Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

OCXO3312C-10MHz-D-V
Very Low Power G Sensitivity and High Stability Miniature OCXO

Features and Benefits

Good G-sensitivity performance with less than 1 ppb / G
Low power consumption (up to 180mW at +25°C)
Low long term aging (less than ±1 ppm over 10 years)
3.3V with min. +4 dBm sine wave output
Outstanding fast warming-up (up to 30s)
Miniature DIP8 sizes

Typical Applications

Mobile Test Equipment
Portable Wireless Communication
Battery Powered Applications
Beacon and Rescue Systems

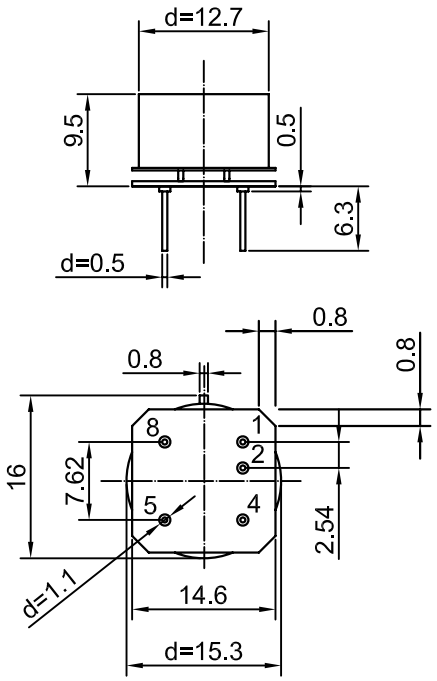
Description

OCXO3312C-10MHz-D-V offers state-of-the-art design which allows low power consumption, good G-sensitivity performance and frequency stability, along with reliable long term aging, all within a compact package.

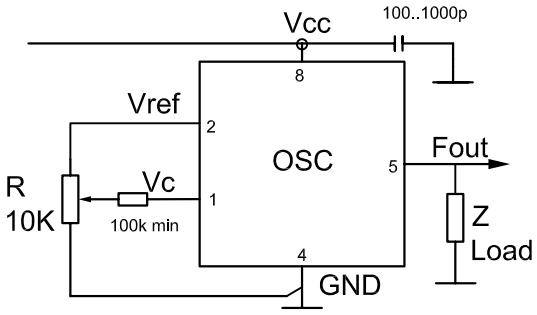
Mechanical Drawing & Pin Connections

Drawing No: MD170001-2

Physical dimensions



Schematic connections



Pin	Signal
1	Electrical tuning
2	Reference voltage
4	GND
5	RF Out
8	+V Supply

Unit in mm
1mm = 0.0394 inches

Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

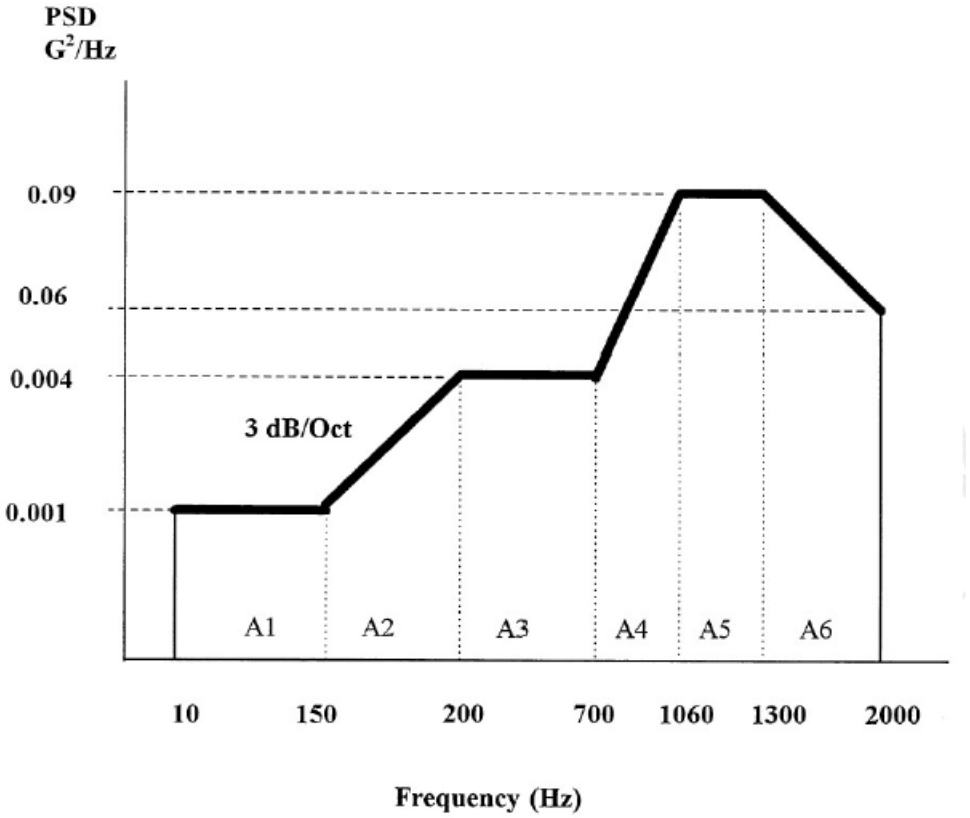
OCXO3312C-10MHz-D-V
Very Low Power G Sensitivity and High Stability Miniature OCXO

Specifications

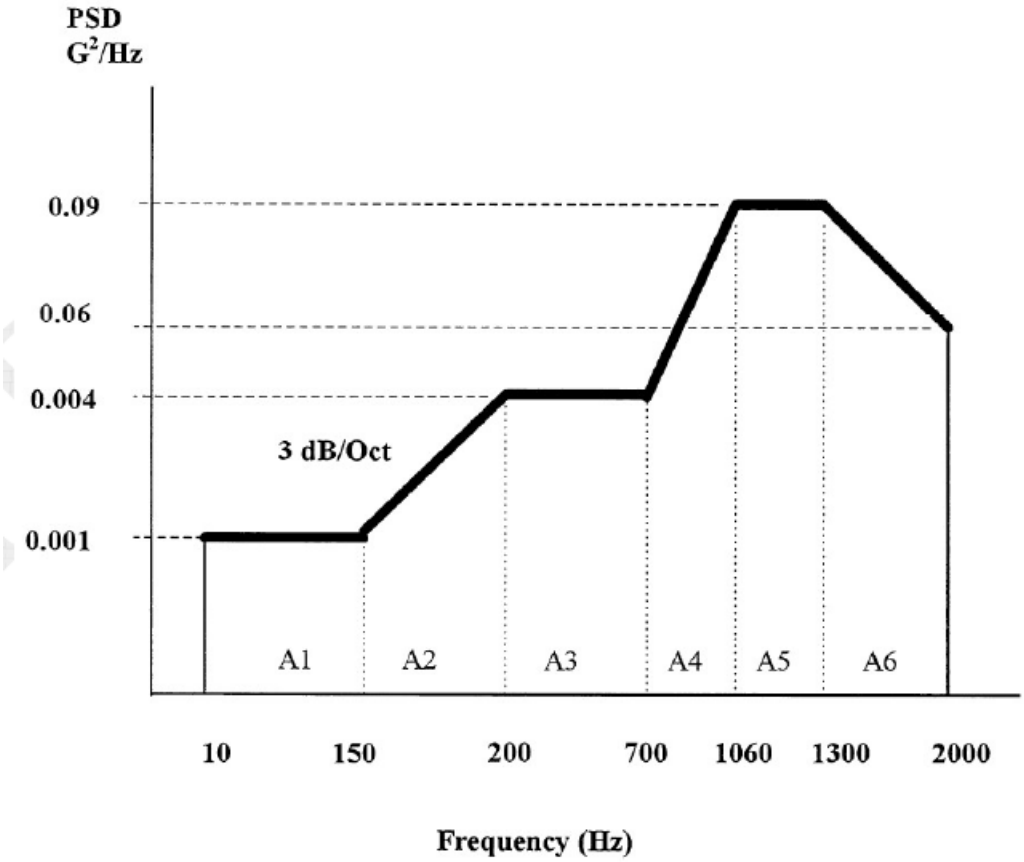
Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	F_{nom}			10		MHz	
Output Waveform				Sine wave			
Output Level	L	V_{CC} = 3.3V	+4			dBm	
Output Load	R_L			50		Ohm	
Harmonics Level					-25	dBc	
Sub-harmonics Level				none			
Power Supply							
Voltage	V_{cc}		3.15	3.30	3.45	V	
Power Consumption		Warm-up time			1200	mW	10 MHz, -40°C to +85°C
		Steady-state, +25°C		180			
Warm-up Time:	T_{up}	At +25°C to ∆f/f = 1e-7 At +25°C to ∆f/f = 1e-8	30	60 120		sec	ref. to frequency after 15 minoperation.
Frequency Control							
Control Voltage range	V_c		0		2.8	V	
Tuning Range		Compliance with 10 years of aging	±0.3	±1.0		ppm	Positive slope
Reference Voltage	V_{ref}		2.7	2.8	2.9	V	
Frequency Stability							
Initial Tolerance	$(f-f_0)/f_0$	+25°C, V_C = 0.5*V_{ref}		±0.1		ppm	
Versus Temperature		ref 25°C,air flow 0.5 m/s max		±100		ppb	
Versus Supply Voltage		Ref V_{CC}typ		±2		ppb	
Versus G - sensitivity		Worst direction, 0 – 1 kHz vibration BW		<1.0		ppb/G	Consult DEI for 0-2 kHz BW
Retrace		24h work after 24h off			±10	ppb	
SSB Phase noise		10 Hz offset			<-120	dBc/Hz	
		100 Hz offset			<-140		
		1 KHz offset			<-150		
		10 KHz offset			<-160		
		100 KHz offset			<-165		
Dynamic Phase Noise		10 Hz offset				dBc/Hz	
		100 Hz offset					
		1 KHz offset					
		10 KHz offset					
		100 KHz offset					
Allan Variance		1s	5		30	e-12	
Long Term Aging(10 years)		After 30 days of operation		±1		ppm	
Environmental Conditions							
Operating temperature range	-40°C to +85°C						
Storage temperature range	-60°C to +85°C						
Airflow Velocity	0.5 m/s maximum						
Power Voltage	-0.5V to V_{CC} + 20%						
Control Voltage	-0.5V to 6V						
Humidity	Non-condensing 95%						
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms						
Vibration	Per MIL-STD-202, 10G swept sine 10 to 2000 Hz						
Soldering Condition	Hand solder only – not reflow compatible 260°C 10s (on pins)						
Washing Condition	Washing with water or alcohol based detergent allowed only with final enough drying stage						

Harsh Environment Exposure: Operational Random Vibration

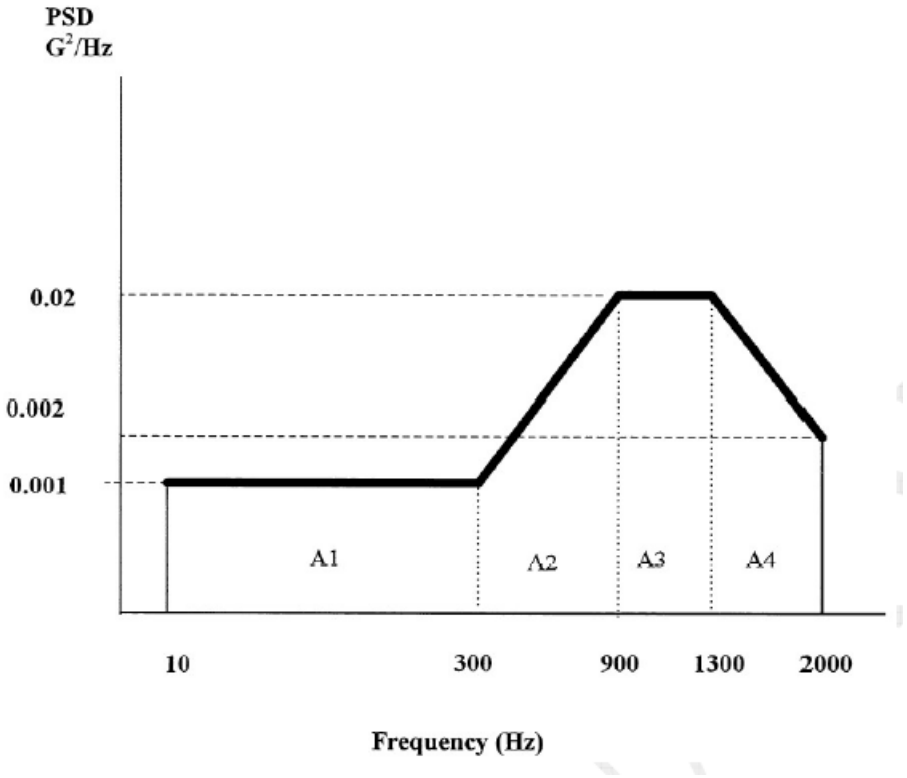
Random Vibration (Operational Level) Z axis



Random Vibration (Operational Level) Y axis



Random Vibration (Operational Level) X axis



Dynamic Phase Noise Data

Y,Z axis

offset,Hz	g2/Hz	0.25ppb/G dBc/Hz
10	0.001	-105
150	0.001	-128
200	0.004	-125
700	0.004	-135
1060	0.009	-126
1300	0.09	-127
2000	0.06	-133

X axis

offset,Hz	g2/Hz	0.25ppb/G dBc/Hz
10	0.001	-105
300	0.001	-134
900	0.02	-131
1300	0.02	-134
2000	0.002	-148