

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

Features:

- Standard frequencies: 5.0 MHz and 10.0 MHz
- Short term stability (Allan deviation): up to 1.5×10^{-13} per 1 sec
- Stability vs. temperature: up to $\pm 2 \times 10^{-11}$
- High long-term stability: up to $\pm 1 \times 10^{-8}$ /year
- Ultra low phase noise level close to the carrier
- Power supply: 12 V
- Available as RoHS
- Analog, digital or no frequency control

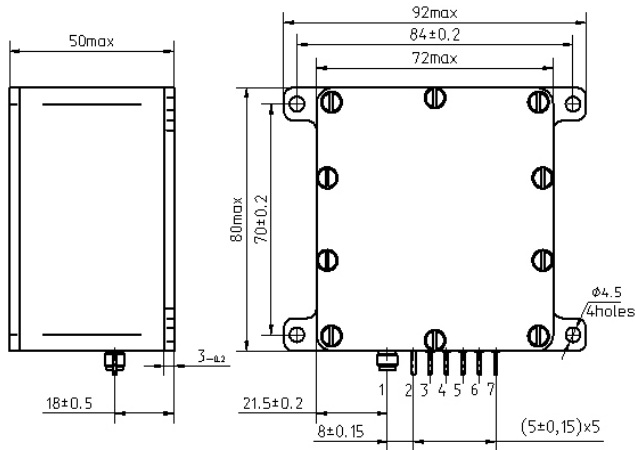
Frequency adjustment type	
A	analog
D	digital
-	no frequency control

ORDERING GUIDE: MV336-B 003 D-10.0MHz-ULN-A-1S/2E-13-10S/3E-13-100S/4.5E-13

Availability of certain stability vs. operating temperature range		$\pm 1 \times 10^{-10}$	$\pm 5 \times 10^{-11}$	$\pm 3 \times 10^{-11}$	$\pm 2 \times 10^{-11}$
		01	005	003	002
A	0...+55 °C	A	A	A	A
B	-10...+60 °C	A	A	A	C
C	-20...+70 °C	C	C	C	C

A – available, C – consult factory

Availability of certain aging values	
F	$\pm 5 \times 10^{-8}$ /year
E	$\pm 3 \times 10^{-8}$ /year
D	$\pm 2 \times 10^{-8}$ /year
C	$\pm 1 \times 10^{-8}$ /year



Phase noise, dBc/Hz:	Standard frequency			
	10 MHz			5 MHz
	-	LN	ULN	-
0.1 Hz	< -80	< -85	< -92	< -97
1 Hz	< -113	< -116	≤ -119...-120	< -125
10 Hz	< -143	≤ -144	≤ -145	< -138
100 Hz	< -154	< -156	< -157	< -148
1000 Hz	< -160	< -160	< -160	< -154
10000 Hz	< -160	< -160	< -160	< -157

Short term stability (Allan deviation)		
Per 1 sec	Per 10 sec (option)	Per 100 sec* (option)
< 5×10^{-13} (5E-13)	< 5×10^{-13} (5E-13)	< 5×10^{-13} (5E-13)
< 4×10^{-13} (4E-13)	< 4×10^{-13} (4E-13)	< 4.5×10^{-13} (4.5E-13)
< 3×10^{-13} (3E-13)	< 3×10^{-13} (3E-13)	
< 2×10^{-13} (2E-13)	< 2.5×10^{-13} (2.5E-13)*	
< 1.5×10^{-13} (1.5E-13)*		

* for 10 MHz only

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	LDAC*	NC
4	Ground for control voltage input	SCLK	NC
5	NC	DIN	NC
6	NC	CS*	NC
7	Power supply	Power supply	Power supply

* Pins pulled up to 5 V through 10 kOhm

Frequency stability vs. load changes ($\pm 5\%$)	< $\pm 2 \times 10^{-11}$
Frequency stability vs. power supply changes ($\pm 1\%$)	< $\pm 2 \times 10^{-11}$
Warm-up time within accuracy of $\leq \pm 5 \times 10^{-8}$ @ 25°C	< 14 min
Power supply (U _s)	12 V $\pm 1\%$
Steady state current consumption @ +25°C ("still air")	< 650 mA
Peak current consumption during warm-up	< 1600 mA

Output waveform	SIN
Level	≥ +4 dBm
Load	50 Ohm $\pm 5\%$
Harmonics	≤ -30 dBc
Frequency pulling range	≥ $\pm 1 \times 10^{-7}$
Analog frequency control with external control voltage	0...5 V
Digital frequency control by SPI protocol	
DAC type	MAX5719 (20 bit)

Vibrations:	
Frequency range	10-200 Hz
Acceleration	5 g
Shock:	75 g/3±1 ms
Humidity @ 25°C	98%
Storage temperature range	-55...+85°C

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), °C:

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	W	X
-60	-55	-50	-45	-40	-30	-20	-10	0	+10	+30	+40	+45	+50	+55	+60	+65	+70	+75	+80	+85

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