

LOW PROFILE PRECISION OCXO WITH DIGITAL FREQUENCY CONTROL MV200M

Features:

- High stability vs. temperature: up to $\pm 2 \times 10^{-10}$
- 5V or 12V power supply
- Package height down to 10 mm
- Frequency range 10,0...40,0 MHz
- SPI interface

Power supply	Output	Package type, mm	
5V	SIN	51x51x12.7	Z12.7
12V	HCMOS	51x51x10	Z10

ORDERING GUIDE: MV200M-C 2 E-12V-SIN-Z10-10.0MHz-ULN

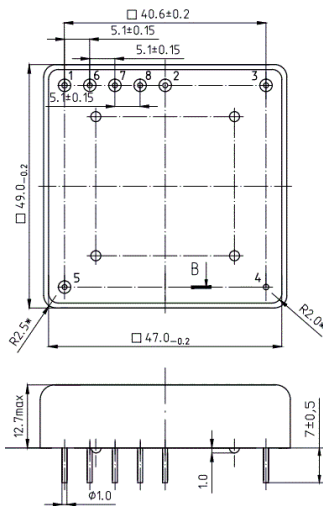
Availability of certain stability vs. operating temperature range (for 10 MHz)		$\pm 2 \times 10^{-9}$	$\pm 1 \times 10^{-9}$	$\pm 5 \times 10^{-10}$ *	$\pm 2 \times 10^{-10}$ *
		2	1	05	02
A	0...+55°C	A	A	A	A
B	-10...+60°C	A	A	A	A
C	-20...+70°C	A	A	A	A
D*	-40...+70°C	A	A	A	A
EX*	-40...+85°C	A	A	A	C

*for H= 12.7 mm; A – available, C – consult factory

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

Availability of certain aging values for certain frequencies		Standard frequencies				
k = 1, 2, 3, 4		10,0 MHz (10,0xk) / MHz	12,8 MHz (12,8xk) / MHz	13,0 MHz (13,0xk) / MHz	16,384 MHz (16,384xk) / MHz	20,0 MHz (20,0xk) / MHz
		H	G	F	E	D
H	$\pm 2 \times 10^{-7}$ / year	NA	NA	NA	A	A
G	$\pm 1 \times 10^{-7}$ / year	A	A	A	A	C
F	$\pm 5 \times 10^{-8}$ / year	A	A	A	C	NA
E	$\pm 3 \times 10^{-8}$ / year	A	A	C	NA	NA
D	$\pm 2 \times 10^{-8}$ / year	A	C	NA	NA	NA

A – available, NA – not available, C – consult factory



Digital frequency control

#	Pin's designation
1	CS
2	Uref
3	Rf
4	GND
5	Us
6	N/C
7	SDIN
8	SCLK

Analogue frequency control

#	Pin's designation
1	Uin
2	Uref
3	Rf
4	GND
5	Us
6	N/C
7	N/C
8	N/C

H = 12,7 mm for Z12,7;
H = 10 mm for Z10.

Vibrations:	
Frequency range	10-500 Hz
Acceleration	5 g
Shock:	
Acceleration	75 g
Duration	3±1 ms
Humidity @ 25 °C	98%
Storage temperature range	-55...+85 °C

Phase noise, dBc/Hz, for 10 MHz		LN	ILN	ULN**	For 12 V		
					F	LNF	ULNF
1 Hz	-95	-100	-103	-108	<-90	<-90	<-100
10 Hz	-125	-130	-133	-137	<-120	<-120	<-133
100 Hz	-145	-153	-155	-157	<-150	<-150	<-158
1000 Hz	-150	-158	-160	-161	<-162	<-163	<-163
10000 Hz	-155	-160	-161	-162	<-165	<-168	<-168

** for $\pm 5 \times 10^{-10}$ temperature stability

Short term stability (Allan deviation) per 1 sec (for 10MHz)	< 5×10^{-12} ; opt. < 1×10^{-12} ; opt. < 5×10^{-13}	
Frequency stability vs. load changes, $\pm 5\%$	< $\pm 5 \times 10^{-10}$; opt. < $\pm 2 \times 10^{-10}$	
Frequency stability vs. power supply changes, $\pm 5\%$	< $\pm 5 \times 10^{-10}$; opt. < 2×10^{-10}	
Warm-up time within accuracy of $< \pm 2 \times 10^{-8}$ @ 25°C	< 3 min	
Power supply (Us)	12 V $\pm 5\%$	5 V $\pm 5\%$
Steady state current consumption @ 25°C	< 250 mA	< 500mA
Peak current consumption during warm-up***	< 550 mA	< 1200 mA
Frequency pulling range for 10 MHz	> $\pm 4 \times 10^{-7}$	
with external voltage range (Uin)	0...5 V	0...4.5 V
with digital frequency control	SPI protocol (MAX5204)	
Reference voltage (Uref)	+5 V (4.5)	+4.5 V

*** for the temperature range GT

Output	HCMOS	SIN
Level	<0.5 V... >4.0 V	>300 mV (up to 9±1dBm - optional for 12V power supply)
Rise/Fall time	<6 ns (<3 ns optional)	-
Load	10kOhm/30pF	50 Ohm $\pm 5\%$
Harmonic suppression	-	>30dBc (>50dBc optional)

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:

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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