

Revised in March 2019

Specification

Parameter	Sym.	Conditions	Value			Unit	Note	
			Min.	Typ.	Max.			
Frequency range	f_0		8		150	MHz		
Initial tolerance	$(f-f_0)/f_0$	+25°C, $V_c=0.5*V_{ref}$		±0.1		ppm		
RF output								
HCMOS (TTL) option	Load		10		15/5	kOhm pF	10/100 MHz	
	H-level voltage	V_H	$V_{cc}=5V$ $V_{cc}=3.3V$	3.7 2.4		V		
	L-level voltage	V_L			0.4	V		
	Duty cycle			45		55	%	
	Rise/Fall time					10/3	ns	10/100 MHz
Sine-wave option	Level	L	$V_{cc}=5V$ $V_{cc}=3.3V$	+7 +4		dBm		
	Load	R_L			50	Ohm		
	Harmonics level					-25	dBc	
Sub-harmonics level				none				
Power supply								
Voltage	V_{cc}		4.75 3.15	5.0 3.3	5.25 3.45	V		
Power consumption		Warm-up time Steady state, +25°C			1200	mW	10MHz, -40°C..85°C	
Warm-up time	t_{up}	at +25°C to $\Delta f/f=1e-7$ at +25°C to $\Delta f/f=1e-8$	30	60 120		s	ref. to freq. after 15 min. of operation	
Frequency control								
Control voltage range	V_c	$V_{cc}=5V$ $V_{cc}=3.3V$	0 0		4.2 3.0	V		
Tuning range		Compliance with 10 years of aging	±0.3	±1		ppm	positive slope	
Reference voltage	V_{ref}	$V_{cc}=5V$ $V_{cc}=3.3V$	4.1 2.7	4.2 2.8	4.3 2.9	V		
Frequency stability								
vs. temperature		ref. 25°C, air flow 0.5 m/s max.	±10			ppb	See ordering code	
vs. supply voltage		ref V_{cc} typ.		±2		ppb		
G – sensitivity		worst direction, 0 – 1kHz vibration BW (for 0 – 2kHz BW consult the factory)	±0.2	±1		ppb/G		
Retrace		24h work after 24h off			±10	ppb	10MHz	
SSB Phase noise		1 Hz	-105/----		-90/----	dBc/Hz	10/100MHz $V_{cc}=5V$	
		10 Hz	-135/-100		-120/-90			
		100 Hz	-155/-130		-145/-120			
		1 kHz	-165/-155		-155/-150			
		10 kHz	-170/-170		-165/-165			
		100 kHz	-172/-172		-165/-165			
Allan deviation		1 s	5		40	e-12	10MHz	
Aging	per day	after 30 days of operation	±0.1			ppb	10MHz see ordering code	
	first year		±0.015			ppm		
Environmental, mechanical conditions								
Airflow velocity	0.5 m/s maximum							
Operating temperature range	See ordering code							
Storage temperature range	-60°C to +85°C							
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 0 to 2000Hz							
Soldering conditions	Hand solder only – not reflow compatible. 260°C 10s (on pins)							
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage							

For ordering code – see next page

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Ordering code

MXO37	/14U -	C	58	C	5	S	- 10 МГц
	1	2	3	4	5	6	

1	Packaging type
<i>Code</i>	<i>Case</i>
/14U	14 DIP

2	Temperature range
<i>Code</i>	<i>Specification</i>
A	0°C..50°C
B	-10°C..60°C
C	0°C..70°C
D	-20°C..70°C
E	-30°C..70°C
F	-40°C..85°C
G	-55°C..85°C
Q	-60°C..85°C

3	Stability over temperature			
<i>Code</i>	<i>Specific.</i>	<i>Temperature range code available for 10MHz 5V</i>	<i>Temperature range code available for 100MHz 5V</i>	
XY	±Xe-Y			
19	±1e-9	-	-	
29	±2e-9	-	-	
39	±3e-9	A, B	-	
59	±5e-9	A, B, C, D, E	-	
18	±1e-8	A, B, C, D, E, F, G, Q	A	
28	±2e-8	A, B, C, D, E, F, G, Q	A, B, C, D, E	
38	±3e-8	A, B, C, D, E, F, G, Q	A, B, C, D, E, F	
58	±5e-8	A, B, C, D, E, F, G, Q	A, B, C, D, E, F, G	
17	±1e-7	A, B, C, D, E, F, G, Q	A, B, C, D, E, F, G	

5	Supply voltage
<i>Code</i>	<i>Specification</i>
3	3.3V±5%
5	5V±5%

4	Aging per day/year, ppb/ppm	
<i>Code</i>	<i>Specification</i>	
A	0.1/0.015*	≤10 MHz
B	0.2/0.02	
Z	0.3/0.03	≤20 MHz
C	0.5/0.05	
D	1/0.1	≤40 MHz
E	1.5/0.15	≤50 MHz
F	2/0.2	≤120 MHz
G	3/0.3	
H	5/0.5	≤150 MHz

* available for temperature range A,B,C,D,E

6	Output
<i>Code</i>	<i>Specification</i>
T	HSMOS
S	Sine wave

Deviation of the parameters is possible on customer's requirements. Please consult the factory.