurious at rest	-90.0dBc max		
Phase noise at rest	See table 1		
Phase noise under random vibration	See table 2		
Warm-up time at +25°C	5.0 minute max		Δf final/ fnominal < ±100.0ppb
Frequency stability			
Initial tolerance	±300.0ppb max		At +25°C, Vc = 5V
Vs. Operating temperature range	±100.0ppb typical, ±200.0ppb max		For other please enquire
Vs. supply voltage variation	±10.0ppb max		Vs ± 5%
Long term aging/day	±2.0ppb max		After 30 days operation
Long term aging/year	±100.0ppb max		After 30 days operation
Frequency adjustment range			
Electronic frequency control (EFC)	Min: ±1.0ppm, typical: ±2.0ppm		
EFC voltage Vc	5.0V ± 4.0V		
EFC slope	Positive		
EFC input impedance	100.0kΩ min		
Absolute maximum ratings			
Supply voltage Vs	Min: -0.5V	Max: Vs + 10%	Vs to GND
Control voltage Vc	Min: -0.5V	15V	Vc to GND
Storage temperature	-55°C ~ +125°C		

Table 1: Phase noise (Unit: dBc/Hz)										
Offset	100.0MHz					120.0MHz				
	Option A	Option B	Option C	Option D	Option E	Option A	Option B	Option C	Option D	Option E
10 Hz	-90	-95	-97	-100	-105	-85	-90	-95	-97	-100
100 Hz	-125	-130	-132	-135	-137	-118	-122	-125	-127	-130
1k Hz	-155	-158	-160	-162	-164	-148	-150	-153	-155	-157
10 kHz	-165	-168	-170	-172	-174	-160	-165	-168	-170	-172
≥100 kHz	-175	-175	-175	-175	-175	-175	-175	-175	-175	-175

Table 2: Vibration sensitivity

Option	Phase noise @ 1kHz*
140	-140 dBc/Hz
145	-145 dBc/Hz
150	-150 dBc/Hz
155	-155 dBc/Hz

Vibration profile



PSD - 0.02g²/Hz according to RTCA/DO160E Curve C

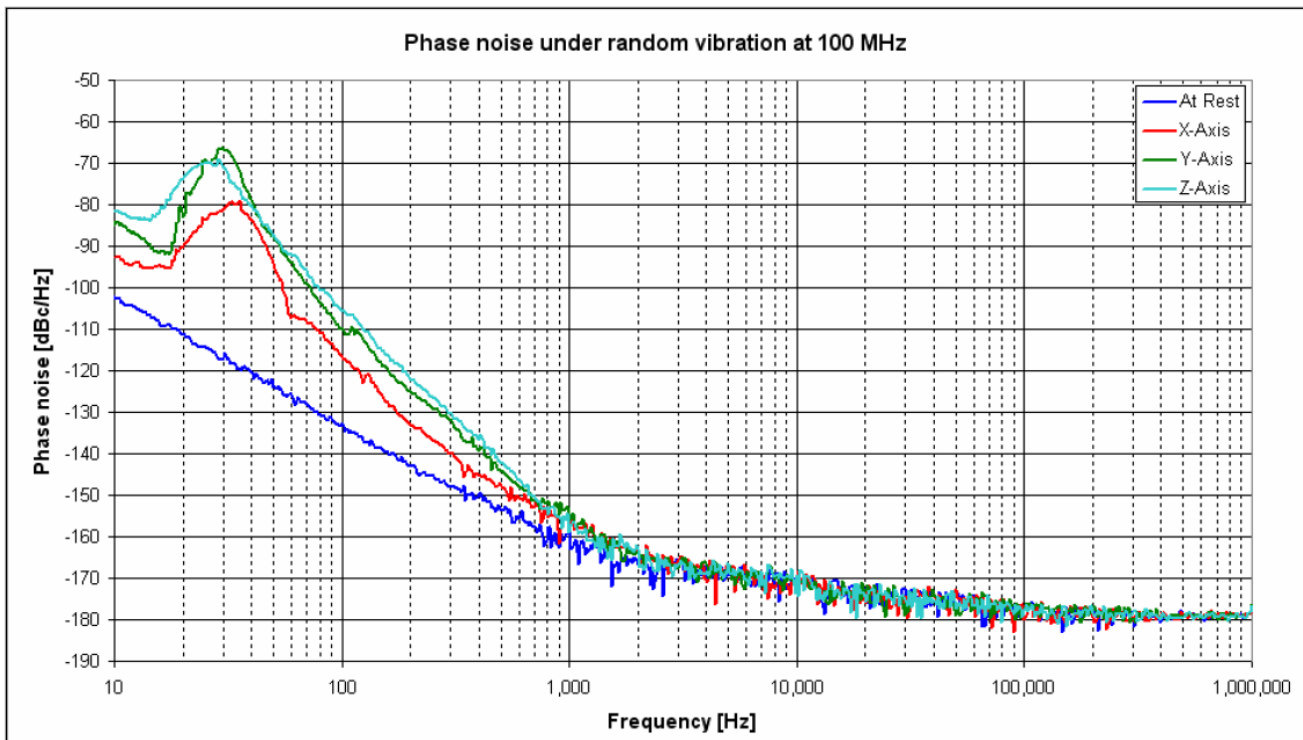
- Functional test: 1 hour each direction
- Endurance test: 3 hours each direction at 2 times the PSD level of the functional test

Notes:

Other vibration profiles on request (max PSD = 0.04g²/Hz for f vibration < 15 Hz).

Available enclosure height depends on vibration profile

Phase noise response under random vibration at 100MHz



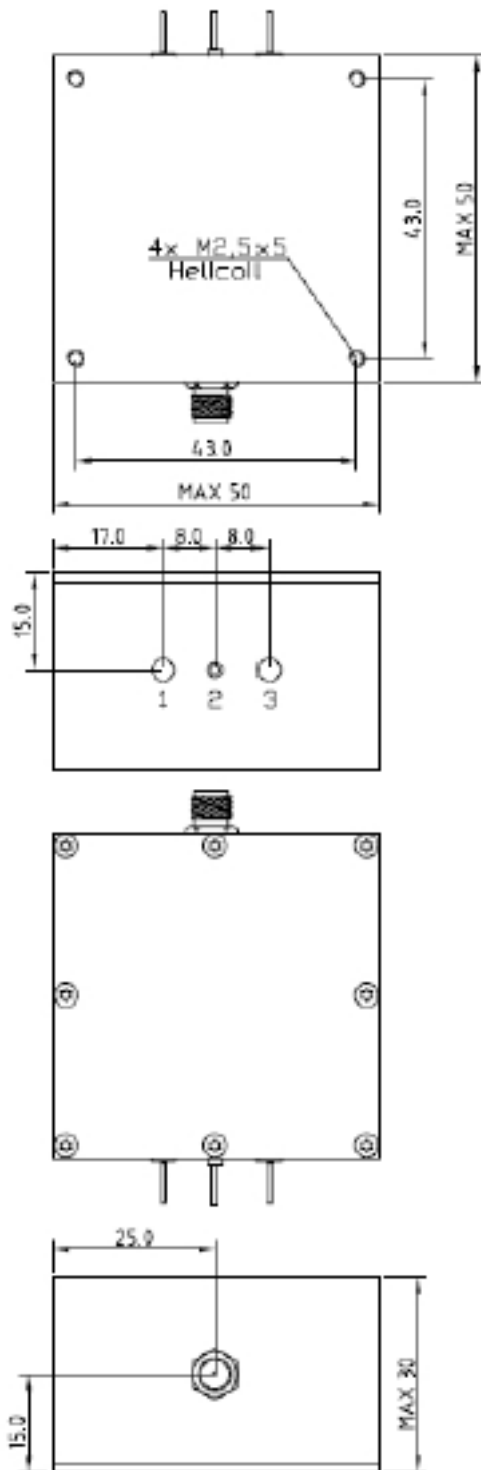
Typical phase noise response for vibration sensitivity option '155'

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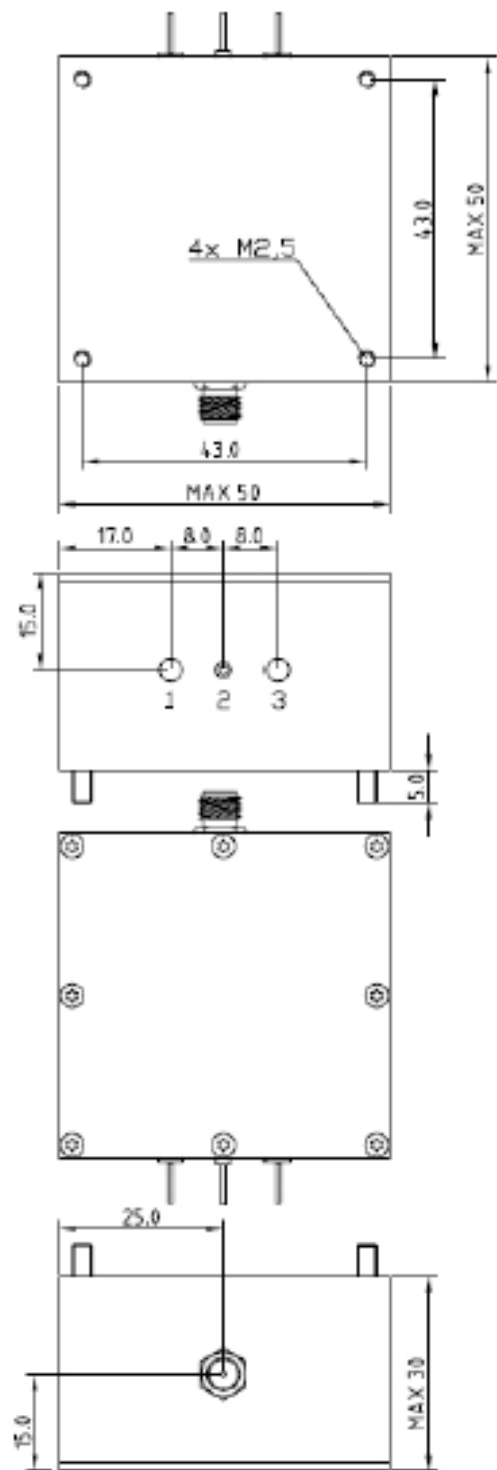
Vibration-isolated package, Sine wave, 50.0 x 50.0 x 30.0mm



Package option H " Threaded holes"



Package option S " Threaded studs"



Pin connections:

Pin #	Symbol	Function
1	V _s	Supply Voltage
2	GND	Ground
3	V _c	Control Voltage (EFC)
SMA	RF OUT	RF Output

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Vibration orientation

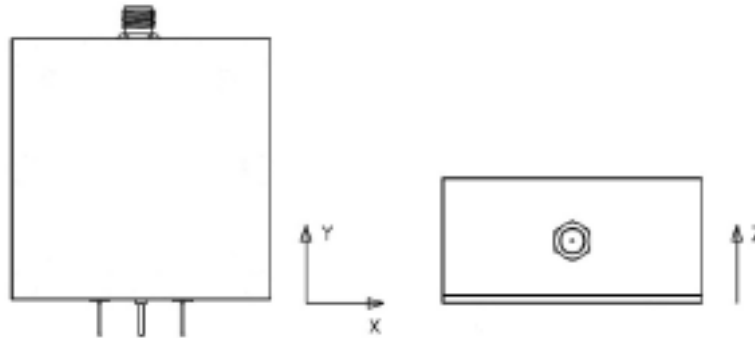


Table 3: Environmental conditions

Test	IEC60068 part...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-PRF-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6	112E		3.6	Gross leak: Test QC, Fine leak : Test QK
Solderability resistance to soldering heat	2-20 2-58	5.6	208H 210F		3.6.52 3.6.48	Test Ta Method 1 Test Td1 Method 2 Test Td2 Method 2
Shock	2-27	5.6.8	213B	516.4	3.6	Test Ea, 3 x per axes 100g, 6 ms half sine pulse
Vibration, sinusoidal	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes, 10Hz - 55Hz 0, 75mm; 55Hz-2kHz, 10g
Vibration, random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance Tests -Ageing -extended aging		5.7.1 5.7.2	108A		4.8	30 days @ 85°C, OCXO @ 25°C 1000h, 2000h, 8000h @ 85°C

ACT part number information

ACT will provide a unique part number with full specification based on your requirements, please provide the following details.

ACT series	Frequency (MHz)	Supply voltage (V)	Output type	Package type	Frequency stability (ppb)	Operating temperature range (°C)	Phase noise	Vibration sensitivity
OX770				"H" or "S"			Table 1	Table 2

Drawing control: (Internal use only)
Issue number : 1
Date : 01/06/2017
Internal reference : O1