HIGH STABILITY MINIATURE OCXO MV85

Features:

- *Small package – 1"x1"x0.5" (25x25x12.7 mm)*
- *High stability vs. temperature – up to ±5x10^{-9}*
- *Low aging – up to ±3x10^{-8}/year*
- *Low phase noise*
- *Power supply 3.3 V, 5V, 9V or 12V*
- *Frequency range 8.64 – 30.0 MHz*
- *Available as RoHS*

Power supply
3.3 V
5 V
9 V
12 V

Output type
SIN
HCMOS

ORDERING GUIDE: MV85–B 20 G–5V–SIN–10.0 MHz–LN

Availability of certain stability vs. operating temperature range		±5x10^{-8}	±3x10^{-8}	±2x10^{-8}	±1x10^{-8}	±5x10^{-9}
		50	30	20	10	5
A	0…+55ºC	A	A	A	A	A
B	-10…+60ºC	A	A	A	A	A
C	-20…+70ºC	A	A	A	A	C
D	-40…+70ºC	A	A	A	C	NA
EX	-40…+85ºC	A	A	A	C	NA

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

Availability of certain aging values for certain frequencies		Standard frequencies, MHz			
		8.64 - 13.0	13.01 – 16.0	16.01 – 20.0	20.01 – 30.0
H	±2x10^{-7}/year	A	A	A	A
G	±1x10^{-7}/year	A	A	A	C
F	±5x10^{-8}/year	A	A	C	-
E	±3x10^{-8}/year	A	C	-	-

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

Vibrations	10-500 Hz, 10g
Shock	100 g/ 3-6 ms
Humidity @ 25 ºC	98%
Storage temperature range	-55…+80ºC

Phase noise, dBc/Hz, for 8.64-13 MHz, SIN	-	LN	ULN (10MHz)
1 Hz	<-85	<-95	<-95
10 Hz	<-115	<-120	<-125
100 Hz	<-140	<-140	<-145
1000 Hz*	<-150	<-150	<-150
10000 Hz*	<-155	<-155	<-155
100000 Hz*	<-155	<-155	<-155
Short term stability (Allan deviation) per 1 s	<1x10^{-11}	<5x10^{-12}	<5x10^{-12}

* - for 3.3 V: consult factory

Frequency stability vs. load changes	<±5x10^{-9}			
Frequency stability vs. power supply changes	<±5x10^{-9}			
Warm-up time @ 25 ºC within accuracy of <±1x10^{-7}	<5 min (<1.5 min)*			
Power supply (Us)	3.3V±5%	5V±5%	9V±5%	12V±5%
Steady state current consumption @ 25ºC @ 25ºC** @ lower operating temperature @ lower operating temperature**	 <300 mA <380 mA <600 mA <600 mA	 <160 mA <250 mA <360 mA <450 mA	 <250 mA (<120 mA*) - <300 mA -	 <80 mA <100 mA <180 mA <230 mA
Peak current consumption during warm-up	<800 mA	<600 mA	<600 mA	<300 mA
Frequency pulling range	>±5x10^{-7} (>±4x10^{-7} for 8.64…10 MHz)			
with external voltage range (Uin)	0…+3.0V	0…+4.5V	0…+5 V	
with external potentiometer	20 kOhm			
Reference voltage output (Uref)	+3 V	+4.5 V	+5 V	
Slope	Positive			

* only for 9V power supply. Consult factory for details.

** for operating temperature up to +85°C

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

Due to continuous development and improvement Morion, Inc. reserves the right to modify design or specifications of its products without prior notice

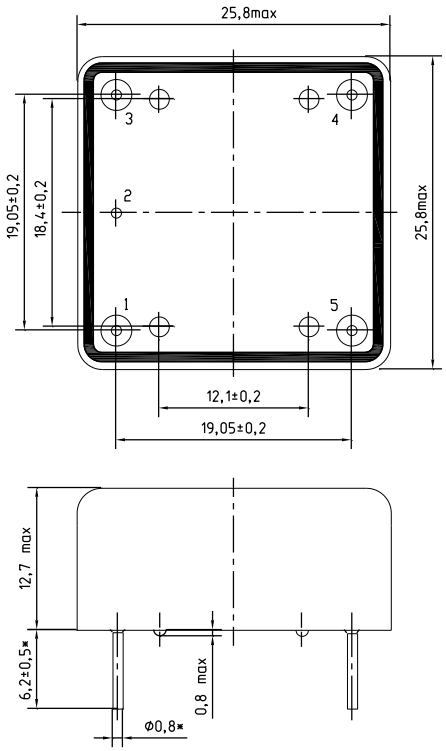
Revision 5. August 2026

Frequencies, MHz	>8.64-13.0	>13.01-16.0	>16.01-20.0	>20.01-30.0	>8.64-13.0	>13.01-16.0	>16.01-20.0	>20.01-30.0
Output	HCMOS				SIN			
Level	>4.0 V/ / >4.0 (for 5V; 9V; 12V) <0.4 / >2.7 (for 3.3V)				>225 mV (0dBm) (450±100) mV*			
Load	10 kOhm/15 pF				50 Ohm±10%			
Harmonics	-				<-30 dBc			
Phase noise, dBc/Hz @ 1 Hz	<-90	<-80	<-75	<-70	<-85	<-80	<-75	<-70
10 Hz	<-120	<-105	<-100	<-95	<-115	<-110	<-105	<-100
100 Hz	<-140	<-130	<-130	<-130	<-140	<-135	<-135	<-135
1000 Hz **	<-150	<-145	<-145	<-145	<-150	<-150	<-150	<-150
10000 Hz **	<-155	<-150	<-150	<-150	<-155	<-155	<-155	<-155
100000 Hz **	<-155	<-150	<-150	<-150	<-155	<-155	<-155	<-155
Short term stability (Allan deviation) per 1 s	$<5x10^{-12}$	$<1x10^{-11}$	$<2x10^{-11}$	$<3x10^{-11}$	$<1x10^{-11}$	$<1x10^{-11}$	$<2x10^{-11}$	$<3x10^{-11}$

* only for 9V power supply. Consult factory for details.
** - for 3.3 V: consult factory

Package drawing:

Soldered package



Pin	Designation
1	RF output
2	GND
3	Control voltage input (Uin)
4	Reference voltage output (Uref)
5	Power supply (Us)