ULTRA PRECISION ULTRA SHORT-TERM STABILITY AND LOW PHASE NOISE DOCXO MV336

Features:

- ***Standard frequencies: 5.0 MHz and 10.0 MHz***
- ***Ultra low phase noise level close to the carrier***
- ***Stability vs. temperature: up to ±2x10^{-11}***
- ***High long-term stability: up to ±1x10^{-8}/year***
- ***Short term stability (Allan deviation): up to 8x10^{-14} per 1 sec***
- ***Power supply: 12 V***
- ***Available as RoHS***
- ***Analog, digital or no frequency control***
- ***Warranty period – 2 years from the date of shipment***
- ***Should be stored in a temperature controlled room in original packaging only***

ORDERING GUIDE: MV336–B 003 D–10.0MHz–LN–A–1S/1.2E-13–10S/2E-13–100S/3E-13

Availability of certain stability vs. operating temperature range		±5x10^{-11}	±3x10^{-11}	±2x10^{-11}
		005	003	002
B	-10…+60 °C	A	A	A
C	-20…+70 °C	A	C	C

A – available, C – consult factory

For other temperature ranges see designation at the end of Data Sheet

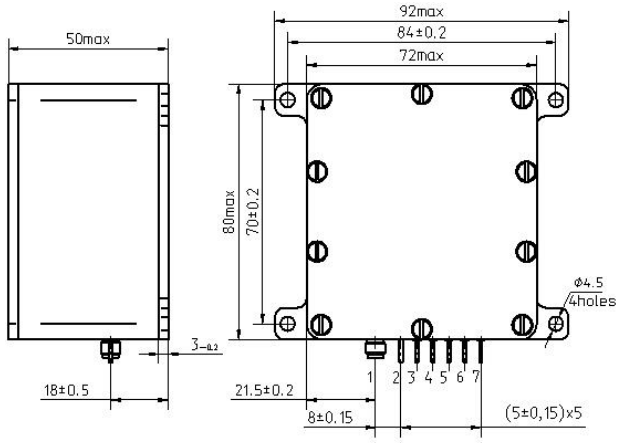
Availability of certain aging values	
E	±3x10^{-8}/year
D	±2x10^{-8}/year
C	±1x10^{-8}/year

Frequency adjustment type	
A	analog
D	digital
R	no frequency control, untuned
-	no frequency control

Phase noise, dBc/Hz, at offset	Frequency 10 MHz		
	LN	ULN	IULN
0.1 Hz	-90	-92	-94
1 Hz	-120	-120	-124
10 Hz	-145	-145	-147
100 Hz	-157	-157	-157
1000 Hz	-163	-163	-163
10000 Hz	-164	-164	-164

Frequency 5 MHz		
	LN	ULN
0.1 Hz	-96	-100
1 Hz	-126	-130
10 Hz	-146	-150
100 Hz	-154	-158
1000 Hz	-162	-165
10000 Hz	-163	-166

Short term stability (Allan deviation)		
Per 1 sec	Per 10 sec (option)	Per 100 sec* (option)
< 1.2x10^{-13}(1.2E-13) < 1x10^{-13}(1E-13) < 9x10^{-14}(9E-14) < 8x10^{-14}(8E-14)	< 2x10^{-13}(2E-13) < 1.7x10^{-13}(1.7E-13)	< 3x10^{-13}(3E-13) <2.5x10^{-13}(2.5E-13)



Pin	Function		
	Analog frequency adjustment	Digital frequency adjustment	No frequency adjustment
1	Output signal SMA	Output signal SMA	Output signal SMA
2	Ground (case)	Ground (case)	Ground (case)
3	Control voltage input	$\overline{\text{LDAC}}$*	NC
4	Ground for control voltage input	SCLK	NC
5	NC	DIN	NC
6	Reference voltage output	$\overline{\text{CS}}$*	NC
7	Power supply	Power supply	Power supply

* Pins pulled up to 5 V through 10 kOhm

Vibrations:	
Frequency range	10-200 Hz
Acceleration	5 g
Shock:	75 g/3±1 ms
Humidity @ 25ºC	98%

Initial tuning accuracy with different types of frequency control	R	±300x10^{-6}
	-	±5x10^{-7}
	A / D	±5x10^{-8}
Frequency stability vs. load changes (±5%)		< ±2x10^{-11}
Frequency stability vs. power supply changes (±1%)		< ±2x10^{-11}
Warm-up time within accuracy of <±5x10^{-8} @ 25^{0}C		< 14 min
Power supply (U_s)		12 V ± 1%
Steady state current consumption @ +25^{0}C ("still air")		< 650 mA
Peak current consumption during warm-up for lower operating temperature <0 ºC		< 1600 mA
Peak current consumption during warm-up for lower operating temperature ≥0 ºC		< 1100 mA

Output waveform	SIN
Level	≥ +4 dBm
Load	50 Ohm ± 5%
Harmonics	≤ -30 dBc
Frequency pulling range (for A and D options)	≥ ±3x10^{-7}*
Analog frequency control with external control voltage	0…5 V
Analog frequency control with reference voltage	+5 V
Digital frequency control by SPI protocol	
DAC type	MAX5719 (20 bit)

*** sufficient to compensate aging during 10 years**

Additional notes:

For non-standard operating temperature ranges please use the following two letters designations (first letter for the lower limit, second letter for the upper limit), ºC:

E	F	G	H	J	K	L	M	N	P	Q	R	S	T
-40	-30	-20	-10	0	+10	+30	+40	+45	+50	+55	+60	+65	+70

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